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Exploring the Role(S) of Community Colleges in Addressing Wicked Problems Through Multi-Stakeholder Collaboration: An Entrepreneurial Approach to Sustainability

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EXPLORING THE ROLE(S) OF COMMUNITY COLLEGES IN ADDRESSING

WICKED PROBLEMS THROUGH MULTI-STAKEHOLDER COLLABORATION:

AN ENTREPRENEURIAL APPROACH TO SUSTAINABILITY

by

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A Proposal Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

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COMMUNITY COLLEGE LEADERSHIP

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ABSTRACT

EXPLORING THE ROLE(S) OF COMMUNITY COLLEGES IN ADDRESSING WICKED
PROBLEMS THROUGH MULTI-STAKEHOLDER COLLABORATION:
AN ENTREPRENEURIAL APPROACH TO SUSTAINABILITY

Samantha Bryant Steidle
Old Dominion University, 2021
Director: Dr. Christopher Glass
Co-Directors: Dr. Mitchell Williams
                Dr. Phillip Reed

For years, scientists, policymakers, business leaders, and entrepreneurs have warned of

social, environmental, and economic risks throughout society. Although researchers have

explored the role of baccalaureate-granting institutions in addressing wicked problems of

sustainability through multi-stakeholder initiatives, the role of *community colleges* in addressing

wicked problems of sustainability through multi-stakeholder initiatives was largely unknown.

Additionally, a research gap existed regarding how the mission of community colleges is aligned

with addressing wicked problems of sustainability, such as poverty, inequality, hunger,

homelessness, and climate change.

This qualitative case study aimed to answer two research questions: (1) How do leaders

of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship,

economic development, and addressing wicked problems of sustainability? (2) How do

community college leaders in multi-stakeholder initiatives describe how the mission of

community colleges is aligned with addressing wicked problems of sustainability?

Purposive sampling was used to recruit twenty-eight participants, including thirteen program

leaders of MSIs and fifteen community college MSI leaders. The program leaders have (a)

addressed social, economic, and environmental wicked problems of sustainability, (b) included

community colleges or trade schools as stakeholders, (c) yielded impressive measurable

outcomes that are documented, and (d) incorporated entrepreneurialism and/or entrepreneurial problem-solving. Data collection involved semi-structured interviews, along with retrieval of artifacts in the form of research studies, government reports, and related websites and/or entrepreneurial problem-solving. Data collection involved semi-structured interviews, along with retrieval of artifacts in the form of research studies, government reports, and related websites.

Findings indicated the community college roles include educator, strategic leader, local convener, economic development partner, and grant partner. Findings also indicated that the mission of community colleges is aligned with addressing wicked problems of sustainability (SDGs). The value created by the entrepreneurial programs served to strengthen the mission alignment through increased access, student success, economic development partnerships, and support for local communities.

The study concluded with a recommendation for policymakers, funders, and community college leaders to allocate pilot funding for the creation of a community college plan for SDG localization, as well as a community college systemic innovation lab (I-Lab) to further develop and execute the plan. The overarching goal of the I-Lab is to address wicked problems aligned with the community college mission through open-access, scalable, localized, and data-driven strategies.

This dissertation is dedicated to my family. Thank you to my husband, David Steidle, who encouraged me to prioritize education, despite the short-term sacrifices. Thank you to our daughter, Olivia Steidle, who inspired much of this work. To my parents, whose sacrifices I watched my entire childhood, I owe a debt of gratitude for your hard work in achieving social mobility for our family. Thank you to my mother, Dr. Stephanie Bryant, who taught me what scaling positive societal impact through higher education really looks like. Your work inspires me every day. Thank you to my father, Gary Bryant, for always being there for us girls, loving us unconditionally, and allowing me to be occasionally oppositional and independently minded. To my sister, Amber Locascio, you inspire me beyond belief, and despite all of our differences, you are my oldest best friend. I hope this work also inspires little Aubrey and Maddox.

Thank you to my wonderful in-laws, Dr. Ernest Steidle and Martha Steidle, who were incredibly influential in my educational pursuits, as they expected nothing less than a doctorate. Special thanks to Dr. Walter Steidle for instilling a love of education and setting the expectation for two generations of doctorates in the Steidle Family, including Dr. Elizabeth Steidle Hartley, Dr. Katherine Steidle Price, and David Walter Steidle, JD. Thank you to the Ohio Steidles.

The dissertation was inspired by the work of the late Cabell Brand, whose 2010 book was titled, *If Not Me, Then Who? How You Can Help with Poverty, Economic Opportunity, Education, Healthcare, Environment, Racial Justice, and Peace Issues in America*. In the book, he encouraged entrepreneurial changemakers to think globally but act locally. When I first met him, he was 90 years old. He asked what I wanted to accomplish, and I told him that community college students deserved the best in entrepreneurial education so they could change the world. His calls after that meeting influenced my career and life trajectory. For that, I will always be grateful. I am also thankful to the Cabell Brand Center board members for continuing his work.

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This dissertation would not have been possible without the guidance of my committee chair, Dr. Christopher Glass, as well as committee members, Dr. Mitchell Williams and Dr. Philip Reed. Thank you to Dr. Christopher Glass for your patience, guidance, and willingness to make room for futuristic and interdisciplinary thinking within the quite traditional field of academia. From the moment I met you, you were kind and inclusive while always offering practical yet brilliant advice. You viewed problems as opportunities to navigate, which will undoubtedly prove to be quite an asset for re-building our institutions post-pandemic.

Thank you to Dr. Williams for expecting nothing but the best from your students. Your authentic appreciation for community colleges came across during lectures, throughout your research, and in every interaction with you. Community colleges need advocates like you, and your advocacy inspired much of this work. Dr. Philip Reed, thank you for agreeing to participate in the study and for your willingness to view economic development through an entrepreneurial lens. I look forward to making you all proud for years to come. To all of the participants, thank you for taking the time to participate in this study.

Thank you to Old Dominion University for being an entrepreneurial institution and the Community College Leadership program faculty and staff for creating a safe space for creative problem-solving in academia. Thank you to fellow cohort members for being incredible.

Thank you to mentors and supporters including Dr. Glenn Dubois, Dr. Robert Sandel, Dr. John Rainone, Dr. Rebecca Corbin, Dr. Alistair Brett, Dr. Norris Krueger, Carol Tarrant, Gary Schoeniger, Dan Smith, Kat Pascal, Walker Nelms, Lynda Foster, Deborah Squire, and Alecia Nash for understanding the power of entrepreneurial changemaking and for moving the field of community college entrepreneurship forward.

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CHAPTER 1

INTRODUCTION

The purpose of this qualitative interview-based case study was to explore (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability.

Multi-stakeholder initiatives (MSIs) are defined as voluntary and self-regulated groups of stakeholders from a variety of sectors in society, including government, business, civil society, international organizations, and academia who collaborate to address common issues (Bäckstrand, 2006). The term 'leaders' of multi-stakeholder initiatives includes founders or facilitators certified in the program being studied.

Wicked problems of sustainability are defined as complex, unstructured, cross-cutting, and relentless (Weber & Khademian, 2008) problems involving the long-term viability of organizations, societies, or human civilization (Batie, 2008). According to Vasseur et al. (2017), sustainability involves three pillars of equal importance: economic, social, and environmental. Examples of wicked problems of sustainability include poverty, hunger, good health, quality education, gender equality, clean water, clean energy, infrastructure, inequality, climate action, peace, and infectious disease (United Nations Assembly, 2015). According to the literature, MSIs are cited as useful for addressing wicked problems involving high complexity, plurality, and uncertainty (Bramson & Buss, 2002; Bunker & Alban, 1997; Calton & Payne, 2003; Dukes, 1996; Forester, 1999; Healey, 1997; Hemmati, 2002; Innes, 1996, 1999; Pruitt et al., 2005; Schusler et al., 2003; Trist, 1983; Weisbord, 1992).

For years, scientists, policymakers, business leaders, and entrepreneurs have warned of social, environmental, and economic risks throughout society (World Economic Forum, 2020a). In fact, the World Economic Forum (WEF) has been sounding the alarm for years, warning of increased poverty, economic inequality, infectious disease, climate change, and many other wicked problems despite efforts to mitigate their effects (Deming, 1994). Experts in academia and throughout society have debated the role of academic institutions in addressing these wicked problems through multi-stakeholder initiatives for sustainability (Dentoni & Bitzer, 2015). For example, Dentoni and Bitzer (2015) sought to analyze the role that university academics play in dealing with wicked problems. With over 1,100 community colleges across the country (AACC, 2020a), these institutions are well-positioned to serve as incubators of innovation for complex social, economic, and environmental challenges. After all, student success often hinges on overcoming barriers associated with wicked problems, such as hunger, homelessness, and unemployment (Goldrick-Rab et al., 2017).

Research Gap

The existing literature about multi-stakeholder initiatives designed to address wicked problems of sustainability focuses on the role of universities, businesses, and non-governmental organizations (NGOs) (Mena & Palazzo, 2012; Schouten & Glasbergen, 2011; Von Geibler, 2013). Although researchers have explored the role of baccalaureate-granting institutions in addressing wicked problems of sustainability through multi-stakeholder initiatives (Dentoni & Bitzer, 2015), no researchers have explored the role of *community colleges* in addressing wicked problems of sustainability through multi-stakeholder initiatives. Additionally, a research gap exists in determining how the mission of community colleges is aligned with addressing wicked problems of sustainability.

Research Questions

The researcher aimed to explore the potential of community colleges to address wicked problems of sustainability through two research questions:

1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?

2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

In addition to the primary research questions, the researcher attempted to uncover a secondary layer of inquiry. Figure 1 provides a conceptual framework for how both layers of research questions are related.

Figure 1

Conceptual Framework for Research Questions
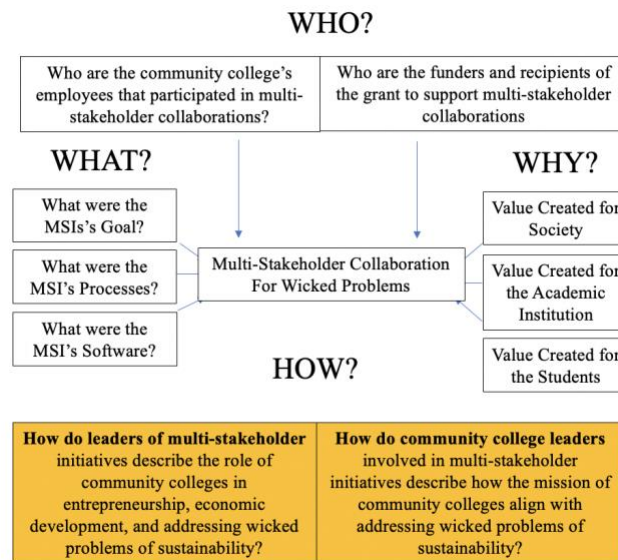
Background

This section contains key topics pertinent to the study, including MSIs, global challenges, wicked problems, and sustainable development goals. In addition, an example of a multi-stakeholder initiative addressing a wicked problem of sustainability is provided. The outcomes of the initiative are also explored.

Multi-Stakeholder Initiatives

In recent years, MSIs have gained popularity as a strategy for addressing complex societal problems (Fowler & Biekart, 2017). Roloff (2008) defined MSIs as organizational structures that leverage collective action beyond boundaries. Freeman (1984) described the phenomenon as "any group or individual who can affect or is affected by the approach to the issue addressed by the network" (p. 25). Although many different definitions of MSIs exist, common characteristics across all include the convening of individuals with different interests to communicate for the purposes of making a collaborative win-win decision through democratic participation (Hemmati, 2002). For the purposes of the dissertation, multi-stakeholder networks are defined in the more broad and holistic definition of Bäckstrand (2006), which allows for a variety of stakeholder combinations.

MSIs go by many different names, including cross-sector partnerships, multi-stakeholder collaboration, community collaborations, transdisciplinary collaborations, multi-stakeholder platforms, interorganizational collaboration, and collaborative planning (Stibbe et al., 2019). The initiatives are often seen as a viable response to the emergence of wicked problems (Palazzo & Scherer, 2008; Scherer et al., 2013; Waddock, 2013). Many researchers view the networks as a strategy for democratic participation (Habermas, 1998; Palazzo, 2002; Rhodes, 2000).

MSIs are quite common across the globe. Studies across Britain and Germany indicated between 65% and 82% of respondents have participated in a version of multi-stakeholder initiatives (Burchell & Cook, 2006; Klewes, 2004). The geographic scope and scale range from local problem-solving task forces and forums (Healey et al., 2009) to global collaborations. In addition, industry-focused multi-stakeholder networks are common, as described by the Fair Labor Association (Bobrowsky, 2000; O'Rourke, 2006).

Dentoni and Bitzer (2015) affirmed that multi-stakeholder initiatives are an ideal model for leveraging interdependencies between partners necessary for addressing wicked challenges for three reasons: (a) the involvement of multiple partners across different sectors and domains of knowledge counteracts the uncertainty surrounding wicked problems (Bäckstrand, 2006; Selsky & Parker, 2005), (b) the deliberative conversation and negotiation are important for establishing a shared understanding (Selsky & Parker, 2005), reframing the problem, and sense-making, which addresses conflicting values (Rivera-Santos & Rufin, 2011), and (c) the collective participation often centers on moral legitimacy, rather than proven effectiveness (Scherer & Palazzo, 2011) voluntary action over rule-oriented requirements (Weber & Khademian, 2008), and flexible networks over static arrangements (Rasche, 2012), all of which align with the dynamic complexity surrounding wicked problems. Roloff (2008) posited that none of the participating stakeholder organizations should expect to control the process exclusively.

For years, community colleges have participated in multi-stakeholder partnerships for community-based problem-solving. The goal of this dissertation was to better understand the role community colleges play in addressing wicked problems, which are characterized by ill-defined problems with no clear problem definition or clearly defined goals (Dörner & Funke, 2017).

According to Yawson (2013), community-based problem-solving strategies are not suitable for wicked problems due to the level of complexity.

Multi-Stakeholder Example. Strategic Doing is an example of a multi-stakeholder program addressing wicked problems of sustainability. In 2004, civic leaders in North Central Indiana launched a four-year effort to transform the regional community (Hutcheson & Morrison, 2012). The Purdue Center for Regional Development (DCRC) applied for, secured, and acted as the fiscal and program lead of a $15 million grant from the U.S. Department of Labor's Employment and Training Administration (DOLETA) under the Workforce Innovations in Regional Economic Development (WIRED) grant (United States Department of Labor, 2010). Only 8% of the funding was allocated to Strategic Doing. Purdue DCRC generated 40% of the results nationally. Interestingly, the proposal did not specify how all funds would be spent but did articulate broad strategic areas and incentives for collaboration based on ideas for regional transformation (Hutcheson & Morrison, 2012). The process involved multiple stakeholders, including the local community college, gathering in civic forums to consider four questions central to the Strategic Doing process: (a) Where are we going? (b) How will we get there? (c) What could we do? (d) What should we do? (Hutcheson & Morrison, 2012).

The broad strategic areas were entrepreneurship strategy, 21st-century skills, innovation strategy, and regional civic leadership. In total, the multi-stakeholder initiative involved 40 partners, impacted 14 surrounding counties, and resulted in 60 initiatives (Hutcheson & Morrison, 2012). Impressively, 80% of the initiatives were still active in 2012, long after the funds were expended (Hutcheson & Morrison, 2012). The resulting metrics for each strategic area were reported and verified by the U.S. Department of Labor and are outlined in Appendix B.

Global Challenges

      The World Economic Forum published the 2020 Global Risk Report (World Economic Forum, 2020a). The report sounds the alarm on global issues, such as climate change and other existential risks, and calls for a multi-stakeholder approach to addressing and mitigating risk. Researchers have examined the likelihood and impact of five interconnected categories of risks, including economic, environmental, geopolitical, societal, and technological (World Economic Forum, 2020a). The focus of this report is on both a short-term and long-term perspective of these risks. According to the World Economic Forum (2020a),

> The global economy is faced with a "synchronized slowdown," the past five years have been the warmest on record and cyberattacks are expected to increase this year—all while citizens protest the political and economic conditions in their countries and voice concerns about systems that exacerbate inequality. Indeed, the growing palpability of shared economic, environmental, and societal risks signals that the horizon has shortened for preventing— or even mitigating—some of the direst consequences of global risks. It is sobering that in the face of this development when the challenges before us demand immediate collective action, fractures within the global community appear to only be widening. (p. 4)

Researchers have also warned that if a lack of coordinated action continues, the risks will only increase. The Global Risks Perception Survey findings are based on the responses of 800 action-oriented business, government, and non-profit leaders and members of the forum, in addition to 200 Global Shapers, which are described as a generation of emerging global social entrepreneurs and entrepreneurial leaders (World Economic Forum, 2020a). Top risks in 2020 highlighted in the research include: (a) risks to economic stability and social cohesion, (b) heightened risks of

climate change, (c) accelerated biodiversity, (d) consequences of digital fragmentation, and I

health systems under new pressure. In 2021, the global risk landscape changed dramatically, due

to the Coronavirus Pandemic. The top risks by likelihood were listed as (a) extreme weather, (b)

climate action failure, and (c) human environmental damage. The top risks by impact were (a)

infectious disease, (b) climate action failure, and (c) weapons of mass destruction (World

Economic Forum (2021b).

Former U.S. Vice President Al Gore has focused on the climate crisis for 20 years and is

frustrated by the neglect of this looming catastrophic issue. Recently, while speaking to Masters

of Business Administration (MBA) students at Oxford University, Gore warned that "we are in

the midst of a sustainability revolution that will have the magnitude of the industrial revolution

and the speed of the digital revolution" (Haney & Drobac, 2020, p. 1). Later, at the Nobel Peace

Prize Forum in Oslo, he asked, "Will our children ask us why we didn't act, or will they ask us

how we found the courage and rallied the resources to rise up and change?" (World Economic

Forum, 2019, p. 1).

Community colleges across America have a moral responsibility to participate in

addressing these global challenges. More importantly, the mission of community colleges is

naturally aligned with addressing wicked problems of sustainability (AACC, 2011). Community

colleges across the nation are potentially a powerful force for societal impact, if mobilized and

appropriately resourced.

Wicked Problems of Sustainability

Wicked problems of sustainability, such as poverty, hunger, and climate change, are

common throughout society (United Nations Assembly, 2015). For this reason, the topic of

addressing *wicked problems* has taken a prominent role in academic conversations related to

sustainability (Dentoni & Bitzer, 2015). Although a growing awareness exists, researchers struggle to agree on even the definition, due to the level of complexity surrounding the concept (Batie, 2008; Van Bueren, 2003). The term was originally introduced by Rittel and Webber (1973), who expressed concern about the approach to public planning when dealing with problems of various wickedness dimensions.

Despite the disagreement over the definition of wicked problems, some consensus exists surrounding the characteristics of the phenomenon. For example, wicked problems have three similarities: they change over time (Weber & Khademian, 2008), social scientists are uncertain about their root causes due to social complexity (Lazarus, 2009), and stakeholders hold different values regarding the challenges, which often causes conflict (Conklin, 2006). In addition, the properties of wicked problems often demand collective action across several sectors to create transformative and impactful change throughout the system (Waddock, 2013). Further, the action of individuals to combat wicked problems has very little impact without the collective and coordinated action with others, which is why multi-stakeholder initiatives play an important theoretical role in the dissertation (Batie, 2008; Conklin, 2006; Weber & Khademian, 2008).

Researchers have, however, acknowledged that "creating such mechanisms and making them work is in itself a wicked problem" (Jentoft & Chuenpagdee, 2009, p. 555). These challenges are a result of value struggles between partners (Andonova et al., 2009), cognitive limits of the actors involved (Batie, 2008), and unrealistic expectations on the part of public decision-makers demanding short-term results (Levin et al., 2012). In addition, the nature of wicked problems requires the acceptance that there are no absolute solutions or definite answers (Rittel & Webber, 1973), rather a need for goals that are on a scale of improvement.

Wicked problems have no solution, resist linear-logic models, and are not comprehensible based solely on quantitative and objective data. Researchers emphasized that wicked problems cannot be "solved" because they are unsolvable (Rittel & Webber, 1973). Conklin (2006) asserted, "you don't so much solve a wicked problem as you help stakeholders negotiate shared understanding and shared meaning about the problem and it's possible solution" (p. 4). The objective of the work is coherent action, not the final solution. According to Rittel and Webber (1973), wicked problems have ten core characteristics:

> **Proposition 1** There is no definitive formulation of a wicked problem.
> **Proposition 2** Wicked problems have no stopping rule.
> **Proposition 3** Solutions to wicked problems are not true-or-false, but good-or-bad.
> **Proposition 4** There is no immediate and ultimate test of a solution to a wicked problem.
> **Proposition 5** Every solution to a wicked problem is a 'one-shot operation;' because there is no opportunity to learn by trial-and-error, every attempt counts significantly.
> **Proposition 6** Wicked problems do not have an enumerable (or exhaustively desirable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.
> **Proposition 7** Every wicked problem is essentially unique.
> **Proposition 8** Every wicked problem can be considered a symptom of another problem.
> **Proposition 9** The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution.
> **Proposition 10** The planner has no right to be wrong. In other words, planners are responsible for the consequences of the actions they generate. (pp. 161–166)

According to Davies et al. (2012), traditional institutions are incapable of single-handedly addressing wicked problems. This is due to the scale, scope, and complexity of the issues across various policy domains, sectors, and political jurisdictions. Similarly, Rittel and Webber (1973) suggested:

> Approaches of the second-generation should be based on a model of planning as an argumentative process in the course of which an image of the problem and the solution emerges gradually among the participants, as a product of incessant judgment subjected to critical argument. (p. 162)

In addition, societal governance is ill-equipped to resolve wicked problems due to the linear nature of traditional methods. As such, new methods of governance are needed to address wicked issues surrounding sustainability.

Sustainable Development Goals

The United Nations Assembly (2015) captured the systemic nature of global challenges in the report titled, *Transforming our world: The 2030 agenda for sustainable development.* The report underscores the importance of addressing wicked problems. According to the report,

> Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth, and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiraling conflict, violent extremism, terrorism, and related humanitarian crises, and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity, and loss of biodiversity, add to and exacerbate the list of challenges that humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea-level rise, ocean acidification, and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing states. The survival of many societies and of the biological support systems of the planet is at risk. (United Nations Assembly, 2015, pp. 8-9)

In response to the global challenges outlined in the report, the United Nations launched the 2030 Agenda for Sustainable Development. The initiative is a universal agenda outlining a plan of action with the goal of stimulating systems change between 2015-2030 in five areas of crucial importance: people, planet, prosperity, peace, and partnership (United Nations Assembly, 2015). The report outlined 27 principles, 17 goals, and 169 actions for impacting economic, social, and environmental aspects of societal change. The purpose of the effort is to tackle systemic challenges, local needs, interests, and resources for transformative change using innovative approaches and long-term investments (United Nations Assembly, 2015). The 2030 Sustainable Development Goals are considered a "blueprint for global development, which represents a fundamental shift in thinking, explicitly acknowledging the interconnectedness of prosperous business, a thriving society and a healthy environment" (Stibbe et al., 2019, para. 2). Due to the interconnected nature of the goals, researchers advocate for addressing the challenges holistically, rather than individually in isolation (Catalyst2030a, 2020). The 17 Sustainable Development (SDGs) topics each align with the description of wicked problems re-positioned as goals. The 17 SDGs include:

1. No poverty

2. Zero hunger

3. Good health and well being

4. Quality education

5. Gender equality

6. Clean water and sanitation

7. Affordable and clean energy

8. Decent work and economic growth

9. Industry, innovation, and infrastructure

10. Reduced inequalities

11. Sustainable cities and communities

12. Responsible consumption and production

13. Climate action

14. Life below water

15. Life on land

16. Peace, justice, and strong institutions

17. Partnerships for the goals

The Sustainable Development Goals (SDGs) are an evolution of the Millennium Development Goals (MDG) goals with several paradigm shifts in thinking around the topic of development. For example, MDGs promote "treating symptoms over addressing underlying issues" while the SDGs promote treating underlying and systemic issues over symptoms (Stibbe et al., 2019, p. 6). In addition, MDGs relied on a top-down, government-delivered, and siloed approach. In contrast, the SDGs emphasize bottom-up ideas. Funding MDGs was allocated based on short-term outcomes in specific geographic areas, with a low tolerance for risks, whereas SDGs focus funding on long-term outcomes (Stibbe et al., 2019). The MDGs were designed for the 2000-2015 timeframe (Josephsen, 2017) and emphasized eight goals, which have been expanded to 17 SDGs. The original eight MDGs include:

1. Eradicate extreme poverty and hunger.

2. Achieve universal primary education.

3. Promote gender equality and empower women.

4. Reduce child mortality.

5. Improve maternal health.

6. Combat HIV/AIDS, Malaria, and other diseases.

7. Ensure environmental sustainability.

8. Global partnership for development.

Target 4.7 of the Sustainable Development Goals is particularly relevant to community colleges addressing wicked problems through the SDGs. Target 4.7 encourages inclusive and equitable quality education and lifelong learning opportunities for all students. According to the target, by 2030, all learners should have the opportunity to acquire the skills and knowledge surrounding sustainable development through educational opportunities.   The indicator suggests achievement of the target be measured based on the extent of (a) educating for global citizenship, (b) mainstreaming education for sustainable development, (c) promoting national education policies, (d) incorporating sustainability into the curricula, (e) providing teacher education, and (f) assessing the students (https://unstats.un.org/sdgs/metadata/).

In July 2020, the United Nations Association of the USA (UNA-USA) published a report titled *UN75: American Voices* (United Nations Association of the USA, 2020). In the report, researchers interviewed more than 1850 Americans and 80 experts from all 50 states, plus Washington DC and Puerto Rico to answer three key questions: (1) Are we on track to secure a better world?, (2) What kind of future do we want to create?, and (3) What action is needed for a brighter future? The study revealed 77% of participants expected a worse world based on the following SDG-related barriers: conflict and human rights violations, displacement and homelessness, growing inequality of access and opportunity, the impact of climate change, lack of education equity, lack of gender equity, lack of leadership, lack of trust in and across governments, poverty, income gaps, job loss, and systemic racism. Additionally, half of the

participants cited several SDGs as critical for the future, including quality education, reduced inequality, climate action, peace, justice and strong institutions.

Experts on the topic were chosen based on having a hand in shaping a more ideal future. The experts included UNA-USA, individuals, organizations, and governments. The United Nations recommended stakeholders "address global issues and create change through advocacy, education and community engagement", UNA-USA recommended stakeholders "engage local U.S. constituents (individuals, organizations, governments) in the UN's efforts to drive positive change around global issues", individuals recommended stakeholders "promote positive change by activism and community engagement with local organizations, promote civic engagement, educate oneself and others, and incorporate sustainable lifestyle choices". The organizations suggested stakeholders "address world-issues through public-private partnerships (community-based programs), sustainable business solutions, including alignment with the SDGs and progress tracking, future growth investment, and equitable policy development". Finally, governments were encouraged to "foster action and collaboration through sustainable policies and practices, including incorporating SDGs into policy development, collaborating globally, including ongoing engagement with the UN, engaging with the community, building support and services, and engaging in public-private partnerships" (United Nations Association of the USA, 2020).

American universities are increasingly engaging with the intersection between entrepreneurship and the UN Sustainable Development Goals. For example, in Spring 2021, George Washington University launched a new course in partnership with the International Council for Small Business (ICSB) titled Entrepreneurship Ecosystems and the UN Sustainable Development Goals (International Council for Small Business, 2021). The course is co-taught

by the president of ICSB, Dr. Ayman El Tarabishy and Dr. Norris Krueger. Dr. Krueger

recently posed the question, "Can we achieve the SDGs effectively without new and small

business?" He answered, "It is very hard to make that case. Crafting and evolving opportunities

is hard enough without having to deal with multiple stakeholders. Entrepreneurial thinking is

essential. And, as such, the SDGs represent immense opportunities". He added, "the old school

of 'entrepreneurship education' will no longer cut it; we need true educators, not just instructors.

Community colleges are uniquely positioned to develop such educators" (N. Krueger, personal

communication, March 3, 2021).

Resources are also available to support SDG implementation, measurement, funding, and

research within colleges and universities. For example, the SDG Dashboard is a tool designed

by Haub School of Business at Saint Joseph's University (https://sdgdashboard.sju.edu). The

dashboard is a mission-centric reporting, visualization, and data analytics tool designed to

support academic institutions in sharing best practices and showcasing contributions toward

advancing the SDGs. The SDGFunders dashboard is another tool, which provides data on

philanthropic support aligned with the SDGs (sdgfunders.org). The SDGfunders.org website is

part of the SDG Philanthropy Platform initiative, which was created by Candid (formally

Foundation Center) and was funded by Conrad N. Hilton Foundation, Ford Foundations, and the

Mastercard Foundation. According to the dashboard, the share of total foundation SDG funding

for 2016 in SDG#4 (Education) alone is $81,559,309,594 (https://sdgfunders.org/sdgs/). An

expanded list of resources, research, funding, and tools to support SDG implementation can be

found in Appendices P and T.

Cross-Sector Collaboration. According to the SDG report, collaboration across societal

sectors is an essential paradigm required in sustainable development for the 21st century (United

Nations Assembly, 2015). The concept of *development partnerships* includes international networks, bi-lateral agreements, multi-sectoral, multi-issue platforms, and single-issue groups (Stibbe et al., 2019). To prioritize this point, goal #17 was incorporated to encourage partnerships in pursuit of the goals through multi-stakeholder initiatives. The Partnering Initiative (TPI) published the 2019 report, *Maximizing the Impact of Partnerships for the SDGs: A Practical Guide to Partnership Value Creation*. The purpose of the report was to maximize the value created by collaboration toward the SDGs. To accomplish the report's goal, three issues were discussed, including (a) an introduction to various types of cross-sector partnerships in pursuit of the goals through multi-stakeholder initiatives, (b) the added value created through collaborative action, and (c) a guide for practical action in identifying, defining, assessing, and maximizing the types of value for partnerships (Stibbe et al., 2019).

Sustainability Activities. According to Adomßent et al. (2007), the concept of sustainability provides an ideal balance between social, ecological, and economic development with an appropriate level of complexity considered. In the 1980s, the topic of sustainability shifted to an issue of local, regional, national, and global processes. Examples of sustainability processes include: (a) local and regional encouragement to 'think global, act local,' (b) stakeholder participation and public inclusion, and (c) incorporating a holistic perspective to local challenges (ExpertInnengruppe LA21, 2010). Sustainability activities may include providing financial incentives, incorporating technology transfer, increasing public awareness, and providing training to improve decision making (ExpertInnengruppe LA21, 2010). Sustainable development has many different interpretations, highly influenced by the context and circumstance. From an economic viewpoint, the term means accumulating and maintaining many

different types of capital, which for an academic institution includes production capital, social

capital, human capital, financial and intellectual capital (Lehmann et al., 2009).

      Sustainability in Higher Education. The concept of sustainability processes catalyzed

higher education institutions to consider themselves as drivers of innovation through public-

private partnerships with stakeholders (Chatterton & Goddard, 2000). According to the literature,

academic institutions across Europe are leading this movement thanks to supra-national

European Policy outlining sustainable development frameworks to abide by (Kommission der

Europäischen Gemeinschaft, 2001). The purpose of the sustainable policy mandates is to

encourage the creation of regions across Europe that are competitive, knowledge-based, and

innovative (Kommission der Europäischen Gemeinschaft, 2001). In the context of higher

education institutions, sustainability processes focus on empowering local populations by

providing wide access to education (ÖROK, 2002), opportunities to overcome spatial barriers

(Schnell & Held, 2005), and reframing institutions of education as incubators of learning and

innovation (Schnell & Held, 2005; Streich, 2005).

Overview of the Methodology

      For this research, a qualitative, interview-based case study approach was utilized. The

qualitative approach enables a more in-depth understanding of the role of community colleges in

addressing wicked problems through multi-stakeholder collaboration (Hays & Singh, 2012). The

approach also maintains the focus on what the participants view as true, rather than what the

literature says or the researcher's opinion on the topic (Creswell, 2013). The understanding of

how community colleges can address wicked problems through multi-stakeholder collaboration

will help college leaders design solutions to their most pressing challenges, many of which are

also challenges of the surrounding community.

The researcher collected data from several sources, including semi-structured interviews and retrieval of artifacts in the form of research studies, government reports, and related websites. The semi-structured interviews with leaders of MSIs that were selected were designed to elicit insights into the primary and secondary researcher questions. During the initial interviews, the researcher leveraged the snowball technique by requesting referrals for 1-3 additional interviewees. The goal of the follow-up interviews was to add a deeper level of understanding or expert opinion surrounding each program.

Qualitative data are analyzed through a cyclical process involving data reduction, displaying, concluding, and verification (Creswell & Miller, 2000). Manual techniques were used to analyze the transcripts of participants' responses to the semi-structured interviews, based on bracketing and thematic coding. Bracketing provided a separation between the research and any bias and assumptions the researcher may have brought to the study (Hays & Singh, 2012).

The coding process relied on three cycles of analysis. The first cycle aimed to capture phrases related to foundational topics related to the research questions, including *wicked problems, community colleges, economic development/entrepreneurship, programs, and theory.* The second cycle dove deeper into first cycle topics to evaluate the various programs, including the following topics: *various SDGs, stakeholders, role, mission, and specific programs.* The third cycle of coding aimed to generate a deeper understanding of the secondary research questions and include topics such as *program goals, processes, tech platforms, value creation, various roles, funders, recipients, employees, and entrepreneurial terms.*

Significance

The significance of this topic cannot be overstated. After all, wicked problems of sustainability impact nearly every challenge faced by community college systems, students, and

society as a whole. Due to this broad impact, the significance includes policy, practical, and scholarly perspectives.

From a political perspective, the study provides policymakers with a novel way to address complex challenges by viewing community colleges as incubators of social, economic, and environmental innovation. Armed with the appropriate evidence-based programs and funding in place, community colleges have the potential to rebuild a better and more equitable post-COVID America. The researcher proposed a toolbox of solutions for a variety of policy challenges that are expected to become critically important in the coming years. While some leaders may believe community colleges should play a role in addressing wicked problems, the researcher aimed to determine whether the mission of community colleges is aligned with addressing wicked problems of sustainability.

From a scholarly perspective, the researcher introduces wicked problems through a holistic lens of complexity theory, as well as systems theory. In addition, the concept of leveraging multi-stakeholder programs in partnership with community colleges to address wicked problems is virtually non-existent throughout the literature. The researcher aimed to capture examples of this intersection, which is still emergent in the literature. The World Economic Forum (2020a, 2020b) asserted that multi-stakeholder collaboration is required to address the complex problems society faced today.

From a practical perspective, the study provides a strategy for community college institutions to increase their enrollment and retention. After all, the wicked problems faced by community college students, such as homelessness, hunger, and the ability to pay rent and utilities, often determine whether students can afford to enroll and/or continue to take classes

(Goldrick-Rab et al., 2017). Ultimately, the associated impact on enrollment and retention may threaten the financial sustainability of the entire institution.

Organization of the Study

The dissertation was organized into five chapters. Chapter 1 contains an introduction about the contemporary global challenges often cited as wicked problems, along with the United Nation's SDGs, which are designed as goals toward a solution for these problems. Relevant concepts surrounding sustainable entrepreneurship were also introduced. The chapter included the purpose, key definitions, research questions, significance, and an overview of the methodology.

Chapter 2 contains a review of the related theoretical research and the surrounding literature on the key topics, such as wicked problems, MSIs, sustainable development, and the role of community colleges in addressing wicked problems of sustainability in higher education.

Chapter 3 consists of insight into the methodology, data collection, data analysis, procedures, sampling, assumptions, limitations, and delimitations. Chapter 4 contains an interpretation of the results of the study, and Chapter 5 is comprised of a discussion surrounding the study's results, implications, and future research suggestions.

Key Definitions

Appreciative Inquiry. *Appreciative inquiry* is a theoretical framework that involves focusing less on problems that need to be solved and more on "examples of the system at its best", often through a research-based approach" (Busche & Kassam, 2005, p. 165).

Backbone Organization. A key collective impact partner responsible for "guiding vision and strategy, supporting aligned activities, establishing shared measurement practices, building public will, advancing policy, and mobilizing funding" (Turner et al., 2012, Para. 2).

Business Model Canvas. The *Business Model Canvas* is a one-page visual tool used to describe how an organization or individual "creates, delivers and captures value" (Osterwalder & Pigneur, 2010). The nine building blocks of the canvas include the key partners, key activities, key resources, cost structure, value proposition, customer relationships, channels of distribution, customer segments, and revenue streams.

Changemaker. An individual who is driven to creatively tackle an economic, social, or environmental problem. Changemakers take action, often through systemic interventions, to advance change for the purposes of simply improving society (Ashoka, 2016).

Collective Impact Partnership. Collective impact partnership refers to partnerships involving long-term commitments by a group of important actors from different sectors to a common agenda for solving a specific social problem. Their actions are supported by a shared measurement system, mutually reinforcing activities, and ongoing communications and are staffed by an independent backbone organization (Addy & Dubé, 2018).

Community-based programming. A cooperative process that involves a series of procedural tasks in which the community college serves as the leader and catalyst in effecting collaboration among people, their leaders, and other community-based organizations and agencies within its service area in identifying and seeking a resolution to major issues that are of critical concern to the community and its people (Boone, 1992, p. 10).

Complexity. The formation and reformation of patterns and structures whether in companies, research, and development teams, communities, or cities and nations (Brett, 2019, p. 19).

Customer Development. Customer Development is a value creation tool that encourages the student to consider, "What is the smallest or least complicated problem that the customer will pay us to solve?" (Blank & Dorf, 2012, p. 80).

Design. The ability to imagine that which does not yet exist to make it appear in concrete form as a new, purposeful addition to the real world (Nelson & Stolterman, 2012, p. 12).

Design Thinking. Design thinking is "a process of actions and decisions aimed at producing products, services, environments, and systems that address a problem and improve people's lives" (Boni et al., 2009, p. 409). The central tenets of design thinking are multi-disciplinary, human-centered, prototype-driven, and ideation-based (Patel & Mehta, 2017).

Ecosystem Builders. Individuals who drive long-term and system-wide change by supporting innovation and entrepreneurship in their region or community through (a) leading recognized startup ecosystem building initiatives, (b) running entrepreneurial centers and coworking spaces, (c) managing accelerators, incubators, or startup school programs, (d) serving in professional economic development or government roles, or (e) investors and serial entrepreneurs investing in building their local ecosystem (Horn, A. 2017). The Kauffman Foundation considers ecosystem building a "new emerging model for economic development in the "connected age" (Kauffman, 2021).

Ecosystem Mapping. A process involves developing categories of who is involved in the ecosystem and what role that individual plays.

Effectuation. Effectuation theory is a thinking framework and set of heuristics, which emphasizes taking action based on available resources for goal achievement (Sarasvathy, 2001).

Emergence. Outcomes that are unpredictable and seem to result from interactions between elements and which no one organization or individual can control (Kania & Kramer, 2013, p. 3).

Entrepreneurship. Entrepreneurship is "process of value creation" (Mishra & Zachary, 2014, p. 251). Entrepreneurs are "change-agents that bring that potential into reality, resulting in a wide variation in business performance and value creation" (Feld & Hathaway, 2020, p. 25). In the broader sense, entrepreneurship is the self-directed pursuit of opportunities to create value for others. By creating value for others, individuals empower themselves (G. Schoeniger, personal communication, July 15, 2020).

Entrepreneurship Education. Education is designed to enable an individual to make a unique, innovative, and creative contribution to the world through a value-creation mindset, whether as an employee or entrepreneur, regardless of the financial resources available (Bridge, 2017; Fiet, 2002).

Entrepreneurial Ecosystems. The geographically-bound systems of individuals, organizations, physical resources, social structures, and cultural values that generate new venture activity (Roundy, 2017, p. 1221).

Entrepreneurial Mindset. A cognitive process that empowers individuals to address problems and creatively generate ideas in uncertain environments (McGrath & MacMillan, 2000).

Entrepreneurial Thinking. Entrepreneurial thinking is "a mindset that emphasizes recognizing opportunity and learning to capitalize on it in a manner unique to the situation"

(Patel & Mehta, 2017, p.518). According to Patel and Mehta (2017), entrepreneurial thinking's central tenets are collaboration, value creation, discovery-driven, and resilience.

Honest Broker. "Someone who builds networks of invested players that, with integrity, moves forward a common agenda to tackle persistent, large-scale social problems" (Catalyst2030, 2020a, p. 9).

Hypocognition. Lack of ideas required to solve the issue at hand (Lakoff, 2006, p. 76).

Intrapreneurship. Acting like an entrepreneur within an established company. It's creating a new business or venture within an organization. Sometimes that business becomes a new section, or department, or even a subsidiary spinoff (Somers, 2018). Intrapreneurship is also described as, successful adaptation of entrepreneurial attitudes and strategies inside of a bureaucratic organization. These entrepreneurial employees implement startup practices within a large organization, producing valued innovation (ASB, 2021).

Logics. The formal and informal rules of action, interaction, and interpretation that guide and constrain decision-makers (Ocasio & Thornton, 1999, p. 804).

Multi-Stakeholder Initiatives. Multi-stakeholder Initiatives (MSIs) are defined as voluntary and self-regulated groups of stakeholders from a variety of sectors in society, including government, business, civil society, international organizations, and academia, to address common issues (Bäckstrand, 2006).

Multi-Stakeholder Leaders. Founders or trained facilitators of the multi-stakeholder program who may hold any title as long as they are trained facilitators. These leaders are often recognized as experts in the programmatic subject matter by multi-stakeholder partners but take on the role of educator and facilitator for productive dialogue.

Principal Investigator. An influential entrepreneurial ecosystem actor, whose actions and behaviors shape and influence" economic and social change, often through activities involving research and complex multi-stakeholder engagement (Cunningham et al., 24016; 2019).

Service-Learning. Service-learning is "an organized educational experience that both meet needs of the community and fulfills learning objectives" (Steinke & Fitch, 2007, p. 24).

Social Entrepreneurship. Change agents with "innovative solutions to society's most pressing social, cultural, and environmental challenges. They are ambitious and persistent – tackling major issues and offering new ideas for systems-level change" (Catalyst2030a, 2020, p. 3). The mission of a social entrepreneur is to create and promote social value (rather or in addition to private value) through innovating, adapting, and continuous learning.

Stakeholders. Individuals with a "personal, professional, civic, or financial interest" concerning the school (Great Schools Partnership, 2014, p. 1).

Starters. A concept based on the premise that "We are all starters. All of us are born with an innate 'right to start,' to make an idea into reality" (Hwang, 2020, p. 5).

Sustainable Development. Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission, 1987). This definition emphasizes social justice and human development for social and intergenerational (Lans et al., 2014) equity, especially for equitable distribution of resources.

Sustainable Entrepreneurs. Individuals who discover, create, and exploit entrepreneurial opportunities that improve social and environmental gains for members in society (Hockerts & Wüstenhagen, 2010; Pacheco et al., 2010; Shepherd & Patzelt, 2011).

Sustainable Entrepreneurial Ecosystem. An interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures (Cohen, 2013, p. 3).

Sustainable Entrepreneurship. Discovering, creating, and exploiting entrepreneurial opportunities that improve social and environmental gains for members in society (Hockerts & Wüstenhagen, 2010; Pacheco et al., 2010; Shepherd & Patzelt, 2011).

Systemic Innovation. A set of interconnected innovations where each is dependent on the other, with innovation both in the parts of the system and in the way they interact" (Davies et al., 2012, p. 4).

Systemic Innovation Lab. A complexity-science informed solution ecosystem designed to imagine that which does not yet exist to make it appear in concrete form (Zivkovic, 2018; Nelson & Stolterman, 2012). The lab shifts between macro, meso, and micro levels of analysis and action.

Systems Change. "Addressing root causes rather than symptoms by altering, shifting, and transforming structures, customs, mindsets, power dynamics, and rules through collaboration across a diverse set of actors with the intent of achieving lasting improvement of societal issues on a local, national, and global level" (Catalyst2030a, 2020, p.3).

Systems Social Entrepreneurs. Practitioners with an entrepreneurial mindset who change by recognizing opportunities or applying new, innovative solutions to unsolved challenges. They are ambitious, persistent, proactive, comfortable with risk, future-oriented and display critical thinking skills, flexibility and adaptability. Their approaches emphasize collaboration and often involve human-centric design. They might run a for-profit business, but they might also opt for other ways to organize their efforts, including associations, advocacy

organizations, foundations and movements. Taking a replicable, scalable approach to addressing societal challenges is core to their work.

Systems Thinking. Systems thinking is "a process of understanding interactions and influences between various components in a system to solve complex problems, by addressing every issue as a component of a larger system, rather than an independent aspect with non-related consequences" (Patel & Mehta, 2017, p. 517).

Wicked Problems of Sustainability. Complex, ill-defined, and interconnected social or cultural problems that can only be tackled by involving multiple stakeholders (Rittel & Webber, 1973). Wicked problems involve the long-term viability of organizations, societies, or human civilization (Batie, 2008; Weber & Khademian, 2008). Examples include poverty, homelessness, civic engagement, climate change, economic development, equality, clean water quality education, and hunger (SDGs).

CHAPTER 2

LITERATURE REVIEW

The purpose of the literature review is to identify, explain, and critique the literature on a specific topic (Cooper, 1984; Marshall & Rossman, 2006). This literature review contains a discussion of the background, empirical, and theoretical research relating to the following research questions:

1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?

2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

By nature, wicked problems have no absolute solutions or definite answers (Rittel & Webber, 1973) and, therefore, no formula for resolving them. While similar studies have explored the topic of addressing wicked problems through multi-stakeholder initiatives, existing studies have primarily focused on the role of four-year universities and non-governmental organizations. To date, no published study has focused on the role of community colleges in addressing wicked problems of sustainably through MSIs.

This section consists of an introduction to four related theoretical concepts: (a) the theory of complexity science and complex adaptive systems, which are highly recommended when dealing with wicked problems (Elia & Margherita, 2018), (b) the theories of systemic innovation, which is a complementary preferred style of social innovation when addressing wicked

problems, (c) stakeholder theory, and (d) the background and empirical literature surrounding the research questions, which will provide foundational knowledge needed for the study.

Theoretical Research

The literature indicates traditional methods of problem-solving are inadequate for addressing wicked problems (Zivkovic, 2017). Rather, Zivkovic (2017) advocated for the more holistic blended approach of systemic innovation and complexity science when addressing wicked problems. Complexity science involves the interactions between small actions that lead to large-scale effects within a given situation due to complex and multi-dimensional interconnectedness (Phelan, 2001). According to Zivkovic, "no single unifying theory of complexity exists" (p. 2). Rather, the concept is comprised of shared ideas across interrelated research, including systems thinking and complex adaptive systems, which is the most basic unit of analysis in complexity science (Uhl-Bien et al., 2008). The literature review is primarily based on two theoretical pillars: the theory of complex adaptive systems and the theory of systemic innovation.

Theory of Complexity Science

The theory of complexity science is well-documented throughout the literature (Cohen & Stewart, 1994; Cowan et al., 1994; Gell-Mann & Tsallis, 2004; Kauffman, 1993, 1995, 2007; Kelly, 1994; Lorenz, 1995; Mitchell, 2009; Peitgen et al., 2004; Prigogine, 1997; Stewart, 1989). Complexity is defined as, "the formation and reformation of patterns and structures whether in companies, research, and development teams, communities, or cities and nations" (Brett, 2019, p. 19). The concept includes several related theories, such as self-organization, collective behavior, networks, adaption and evolution, pattern recognition, systems theory, and non-linear

systems. Figure 2 represents a holistic view of the theory of complexity and related complex

adaptive system (CAS; Uhl-Bien et al., 2008).

Figure 2

Theory of Complexity and Complex Adaptive System.

An adapted framework by Steidle, S. & Brett, A., 2020a

*Aspects included in this dissertation are highlighted
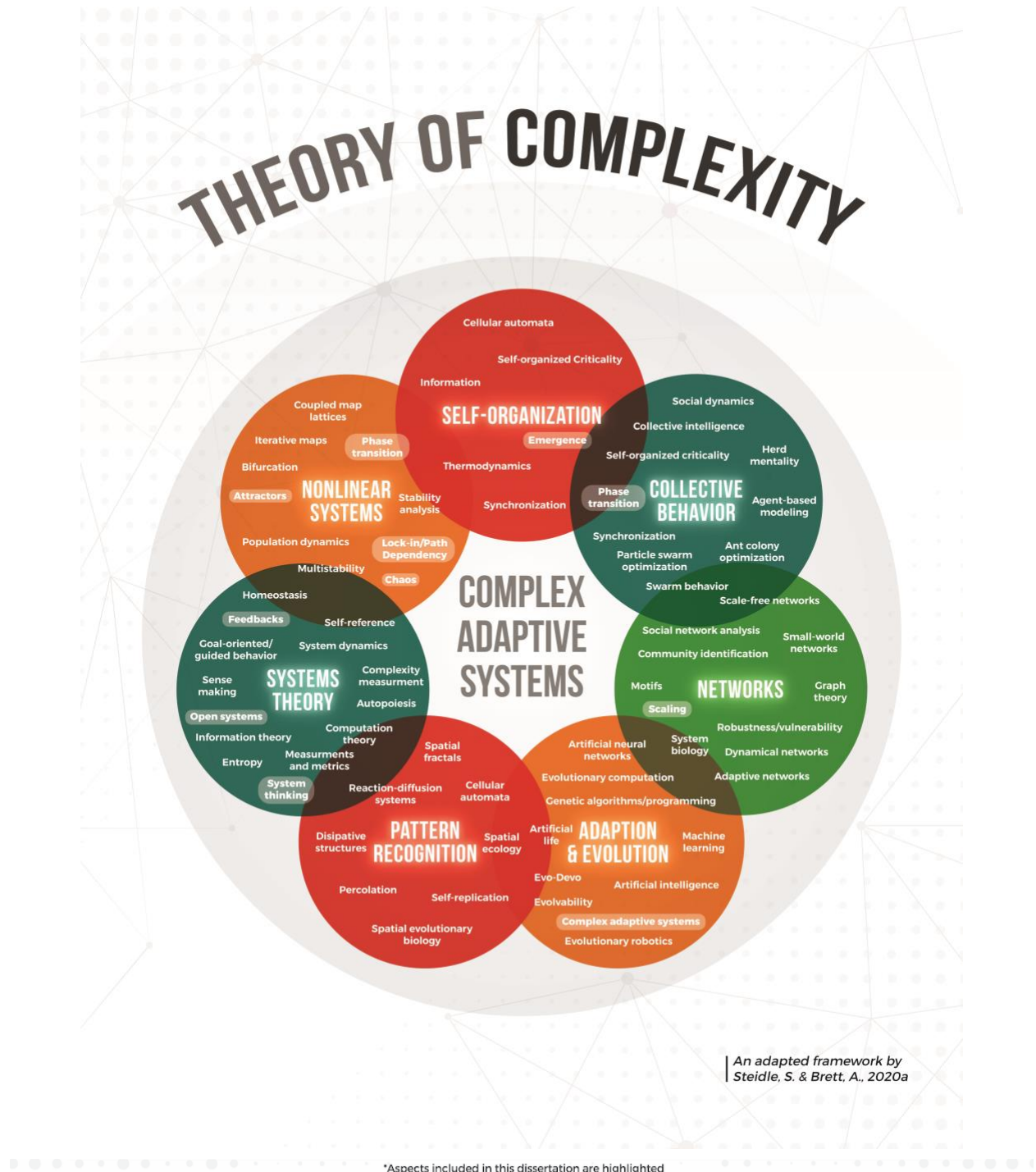
Theory of Complex Adaptive Systems

The most basic unit of analysis in complexity science is the CAS (Uhl-Bien et al., 2008). CASs are individuals, agents, or groups (Lichtenstein & Plowman, 2009; Uhl-Bien et al., 2008) that are open, non-linear systems and often adapt or evolve as needed (Merali, 2006). A *complex adaptive system* is also defined as:

> Collections of many different components (agents) interacting in nonlinear ways in the absence of any external supervisory influence. The behaviors of a complex adaptive system cannot be explained by the behavior of specific agents (reductionism); instead, complex adaptive systems show emergent behavior (Sturmberg et al., 2014, p. 66).

The theory of complex adaptive systems is highly recommended when addressing wicked problems (Elia & Margherita, 2018), as they consider interdependencies and the ever-changing nature of wicked problems (Australian Public Service Commission, 2007). Researchers have outlined several key concepts surrounding complexity science to explain the dynamics of complex adaptive systems when experiencing systemic change (Clancy et al., 2008; Holland, 1995; Kauffman, 1993; Zivkovic, 2017, p. 239).

- Interconnecting agents involve any characteristic, individual, organization, or decision-making entity in a complex adaptive system that adapts over time (Hazy et al., 2007, p. 5).
- Non-linearity is the behavior most common in complex adaptive systems in which small inputs may result in exponential change, as opposed to a typical cause and effect relationship (Zimmerman et al., 1998).
- Feedback loops are pathways of information in a cause-and-effect loop leading to changes in the complex adaptive system (Menendian et al., 2011).

- Self-organization is the recombination of new patterns impacting the performance of complex adaptive systems (Lichtenstein & Plowman, 2009).

- Emergence encompasses characteristics of the whole system that cannot be explained by individuals within the complex adaptive systems (Zivkovic, 2017).

- Phase transitions are the tipping points of change for impacting the wicked problem (Van Wezemael, 2012, p. 100).

- Attractors are sets of beliefs, actions, and results that represent stable patterns and typical behavior (Svyantek & Brown, 2000; Goldstein, 1994).

- Lock-in and path dependency is the tendency to stick with sub-optimal patterns of opportunity, despite better options available (Unruh, 2000).

- Edge of chaos is a requirement for solving complex problems, which consist of heightened uncertainty, interconnectedness, and interdependency (Waldrop, 1992, p. 313).

- Solution ecosystems are now considered a well-understood pathway for addressing wicked problems (Lichtenstein & Plowman, 2009, p. 61).

- Turbulence is chaotic and random behavior (Clancy et al., 2008).

- Adaptation is "the changes made by agents in response to the actions of other participants, environmental conditions or emergent systems. It is generally conceived of as features of the goal-seeking behavior of agents in a complex adaptive system" (Ansell & Torfing, 2016, p. 366; Holland, 1995; Kauffman, 1993).

- Open strategy is described as a dynamic bundle of practices that afford internal and external actors' greater strategic transparency and/or inclusion that balance and the extent

to which they respond to evolving contingencies desired from both within and outside organizational boundaries (Hautz et al., 2017, p. 298).

- Collective impact encourages interconnected initiatives to support cross-sector collaborations for progress in addressing wicked problems. The concept also recognizes complexity, as *emergence* is a factor in complexity science, which is defined as "events that are unpredictable and seem to result from interactions between elements and which no one organization or individual can control" (Kania & Kramer, 2013, p. 3).

According to Lichtenstein and Plowman (2009), disrupting the interconnections of agents is initiated by emergence, ultimately pushing the system to the edge of chaos. Disrupting the system is paramount because a state of disequilibrium allows the production of a new system-level order. A disrupted system provides a sensitive state in which small changes through action and events can quickly spread through the system, overcoming lock-in and transitioning toward new actor regimes (Goldstein, 1994; Zivkovic, 2017).

Although complex systems and complex adaptive systems are terms used interchangeably, the two are different concepts (Hazy et al., 2007). Complex systems should be used as a more general term, while complex adaptive systems refer to semi-autonomous agents that can self-organize and re-combine through adaption into new capabilities (Zivkovic, 2017).

Theory of Systemic Innovation

Davies et al. (2012) asserted that systemic innovation is the preferred style of social innovation when addressing wicked problems, as the approach incorporates concepts surrounding complexity science, including complex adaptive systems. *Systemic innovation* is defined as "a set of interconnected innovations where each is dependent on the other, with innovation both in the parts of the system and in the way they interact" (Davies et al., 2012, p. 4).

Notably, the goal of systemic innovation is to maximize the value of social innovation by improving outcomes, such as higher graduation rates or lower unemployment (Davies et al., 2012). In fact, emerging strategies for complex issues focus on (a) outcomes, rather than inputs and outputs, (b) qualitatively measurable and demonstratable results, (c) cross-sector collaboration and co-ordination across boundaries, (d) co-creation of solutions with users directly affected, I self-organization is de-centralized through increased community decision-making powers, (f) increased adaptive capacity, and (g) adoption of new continuous improvement methods and learning organizations through reflective practice (Schön, 1983). The strategy is complex and challenging as it requires change in behavior, structure, and process and cross-sector involvement across business, government, civil society, and households (Davies et al., 2012).

According to Davies et al. (2012), wicked problems can be better addressed through systems innovation when practitioners understand the concepts surrounding complexity and complex adaptive systems. In addition, enabling conditions are a prerequisite for bringing systemic change (McKelvey & Litchtenstein, 2007), and these conditions should be catalyzed by governmental entities (Bentley & Wilsdon, 2003). Davies argued that in order to be truly transformational, systemic innovation will require several of the following elements: (a) development following a crisis or period of upheaval, (b) new ideas, concepts, and paradigms, (c) new laws and/or regulations, (d) coalitions for change of many actors across more than one sector and scale, (e) changed market metrics or measurement tool, (f) changed power relationships and new types of power structures, (g) new skills or roles across many actors, and (h) new institutions, and widespread changes in behavior, structure, and/or processes. Finally,

experts advocate for human-centered, holistic, cross-silo, and multi-stakeholder approaches when addressing wicked problems, such as the SDGs (Catalyst2030a, 2020)

When addressing wicked problems within complex adaptive systems Zivkovic (2018) advocates for the use of a systemic innovation lab, which is a complexity-science informed solution ecosystem. Systemic innovation labs possess certain key features, including a) focusing on addressing complex problems, b) emphasizing place-based local approaches, c) enabling coherent action by diverse actors, d) involving users as co-creators, e) supporting a networked governance approach, and f) recognizing government as an enabler of change (Zivkovic, 2018, p. 349). Additionally, systemic innovation labs often shift between macro, meso, and micro levels of analysis and action, due to the systemic design nature of the work. In this context, design is defined as, "the ability to imagine that which does not yet exist to make it appear in concrete form as a new, purposeful addition to the real world" (Nelson & Stolterman, 2012, p. 12). Systemic design is a next-generation practice characterized by a set of core principles including: compelling collective action toward a desirable outcome, appreciating complexity, purpose-finding, boundary framing, feedback coordination, system ordering, generative emergence, continuous adaption, self-organizing and requisite variety (Jones, 2014, p. 106). Finally, leaders within systemic innovation labs often adopt the complex systems leadership style of "generative leadership", which emphasizes the need for goal alignment and understanding collective goals prior to advancing action in order to stay aligned (Surie & Hazy, 2006, p. 17).

Stakeholder Theory

Stakeholder theory has been applied to the fields of complex adaptive systems for solution design (Roloff, 2008). In this context, the stakeholders aim to champion solutions with

policymakers, scientists, technology providers, data and information providers, product and service providers, civil society, users, community group, funders, and sponsors (Schiller et al., 2013). Contributors should be comprised of both experts and non-experts in a structured process (Elia & Margherita, 2018).

Stakeholder management became popular in the 1980s (Carroll, 1989; Freeman, 1984; Weiss, 1994). In recent years, numerous articles and books on the topic of 'stakeholder theory' have been published (Freeman, 1999; Mitchell et al., 1997; Schuppisser, 2002; Steurer, 2006). Stakeholder theory recognizes two different types of stakeholder management: organization-focused management and issue-focused stakeholder management. Organization-focused stakeholder management focuses on the welfare of the organization, putting the firm's objectives and security at the center of attention (Habermas, 1999). Issue-focused stakeholder management focuses on solving programs that collectively affect all actors around the table (Habermas, 1999). While organization-focused management relies on reports and press releases to communicate with stakeholders, issue-focused management uses face-to-face interactions in groups, including new participants as appropriate, excluding others, and through personal interactions. Multi-stakeholder networks leverage issue-focused stakeholder management (Hajer & Wagenaar, 2009). According to Roloff (2008), the issues that prompt stakeholders to cooperate with each-other are both urgent and complex, leading to a non-hierarchal fashion of collaboration. Interestingly, Catalyst2030 (2020a) recently published a series of issue roadmaps pursuing systems improvement toward achieving the Sustainable Development Goals (SDGs).

The greatest weakness of organization-focused management strategy is that it tends to overlook stakeholders affected by the organization in lieu of those who can affect it (Jones et al., 2007; Phillips, 2003; Waxenberger & Spence, 2003). Often, the most powerful and vocal receive

the most attention, while vulnerable and marginal stakeholders who are most affected by the decisions made are simply ignored (Roloff, 2008). According to Roloff (2008), the influence and impact of marginal stakeholders is expected to increasingly impact organizational performance in the future due to the uncertain nature of social, economic, and ecological developments. Although many managers believe governments hold the responsibility of solving these issues, governments are commonly unable to address complex international issues (Roloff, 2008).

Literature Research

Multi-Stakeholder Initiatives for Wicked Problems

Carcasson (2013) outlined three coping strategies for addressing wicked problems through MSIs. They include expert (authoritative), adversarial (competitive), and deliberative (collaborative) strategies. Distinguishing between the three strategies is important since each strategy is accompanied by benefits, drawbacks, and varying levels of effectiveness (Roberts, 2000).

Expert (Authoritative) Strategies. Expert (authoritative) strategies involve placing decision-making authority in the hands of a few stakeholders (Roberts, 2000). Using these strategies, an emphasis is placed on organizational hierarchy, coercive power, and access to information with top authorities defining the problem and proposing a solution. Although such strategies offer a simplistic, rather than complex approach, they can lead to decreased legitimacy and less acceptance. In addition, Roberts (2000) warned, "authorities and experts can be wrong – wrong about the problem and wrong about the solution" (p. 4). Innes and Booher (2016) asserted that traditional planning expert-driven approaches based on scientific considerations are not well-suited for addressing wicked problems.

Adversarial (Competitive) Strategies. Adversarial (competitive) strategies involve some individuals winning while others losing (Roberts, 2000). According to Roberts (2000), central to competitive strategies is the search for power and therefore, may lead to the use of authoritative strategies. Although the zero-sum strategy is efficient, potential partners are often alienated (Theis, 2016). This type of strategy can lead to an over and unequal consumption of resources, with some feeling left out (Roberts, 2000). If pushed to the extreme, these strategies can lead to violence, warfare, stalemates, and policy gridlock (Kagan, 1991; Pfeffer, 1992; Shilts, 1987). While the 'zero-sum game' aims to distribute pieces of the pie based on winning or losing, deliberative or collaborative strategies strive to enlarge the pie (Roberts, 2000). For this reason, the literature pertaining to MSIs focuses on deliberative and collaborative strategies.

Deliberative and Collaborative Strategies. Deliberative (or collaborative) strategies involve adopting a win-win mentality in which stakeholders participate in the dialogue with the goal of reaching a consensus (Roberts, 2000). Roberts (2000) defined collaboration as a strategy acknowledging that "by joining forces parties can accomplish more as a collective than they can achieve by acting as independent agents" (p. 6). Additionally, adopting a win-win mindset is most effective when problem-solving is the core of collaboration. Where collaborative (or deliberative) solutions are implemented, there is often widespread acceptance and legitimacy (Carcasson, 2013). Admittedly, more resources are required on the front end, and fewer resources are needed during the implementation process (Roberts, 2000).

Peer and Stoeglehner (2013) employed a multiple-case study approach to explore opportunities for universities to contribute to local and regional sustainability efforts. In their study, the researcher advocated for a collaborative rational planning process aligned with both Habermas's concept of communicative rationality and Rittel and Webber's second-generation

systems approach. With collaborative dialogue, participants emphasized deliberation and were more willing to back off rigid positions in lieu of alternative pathways to further their interests while enlarging the pie for the benefit of everyone involved and learning new ways of solving problems (Innes & Booher, 2016). According to Innes and Booher (2016), the collaborative process is rational when the initiative meets seven conditions:

(a) participants are diverse in terms of their views on the issue at hand;

(b) the focus is on problems that involve shared interests of the group;

(c) interests are articulated by the participants early, but they are encouraged to hold back advocacy;

(d) face-to-face conversations are held for the purpose of authentic dialogue;

(e) the dialogue involves both expert and community knowledge;

(f) out of the box thinking is encouraged and often helps to reframe the problem; and

(g) the group aims to satisfy the significant concerns of each participant.

Admittedly, both collaborative and communicative methods of planning are constrained by the fact that consensus is typically unlikely.

Carasson (2013) viewed deliberative engagement as the ideal mechanism for decision-making among individuals with shared goals. When practicing deliberative democracy,

citizens come together and consider the relevant facts and values from multiple points of view, listen and react to one another. The goal is to think critically about the various options and work through the underlying tensions and tough choices inherent in wicked problems. (p. 41)

Community colleges are often viewed as "democracy colleges" (Theis & Forhan, 2017); therefore, the strategy of deliberative dialogue is a natural fit for the institutional culture.

The role of universities differs between rational and collaborative or communicative planning. According to Peer and Stoeglehner (2013), rational planning views the university's role as a provider of education and expert opinions, while the collaborative or communicative model encourages university employees to bring factual knowledge, values, and paradigms to influence toward sustainability and essentially act as a "change agent".

Creative Problem-Solving- A Deliberative Technique. According to Mumford et al. (1991, 2003), traditional problem-solving is insufficient for solving ill-defined, wicked problems because wicked problems require creative thinking. One deliberative technique is creative problem-solving (CPS), which is one of the most widely taught methods for addressing hard-to-solve challenges (Puccio et al., 2012; Treffinger & Isaksen, 2005). CPS is defined as a deliberate process designed to stimulate creative thinking and to address ill-defined problems using creative cognition (Puccio et al., 2012). Creative cognition enables individuals to connect ideas and to collaborate with others to creatively address problems in uncertain situations (Mumford et al., 2003).

Creative problem-solving leverages both divergent and convergent thinking (Puccio et al., 2012, p. 74). Divergence is a process of exploration, seeking new ideas, and connecting seemingly unrelated concepts to spontaneously generate novel ideas (Torrance, 1972, 1978, 1988). Convergence is a process that uses analytical skills to evaluate ideas in a more orderly way (Sternberg, 2006, 2010; Sternberg & Lubart, 1991, 1992).

The Role of Higher Education in Addressing Wicked Problems

Researchers have called for academics to reflect on their responsibility in society (Ferrer-Balas et al., 2010), and the university's role in addressing wicked problems (Manring, 2014), both of which often fit the objectives of the institution (Trencher et al., 2014). While some

researchers have asserted that higher education institutions serve a public purpose, and therefore, should contribute to solving societal problems (Shapiro, 2005), the issue has been debated for years.

Trencher et al. (2014) offered important insights through a comprehensive global study of cross-sector university collaborations for sustainability. The macro-level empirical analysis was based on 27 partnerships across Asia, Europe, the Middle East, and North America. In the study, researchers documented the characteristics, processes, outcomes, challenges, and roles held by the universities. Researchers identified six possible roles, including (a) inventor/innovator, which focuses on creation and demonstration of ideas, pilot projects, and supporting technology, green, and/or social entrepreneurs; (b) revivalist/retrofitter, which is a collaborator with external developers to improve existing buildings and spaced with consideration for the local socio-economic fabric; (c) builder/developer, which is based on new development, renovation, and/or construction through either endowment, public, and private funds for key industry-cluster initiatives; (d) directors/linkers bring to life the grand vision established by university actors through leveraging partner resources, mobilizing other actors, and establishing networks for increased intelligence and guidance; (e) scientific advisors/communicators take a passive role aiming to influence local governance, communicate results of a pilot through creating a blueprint, master plan or report; and/or (f) facilitator/empowerer also takes a passive role with the goal of unleashing, rather than imposing change by empowering community stakeholders to self-realize transformation through self-diagnosing problems.

Zilahy and Huisingh (2009) employed a qualitative questionnaire and review of the literature to identify the roles in academic, regional sustainability initiatives. Arbo and Bennworth (2007) proposed four ways universities can contribute, including (a) installing energy

efficiency throughout the institution's management practices; (b) providing technical expertise surrounding multi-disciplinary issues, such as climate change; (c) instilling employability skills required for a well-functioning democracy, such as critical thinking skills; and (d) establish a leadership role with local authorities and other stakeholders throughout society when addressing sustainability issues.

Devine-Wright et al. (2001) described five roles higher education institutions can perform in multi-stakeholder networks, which include (a) acting as prime movers to create strategy and tactics, provide resources, guide action, and allocate resources; (b) act as the gatekeepers for network access; (c) act as the spokesmen for the network; (d) participate as a bridge institution for the various partners; and I independently monitor and measure performance and mapping. Stephens et al. (2008) advocated for universities to act as changemakers across various cultures and contexts by (a) offering a model for sustainable practices; (b) teaching students concepts surrounding complexity science for sustainability, such as integration, synthesis, and systems thinking; (c) participate in real-world impact through research and other activities; and (d) encourage transdisciplinary engagement between institutions and individuals, both internal and external to higher education and other societal institutions. Calder and Clugston (2003) analyzed data surrounding the sustainability performance of universities in the United States. The eight dimensions used in the study were based on curricula, research, faculty and staff hiring, development and rewards, operations, student opportunities, outreach and service, institutional mission, structure, and planning. The findings showed that efforts to connect universities and colleges to the surrounding communities "may represent the most significant single development in the advancement of HESD (higher education sustainable development) since it indicates a growing critical mass of institutions within certain regions committed to changing state policy in

support of sustainability" (p. 638). The contribution of education and training activities far outweighed the frequency of outreach activities.

Dentoni and Bitzer (2015) identified five mission-centric roles that academics play when participating in MSIs. Dentoni and Bitzer suggested that "the roles of academics in MSIs have the potential to make a significant contribution to advancing organizational goals of universities, such as high-quality research and enhancing the universities' roles in sustainability" (p. 76). Table 1 outlines the link between academic roles in and around MSIs in relation to the organizational goals of the university. Trencher et al. (2014) agreed that higher education institutions should play the important role of "co-creation for sustainability". Although colleges and universities are different, they are also both academic institutions. Therefore, the experiences of universities may offer valuable insights to community colleges.

Table 1

Link between Academic Roles in MSIs and Organizational Goals of Universities

Academic roles in and around MSIs	Role Activities	Organizational goals of universities met through academic activities in/around MSIs
I. Advancing and Applying one Knowledge Domain in MSIs	Testing deductive frameworks and developing measurements based on MSI decisions and requests	1. Publish research in disciplinary journals 2. Acquire grants for research activities (with funding by or in partnership with MSIs)
II. Building Shared Vision in MSIs	Developing conceptual frameworks based on relevant theories and inductive frameworks based on MSIs data to make sense of the wicked problems which MSIs seek to address.	3. Publish the outcome of reflexive learning and trans-disciplinary research jointly with practitioners.
	Stimulating critical discussion and reflection among MSI members. Disseminating research and discussion results.	4. Develop case studies for creative practice and solution-oriented teaching and promote leadership development 5. Serve as bridging institution between societal stakeholders

Academic roles in and around MSIs	Role Activities	Organizational goals of universities met through academic activities in/around MSIs
III. Building Shared Strategies on MSIs	Conducting analysis and developing inductive frameworks based on MSI data.	6. Publish research in disciplinary journals
	Helping to design targeted implementation activities.	7. Promote application-oriented learning and collective action for the resolution of wicked problems.
IV. Developing New Transdisciplinary Knowledge on MSIs	Developing inductive frameworks based on MSI data.	8. Improve credibility, legitimacy, and reputation of the university.
V. Building Bridges between MSIs and Students	Organizing or participating in case study competitions, translational scholars' programs, learning journey/ business immersion programs, internships.	9. Develop and publish new research approaches to understand, analyze, and theorize on MSIs and wicked problems.
	Disseminating research and learning opportunities stemming from MSIs	10. Publish research in interdisciplinary journals.
		11. Develop innovative curricula to educate students for sustainable development and create awareness for wicked problems
		12. Promote community outreach in line with the version of MSIs.

Peer and Stoeglehner (2013) contended that the university's participation in sustainable development is best described through three theoretical cornerstones of university-society-relationships, including planning theory, learning theory, and implementation theory. Planning theory establishes a conceptual framework by considering (a) "how" the university plays a role in decision making, (b) "who" should make the decisions, (c) "what" is the self-perception of the university's involvement (Friedmann, 2003)? Learning theory offers operational processes for

decision making related to educational aspects. Finally, implementation theory provides insights into key actors.

Finally, departments within universities often address wicked problems of sustainability when mandated by accreditation bodies, such as the Association to Advance Collegiate Schools of Business (AACSB). AACSB is the global gold standard in business school accreditation with more than 877 business schools accredited and 276 schools in progress (personal communication, February 22, 2021). In 2020, the organization's new accreditation standards were approved and notably, now require business schools to be a force for good in society. The new standards were a result of hundreds of meetings with over 10,000 individuals globally providing feedback because the members vote for the new standard and therefore, buy-in is critical.

One of the new standards, Standard 9, requires business schools to demonstrate a commitment to making the world better as evidenced through the business school's strategic plan, curriculum, research and action-orientation. According to AACSB's Chief Accreditation Officer, Dr. Stephanie Bryant (personal communication, February 22, 2021), "the power is not in one school, although one school can do good work. The power is all of our schools together". She believes the future of education is through interdisciplinary partnerships. For example, she suggested that business schools can partner with bioengineering to come up with solutions for COVID, including solving logistics problems. Dr. Bryant explained, "business schools believed for a long time they could not contribute to societal issues, such as global hunger, clean water, and climate change. Not only can we play in that area, we are going to play in that area". AACSB is planning an upcoming societal impact conference that will co-convene business practitioners and educators alike to collaborate on solving wicked problems. The goal of the

conference is to answer one central question: what can we do to change the world through the collective power of our schools? This is an example of how accreditation can systemically influence departments within universities (or community colleges) to address wicked problems while incorporating the SDG framework.

Role of Planning and Convening. Innes and Booher (2016) made the following suggestions about the planner's role: (a) planners are ill-advised to be the actual facilitators because they are rarely seen as neutral; (b) planners should convene the partners, support the process of collaboration, (c) ensure diverse participant inclusion and communicate the necessary information; (d) they are also tasked with staffing, record keeping, general communications, acquiring information and maintaining processes; (e) although the planners are familiar with the issues, they should not offer their opinions or solutions until the process is complete; and (f) facilitation is considered a specialized skill and profession. This role makes sense, as colleges and universities are already described as natural conveners and facilitators of collaboration (Morrison et al., 2019).

Role of Learning. Learning theory provides insight into the institution's role in operations and knowledge generation (Peer & Stoeglehner, 2013), for example, who generates the needed information and who decides how it should be used? And What methods of learning should be identified? Notably, learning is considered a primary skill for achieving sustainability (Lozano et al., 2013) through the ability to change mental models and adjust to changes in circumstances (Senge, 2006). Senge (2006) highlighted the value of a learning organization, which promotes learning new skills and institutional creativity to increase organizational capacity.

Another typology relevant to planning theory is the models of adaptive, anticipatory, and action learning. Adaptive learning aims to identify direct solutions for immediate problems (Shrivastava, 1983), while anticipatory learning involves mitigating future problems by preparing for them, and finally, action learning, which is a continuous loop of action-outcome relationships with iterative changes proposed based on experiences (Lozano et al., 2013). Ultimately, the purpose of learning is to increase knowledge through teaching, experience, and problem-solving, which is aligned with the goals of this dissertation (Lozano et al., 2013).

Role of Implementation. Implementation theory considers how decisions are converted to action, answering questions such as: How do mental models, knowledge generation, learning processes, and outcomes influence the partner's behavior and involvement? (Lozano et al., 2013). Stoeglehner et al. (2009) pointed out that the actors best suited for creating and implementing new policies are 'street level bureaucrats,' which are those also applying the new policies. Therefore, the concept of ownership plays an important role, with special considerations placed on (a) the ownership of values and concepts, (b) the ownership of technologies and processes, and (c) the ownership of outcomes (Stoeglehner et al., 2009). Peer and Stoeglehner (2013) explored the opportunities for universities to act as change agents. Findings of the study indicated that in order for academic institutions to achieve this recognition, joint co-creation, and co-ownership of projects should be established and understood by all parties.

Role of Catalyzing, Leading, and Facilitating. Boone (1992) asserted that community colleges are well-suited to act as collaborative catalysts, leaders, and facilitators because they are (a) deeply embedded in each community, (b) multi-disciplinary by nature, (c) positively perceived by the public regarding capabilities, (d) viewed as neutral organizations with an open-door reputation, and I knowledgeable about social, economic, and political forces shaping the

community culture. Boone (1992) advocated for community colleges to act as a leader and facilitator of collaborations to address complex challenges, such as unemployment, underemployment, literacy, pollution, education, health care, cultural conflicts, and substance abuse. *Community-based programming* (CBP) is defined as,

> a cooperative process that involves a series of procedural tasks in which the community college serves as the leader and catalyst in effecting collaboration among people, their leaders, and other community-based organizations and agencies within its service area in identifying and seeking a resolution to major issues that are of critical concern to the community and its people. (Boone, 1992, p. 10)

CBP involves 15 clearly defined procedural tasks (Boone, 1992). The programs explored in this dissertation provide unified plans for action toward addressing wicked problems most applicable in tasks #10, #11, and #12 of the fifteen steps. In the role of leader and catalyst, community colleges view the institution as a network hub engaged in leadership, development, and cooperation for the community aiming to address an identified educational, social, economic, or environmental issue impacting all partners. According to Boone (1992), the outcomes generated from CBPs are (a) resolutions of the issues identified, (b) unified synergy between partners, (c) high community expectations are accepted, and (d) new leaders are emerged and developed.

   Role of Communication. The multi-stakeholder approach to addressing wicked problems requires scholars and other actors in society to leverage complex models for communication (Adomßent, 2013; Burritt & Tingey-Holyoak, 2012). Special care should be placed on 'framing' the sustainability issue so that the audience is able to better understand why they should care. According to cognitive science, humans unconsciously and unavoidably think in terms of frames (Lakoff, 2010). For example, doctors, nurses, operating room, and scalpels all exist within the

frame of a hospital system. In fact, one spoken word often activates the entire system, not just one concept, even when negated. When Nixon said, "I am not a crook," the word "crook" was activated, and people thought of him as a crook (Lakoff, 2010, p. 72).

According to Lakoff (2010), "The old view claimed that reason is conscious, unemotional, logical, abstract, universal and imagined concepts. That is false. The real reason is (98%) unconscious (98%); requires emotion; uses the logic of frames metaphors, and narratives" (p. 72). Therefore, any new message must be introduced through a communication system that enables sufficient spread, repetition, and trust.

The language used in environmental policy provides a clear example of why framing is so crucial. In 2003, Frank Luntz advised the Bush Administration on language to use in a memo titled, *Winning the Global Warming Debate*. Luntz (2003) advised the administration to use the words "climate change" rather than "global warming" as the word "climate" has a nicer connotation, while the word "change" removes the blame. "It's time for us to start talking about 'climate change' instead of 'global warming' because 'climate change' is less frightening than 'global warming'" (Luntz, 2003, p. 142).

In addition, Lakoff (2006) explained that conservatives are able to communicate with fewer words, while liberal messages require paragraphs. This is due to the fact that conservatives have spent years building up simple frames, such as "greed is good" and "let the market decide" (p. 75). Liberals tend to view environmental issues through systemic causation. In other words, the environment is "intimately tied to issues such as economics, energy, food, health, trade and security" but leaders, policymakers, and journalists lack the frames to communicate the systemic nature in order to inspire the hypocognition needed to address the issue (Lakoff, 2006, p. 76). *Hypocognition* is defined as a lack of ideas required to address the issue at hand.

Role of Interlocutor. Fowler and Biekart (2017) utilized a comparative multiple-case study approach involving 17 cases of MSIs to determine: (a) what country conditions influence the effectiveness of MSIs, (b) what the attributes and skills of interlocutors are in successful MSIs, and (c) how stakeholders think MSI performance can be improved. The researchers argued implementing the SDGs will require complex multi-stakeholder relationships that call for a unique type of host called an interlocutor (Fowler & Biekart, 2017). In the study, empirical research was used to better understand

> interlocutors as an umbrella category for secretariats, focal points, platforms, hosts, and other labels for a critical player in making MSIs work well. By its nature, interlocution is an active engagement in conversations between parties that, within the context of MSIs, is a role shouldering an intrinsic co-responsibility for collaborative processes involving, inter alia, leadership by exerting influence without authority, multi-actor management, conflict management and responsiveness to changing circumstance. (pp. 81-82)

Fowler and Biekart (2017) identified three characteristics of successful interlocutors based on function, role, and attributes. The (i) function of the interlocutor is specific to the process ideal for meeting goals of the MSI. The (ii) role is described as conveners, mediator, systemizer, and communicator. Additional functions cited in the literature include facilitation, communication, and brokering (Fowler, 2014; Turner et al., 2012), moderating, catalyzing (Brouwer et al., 2015), assembling, guiding, and launching MSIs with the goal of optimizing the collective action of various stakeholders (Fowler & Biekart, 2017). Isenman et al. (2011) recommended that interlocutors play the role of enablers of peer-to-peer-support and learning rather than experts.

The (iii) attributes of successful interlocutors include (a) leadership and conflict management for informal authority, (b) trustworthiness through high levels of integrity and technical competence, (c) system sensitivity through an understanding that all intractable problems are local, (d) governance awareness surrounding power and authority in decision making, I long-haul commitment with an intrinsic and inspired motivation to stick it out, (f) polyglot communication through an understanding of the various logics and vocabularies and (g) sovereignty through a clear understanding of decision rights without compromising independence in terms of thought and action for partisan outcomes. Study findings across all 17 cases were compiled in Table 2 (Fowler & Biekart, 2016a).

Table 2

Comparative Expectations of Interlocutor Work.

(ranked high to low priority)	GDI study	MSI guide
Global political leadership/energy	Coordinating across sectors	Gaining leadership/political support
Catalyze financial resources	Strengthening industry practices	Gathering and motivating stakeholders
Develop M&E tracking tools	Reaching scale attracting business	Creating and motivating stakeholders
Empower/Facilitate countries	Build common transparent framework	Creating a sense of urgency
Develop advocacy and communications	Sharing knowledge	Delineating roles
Undertake research	Member services	Aligning goals and experiences
Provide experience/training	Communities of practice	Trust building and holding
	Collective advocacy/voice	Encouraging interaction
	Campaign management	Capacity building
	Fundraising and management	Logistical co-ordination
	Aggregating/disbursing data	Communication and media support
		Conflict mediation

Note. Adapted from "Multi-Stakeholder Initiatives for Sustainable Development Goals: The Importance of Interlocutors". By A. Fowler and K. Biekart, 2017, *Public Administration and Development, 37*(2), 81–93. https://doi.org/10.1002/pad.1795

Biekart and Fowler (2016b, p. 42) also provided a summary of the interlocution attributes across the various MSI stages, highlighting the attributes emphasized during each phase (Table 3).

Table 3

Interlocution Process–Attribute Significance Scores for all Cases

Attributes	Interlocution stages		
	Assembly	**Guidance**	**Embedding**
Leadership and conflict management	43 (22%)	38 (16%)	36 (15%)
Trustworthiness and trust building	38 (19%)	38 (16%)	42 (17%)
System sensitivity	28 (14%)	27 (11%)	34 (14%)
Governance awareness	15 (8%)	32 (14%)	30 (12%)
Long-haul commitment	24 (12%)	31 (13%)	33 (12%)
Polyglot communications	26 (13%)	39 (17%)	43 (17%)
Sovereignty	22 (11%)	31 (13%)	31 (12%)
Total	196 (99%)	236 (100%)	249 (100%)

Note. Adapted from "Multi-Stakeholder Initiatives for Sustainable Development Goals: The Importance of Interlocutors". By A. Fowler and K. Biekart, 2017, *Public Administration and Development, 37*(2), 81–93. https://doi.org/10.1002/pad.1795

Community College Mission Alignment.

Community colleges across the United States serve nearly 6.5 million students annually, approximately 46% of America's undergraduates (Labov, 2012). These institutions educate a significantly more diverse student population than 4-year universities within the same geographic location. Among all enrolled undergraduates in the United States, 47% of African Americans, 47% of Asians, 55% of Hispanics, and 57% of Native Americans are enrolled in community colleges (Labov, 2012). Additionally, community colleges serve students who have been "the most excluded from participatory democracy and political decision making" (AACU, 2020), "including students who are first-generation, from underserved racial and ethnic groups, and low-income communities" (Robinson, 2020, para 2). Community college students often experience a "civic empowerment gap, which prevents engagement in civic learning and participatory democracy" (Levinson, 2010).

According to Boggs (2010), community colleges typically serve multiple missions. While some colleges fulfill the more traditional role of educating recent high school graduates,

other colleges emphasize the relationships with businesses, government, and community needs, such as retraining displaced workers and educating to fill workforce gaps (Labov, 2012). Additionally, colleges educate K-12 teachers, STEM students, and tradesmen. A majority of community colleges fulfill a blend of each mission component (Labov, 2012).

Vaughan (1997) acknowledged that the tensions leaders often experience with community college mission statements are caused by the "seemingly endless series of social, political, economic, technological, and cultural events" (pp. 41–42). Ayers (2015) stressed the importance of considering institutional priorities within the context of the global political economy considering power, asymmetries, ideologies, and injustice factors. These global and interconnected issues are central to addressing wicked problems, which will require MSIs.

Ayers (2015) reviewed 1,009 community college mission statements from 2012-2013 to 427 mission statements from 2004 using discourse analysis. According to Ayers (2015), community college leaders "use the mission statement to establish a collective sense of purpose and to guide planning" (p. 9). Mission statements help leaders make sense of the community college's role in complex issues, such as globalization, inequality, technological revolution, and decreased state funding (Ayers, 2015). The statement also serves as a public relations document, management strategy, and tool for sense-making. According to Ayers (2015, 2017), community colleges' mission statements emphasize (a) sustainability, (b) economic and workforce development, (c) student success, (d) local community, and (e) access.

Alignment with Educating for Sustainability. Ayers (2015) emphasized the presence of sustainability, which has "emerged as a significantly more prominent term in the 2012-2013 mission statements" (p. 204). The term 'sustainable' refers to broad efforts toward financial and environmental sustainability while also acknowledging the important role of practice and

curriculum (McGhee & Grant, 2016). Ayers (2015) explained that the concept of "sustainable practices" may "become a defining characteristic of legitimate institutions" (p. 205). The terms "society," "change," "technological", "diverse," "democratic," "opportunity," and "global" were found to be less prominent when comparing mission statements of 2012-2013 versus 2004 (Ayers, 2015).

While skeptics warn of mission-drift, it is important to note the community college mission explicitly includes issues of sustainability (AACC, 2011). According to the AACC (2011), "sustainability is rooted in our mission and community colleges connect with tens of millions of people who will be the sustainability leaders of tomorrow" (p. 1). These institutions face increasing pressure to both adopt sustainable strategies and lead change for organizations in the community (AACC, 2011; White & Cohen, 2014). Institutional missions are influenced by shifting forces of political, economic, and social issues and, therefore, adapt to the needs of society (Ayers, 2015). These documents are designed to reflect the college's aspirations and strategies. This section evaluates how community college mission statements align with community colleges addressing wicked problems.

The American College and University Presidents' Climate Commitment (Sustainable Development Goals, 2020) is a high-visibility agreement signed by a network of 700 colleges and university presidents, representing 6 million students. By signing the commitment, these leaders commit to addressing global climate challenges through comprehensive planning for sustainability. The over-arching organization's mission is to "accelerate progress towards climate neutrality and sustainability by empowering the higher education sector to educate students, create solutions and provide leadership-by-example for the rest of society" (Sustainable Development Goals, 2020, p. 1).

Addressing the wicked challenges described will require colleges to be ambidextrous, meaning they must be able to reflect backward, while also looking forward (O'Reilly & Tushman, 2004). Research indicates that ambidexterity strengthens the ability to serve a dual mission of educating students, while also collaborating with employers to advance regional economic development (Salomon-Fernandez, 2019).

Alignment with Economic and Workforce Development. According to Labov (2012), community colleges aim to fulfill multiple missions. In addition to educating students, community colleges are also known for responding to community needs quickly, which is made possible through strong existing relationships with local community organizations, businesses, and governments. The College Board's National Commission on Community Colleges (2008, p. 5) described community colleges as "the nation's overlooked asset" thanks to their ability to retrain displaced workers and serve the community during turbulent times. For this reason, community colleges are critical allies for economic and workforce development.

In fact, economic and workforce development is considered an "institutional feature" of community colleges (Mars, 2013, p. 218), which strengthens their political influence. A longitudinal study across 44 states, involving 2000 rural counties reported job growth rates were significantly higher in areas with community colleges versus areas without (Crookston & Hooks, 2012). Researchers explain, however, "a mission of supporting economic development is different from supporting economically disadvantaged individuals who need benefits, such as steady employment, a diversified economy, a living wage, and employer benefits" (Williams & Nourie-Manuele, 2018, p. 17). While this may be true, the ability for economically disadvantaged community college students to be successful often hinges on overcoming non-academic barriers.

Alignment with Student Success. Traditionally, student success metrics were based on the bottom-line numbers of retention and completion (Goldrick-Rab, 2010). According to Hearn (2006), traditional student success models "neglect key relationships between societal structure and stratification process, state and federal politics, policy implementation and student outcomes" (p. 441). Goldrick-Rab (2010) agreed that student success is "affected not only by policies that are explicitly intended to influence educational outcomes in particular but also by social policies" (p. 446). More recently, researchers have acknowledged the non-academic barriers students face that impact the student's academic success (Waters-Bailey et al., 2019; Goldrick-Rab, 2010). Walters-Bailey et al. (2019) described non-academic barriers as housing insecurity, food insecurity, lack of transportation, dependable childcare, and robust mental health services.

Williams and Nourie-Manuele (2018) analyzed the missions and visions of 200 community and technical colleges across nine states using the Integrated Postsecondary Educational Data System (IPEDS). The goal of the analysis was to determine whether mission statements reveal topics such as poverty, homelessness, and hunger. Although none of the mission statements included the words "poor," "poverty," or "impoverished," there were mentions of "economically disadvantaged," "socio-economic mobility," "barriers," and "obstacles". Goldrick-Rab et al. (2017) have called for community colleges to include poverty more explicitly in mission statements because of the high rates of community college students facing hunger and homelessness.

A 2017 Joint Legislative Audit and Review Commission (JLARC) report documented the operational performance of the Virginia Community College System (JLARC, 2017). In the report, certain student segments were identified as having a higher likelihood of non-completion,

including first-generation and low-income students, and racial or ethnic minorities. However, the report's authors did not offer any actionable strategies for remedying the poor student outcomes but did recommend that the community college system develop a strategic plan to identify student challenges and recommend actions (recommendation 6).

Alignment with Local Community. Supporting the local community is widely viewed as core to the community college mission (Ayers, 2015; 2017). In fact, colleges attempting to move toward a focus on globalization have met substantial resistance (Goldrick-Rab, 2010). Critics believe community colleges serve the public interest best by tackling problems that relate to their local area (Hanson, 2008). Researchers also emphasize that global sustainability impact requires local action (ExpertInnengruppe LA21, 2010). By supporting efforts to localize the Sustainable Development Goals, broader global goals are also supported. In addition, addressing wicked problems, such as poverty and unemployment, also requires coordinated action and partnership between academic institutions and the local community (Williams & Nourie-Manuele, 2018).

Alignment with Access. The open access mission of community colleges is "intended to democratize opportunities" for all students (Goldrick-Rab, 2010, p. 437). In fact, the Brookings Institute described post-secondary education as, "the gateway to the American Dream" (Reeves & Sawhill, 2021, p. 15). However, the promise is not on track to be fulfilled due to a trend of less upward mobility in America. According to Reeves and Sawhill (2021), 90% of Americans born in 1940 are now richer than their parents, compared to 50% born in 1980. 66% of the decline in mobility is a result of increased inequality (Reeves & Sawhill, 2021).

Unfortunately, socio-economic status remains correlated with completion (Goldrick-Rab, 2010). While the traditional word "access" in a community college setting means access to higher education, researchers argue that access also involves accessibility to financial aid, a

source of income, basic needs, academic preparation, information, technology, childcare, food, transportation, and career pathways (Goldrick-Rab, 2010; Salomon-Fernandez, 2019). Simply promoting "access to education" without acknowledging systemic barriers that exist ignores the inequities that exist in America. The open access mission will cease to exist without an acknowledgement of the barriers and an attempt to address underlying root causes (Goldrick-Rab, 2010). According to Goldrick-Rab et al. (2017), "the living expenses associated with productive enrollment in higher education constitute substantial barriers for many community college students" (p. 14). Only by tackling these barriers, which are also considered wicked problems, will community college students truly have access to higher education.

Rural community colleges were considered as an integral part of their communities (Salomon-Fernandez, 2019). However, the ability for community colleges to meet local needs heavily depends on support from policymakers (Melguizo & Whitham, 2018). In addition to funding support, policymakers need to understand the critical role that reducing and eliminating barriers through policy plays in achieving their desired outcomes (Melguizo & Whitham, 2018). For example, 50% of residents in rural communities, compared to 7% of urban residents, lack broadband internet access (Anderson & Horrigan, 2017). If the policymaker's goal is access to education, decreasing the barriers to broadband internet through policy change is critical.

Gumport (2003) acknowledged academic institutions are often torn between two different logical expectations, both internally and externally. The first focuses on an industrial logic perspective centered on financial and strategic business decisions, while the second approach is based on social, institutional logic, which involves promoting social mobility and critical thinking. These two perspectives offer different foundations for legitimacy, opportunities, and

challenges. Gumport (2003) asserted, "there is uncertainty over which organizational priorities and practices to pursue, given multiple external pressures" (p. 41).

     Alignment with Rural Community Colleges. Of the 1,666 U.S. community colleges, 922 (55%) are classified as rural two-year colleges (Hardy & Katsinas, 2007). Within and beyond these rural communities, an implicit social contract exists between community colleges and America to ensure citizens are knowledgeable and adequately prepared to fill workforce demands (Heelan & Mellow, 2017). The social contract has become increasingly tied to social justice as the middle class across America declines (Newport, 2016). Community college pathways often serve as a ladder of equity for low-income learners and displaced workers (Heelan & Mellow, 2017). However, rural community colleges have been acutely impacted by increasingly tight budgets, primarily due to decreased state investment, decreased enrollment, and a lack of internet and computers (Rush-Marlow, 2021, p. 1). According to a 2021 report by the Association of Community College Trustees (ACCT), the COVID-19 pandemic has "deepened the prosperity gap between rural and non-rural communities," leaving "rural community colleges struggling to dig their students out of an ever-deepening ditch" (Rush-Marlow, 2021, p. 1). The post-pandemic reality in rural communities is a social justice issue according to several researchers (Bradley, Werth, & Hastings et al., 2012; Vergés, 2010,).

     Accurately defining the issues surrounding social justice is increasingly dependent on contextual considerations (Vergés, 2010). In rural areas, the barriers to social justice revolve around scarce resources, high rates of poverty, lack of mental health resources (Campbell, Richie, & Hargrove, 2003; Wagenfield, 2003), higher rates of suicide (Roberts, Battaglia, & Epstein, 1999), alcohol abuse, chronic illness (Wagenfield, 2003) and the stigmatization surrounding mental health issues (Larson & Corrigan, 2010; Stamm et al., 2003). In addition,

maintaining confidentiality is more challenging in rural communities due to the informal communication patterns common in small rural areas (Roberts et al., 1999). Rural residents experiencing the barriers described are desperately in need of social justice advocacy, as well (Bradley, Werth, & Hastings, 2012).

Murphy (2006) documented inequity in rural communities by analyzing grants provided by the top 1000 foundations in the United States. Despite the fact that "rural America accounts for 17 percent of the nation's population and 28 percent of those who live in poverty, grants to rural America accounted for only 6.8 percent of overall annual giving by foundations (Murphy, 2006). Delgado (2005) argues that poverty is impacted by not only race but also place. Transforming the system of structural inequity will require contextual policy change designed for rural communities.

The wicked problem of opioid addiction and fatalities is concerning in rural communities. According to the Center for Disease Control and Prevention (CDC), the opioid epidemic is especially hard hit in the rural communities of Central Appalachia, which includes West Virginia, Southwest Virginia, Eastern Kentucky, Southeast Ohio, East Tennessee, and North Carolina (Centers for Disease Control and Prevention, 2011).

Another wicked problem common in rural communities is stagnant or declining economic growth. In a recent report by the International Economic Development Council (IEDC), entrepreneurship was cited as a growing area of focus for rural community colleges. According to the report, cultivating small businesses is viewed as an opportunity to revitalize downtown districts and to diversify the community's economic base (IEDC, 2017). Entrepreneurial programs take various shapes, from competitions, traditional entrepreneurial degrees, and certificates to virtual and brick-and-mortar business incubation, acceleration, and

coworking spaces. In 2013, The National Association of Community College Entrepreneurship (NACCE) partnered with the Appalachian Regional Commission (ARC) to promote the entrepreneurial efforts of community colleges in Kentucky, Tennessee, and West Virginia (IEDC, 2017).

Rural community colleges would benefit a great deal from addressing these wicked problems, as addressing wicked problems is often accompanied by issue-focused funding. According to the SDGFunders (2021) dashboard, SDG-focused funding was estimated at approximately $84 billion for SDG#4, education for sustainability, in 2016 alone (see Appendix S). There are 16 other issue-focused goals tied to funding, which present community colleges with new opportunities for fundraising.

Entrepreneurship for Addressing Wicked Problems

Entrepreneurs across the world often bear the responsibility for creatively solving problems and generating economic growth (Cooper et al., 2004; Kauffman, 2005; Johansen, 2009; Lin & Nabergoj, 2014; Kuttim et al., 2014; Nasr & Boujelbene). Similarly, entrepreneurship is widely recognized as a catalyst for addressing wicked problems of economic, social, and environmental sustainability (United Nations Conference on Trade and Development [UNCTAD], 2017). In UNCTAD's (2017) report, titled *Entrepreneurship for Sustainable Development*, the ways in which entrepreneurship contributes to achieving the SDGs are outlined. According to UNCTAD (2017), economic entrepreneurship, entrepreneurship education, entrepreneurial mindset, social entrepreneurship, entrepreneurial ecosystems, and sustainable entrepreneurship each play an important role in addressing wicked problems of

sustainability. In this section, each topic is explained to connect the concepts of entrepreneurship with addressing wicked problems of sustainability.

Defining Entrepreneurship. The definition of *entrepreneurship* is widely debated. In fact, according to Lewis (2007), "sixty years of research is yet to produce widespread agreement on how to define entrepreneurship" (p. 2). More than one hundred different definitions exist (OECD Guiding Framework for Entrepreneurial Universities, 2012). The ambiguity is often a result of the concept traveling "between sectors, organizations, and actors" involving a "complex process of translation" (Ruskovaara et al., 2012, p. 2). While some researchers define entrepreneurship as new venture creation, others advocate for a broader definition involving value creation (Bridge, 2017). For example, Mishra and Zachary (2014) define entrepreneurship as a "process of value creation" leveraged in an uncertain environment (p. 251). Similarly, Bill Aulet, managing director of the Martin Trust Center at MIT, explains that people often believe "entrepreneurship is strictly associated with startups; that's not how we look at it" (Somers, M., 2018). Aulet added, "We believe that entrepreneurship is a way of creating value" both as an entrepreneur or as an employee.

Bridge (2017) warns the lack of clarity can be quite problematic due to misaligned expectations of funders, providers, and students regarding entrepreneurship education, potentially leading to disappointment for some.   In an academic setting, the course outcomes may be misaligned with a borrowed curriculum. In a funding scenario, the grantor may expect job creation outcomes, while the grantee designs the application around building entrepreneurial competencies for employability.

The current study provides examples of programmatic value creation related to economic, social, and environmental outcomes. Therefore, the current study will adopt a broader definition

of entrepreneurship through the lens of value creation. In the broader sense, "entrepreneurship often involves the self-directed pursuit of opportunities to create value for others. By creating value for others, individuals empower themselves" (G. Schoeniger, personal communication, July 15, 2020). According to Feld and Hathaway (2020), "while ideas may be the wellspring of economic potential, entrepreneurs are [also] the change-agents that bring that potential into reality, resulting in a wide variation in business performance and value creation" p. 25).

Entrepreneurial Economy. Entrepreneurship is often viewed as an economic growth and jobs issue, which is considered a wicked problem and included in the SDGs. John Dearie (2021), Founder of the Center for American Entrepreneurship, offered important insight into why entrepreneurship is critical to economic growth, during a recent interview. According to Dearie (2021), new businesses account for nearly all net new job creation, while established larger businesses are more likely to shed jobs. This assertion was based on years of his research, along with the studies of others.

Haltiwanger (2010) analyzed more than 70 million business establishments across America, using the Census and other government data, to determine whether small, large or young businesses created more jobs. Interestingly, the researcher found (a) new businesses disproportionately account for innovation in America and (b) as existing businesses focus on increasing efficiency through technology, the aggregate effect is a decline in jobs, shedding one million jobs annually on a net basis.

Nobel Prize winner Robert Solow (1988) explained that innovation is the driving force of job growth. Taken together, new businesses lead to innovation and ultimately, job growth. Dearie (2021) agreed, stating, "If it were not for businesses younger than five years old, the jobs

base in this country would actually shrink. New businesses are the principal source of innovation, which drives economic growth and job creation".

Research also indicates that new business formation has been in decline across America and broadly across industry sectors for over forty years (Decker et al., 2015). Dearie (2021) continued, "If new businesses are the source of innovation, economic growth and job creation, and if new business formation is in decline, maybe that would explain why notwithstanding the herculean efforts of policymakers to accelerate economic growth and job creation, it wasn't working". According to Dearie (2021), policymakers and economic growth advocates should be more focused on the entrepreneurial economy if they want to see economic and job growth.

Entrepreneurship Education. Today, entrepreneurship education is widely acknowledged on campuses and in research publications across the globe. In 2014, there were 71 peer-reviewed journals dedicated to the subject, 1,600 colleges and universities offering at least one entrepreneurship course on the topic, and 4,000 endowed chairs (Neck et al., 2014). In addition, there are over 100 US-based entrepreneurship centers affiliated with academic institutions (Neck et al., 2014).

A degree in entrepreneurship signals to job recruiters an acquisition of in-demand 21st-century skills, such as collaboration, problem-solving, and communication (Drucker, 1985; Kauffman Foundation, 2005; Neck et al., 2014). Otani (2015) reported that Bloomberg publications surveyed recruiters to find out what competencies are most in-demand. The findings indicated a demand for analytical thinking, CPS, motivation, communication, global mindset, collaboration, and entrepreneurial mindset. Entrepreneurship education instills an action-oriented ability to address complex problems creatively, embrace ambiguity, identify opportunities, advocate for their ideas, tolerate risks, and adapt to change (McGrath & MacMillan, 2000). The

process facilitates CPS, which supports paradigm shifts that can change society by shifting business models (Hunter, 2012). Additionally, most entrepreneurial education programs aim to (a) strengthen creative awareness, (b) recognize opportunities and take action, (c) act as an economic engine by training professionals and other educators, and (d) educate students about using business models to address economic and social problems (Hunter, 2012).

Best practices in entrepreneurship education have been thoroughly examined by the Organization for Economic Cooperation and Development (OECD) in a series of reports provided on the organization's website (OECD, 2021). An OECD Entrepreneurship360 report titled, *Entrepreneurship in Education: What, Why, When, How* provides a rich perspective regarding pedagogical approaches, value creation, competencies, tools, models, and processes (Lackéus, 2015). The OECD Entrepreneurship360 report focused on defining and assessing the entrepreneurial mindset (Krueger, 2015).

Entrepreneurial Mindset. Entrepreneurship education often aims to instill an entrepreneurial mindset using CPS for complex 21st-century issues (Küttim et al., 2014; Entrepreneurial Learning Initiative, 2021). *Entrepreneurial mindset* is defined as a cognitive process that empowers individuals to address problems and creatively generate ideas in uncertain environments (McGrath & MacMillan, 2000). The phenomenon is characterized by navigating uncertainty, pursuit of new opportunities, creative idea generation, problem-solving, growth mindset, risk-taking, iteration, and demonstrating tenacity (McGrath & MacMillan, 2000; Sardeshmukh & Smith-Nelson, 2011; The Entrepreneurial Learning Initiative, 2021). Moore (2014) explained that entrepreneurial mindset education builds confidence in problem-solving and decision making. McGrath and MacMillan (2000) asserted that the entrepreneurial mindset consists of five characteristics, including (a) seeking new opportunities, (b) disciplined pursuit of

opportunities, (c) filtering through and focusing on the best opportunities, (d) adaptively

executing, and I inviting others to pursue entrepreneurial leadership.   The entrepreneurial

mindset is often assessed through competencies, which are outlined through the EntreComp

framework. The framework includes 3 competence areas, 15 competences, and 442 learning

outcomes (Bacigalupo, Kampylis, Punie, & Van den Brande, 2016).

Starters. The concept of *starters* emerged during the COVID-19 pandemic based on the

premise that "We are all starters. All of us are born with an innate 'right to start,' to make an

idea into reality" (Hwang, 2020, p. 5). In 2020, Victor Hwang, former Vice President of

Entrepreneurship at the Ewing Marion Kauffman Foundation, launched the nonprofit, Right to

Start, with the goal of influencing minds, policies, and community. According to Hwang (2020),

"entrepreneurial opportunity ignites economic justice" and should be supported through (a) less

red tape, (b) equal access to capital through financial innovation, (c) expanded access to

entrepreneurial learning through local providers and libraries, and (d) a democratization of the

ability to take risk through portable healthcare and student loan deferral. Hwang calls for

policymakers to redirect 5% ($2.7B) of "workforce training and economic development funding

to helping Americans start businesses through local entrepreneurial support organizations" (p.

35). With the appropriately trained entrepreneurship educators and evidence-based

programming, community colleges are well-positioned to already take on the role. Hwang also

recommended America's New Business Plan (www.startusupnow.org) for policy ideas to help

drive prosperity through entrepreneurship (p. 36).

Changemakers. The *changemaker* is defined as an individual who is driven to

creatively tackle an economic, social, or environmental problem. Changemakers take action,

often through systemic interventions, to advance change for the purposes of simply improving

society (Ashoka, 2016). According to Ashoka (2016), there are six types of changemakers, including:

- Social Architects- Policymakers and organizational leaders

- Influencers- Educators, researchers, journalists, and parents

- Investors- Impact investors and philanthropists

- Skills Catalysts- Accountants, lawyers, mediators, and computer programmers

- Inventors- Engineers and scientists

- Connectors- Conveners and community organizers

Social Entrepreneurship. One type of changemaker is a social entrepreneur (Ashoka, 2016). According to Duke University's (n.d.) Fuqua School of Business and the Center for Advancement of Social Entrepreneurship,

Social entrepreneurship is the process of recognizing and resourcefully pursuing opportunities to create social value with the innovative method. Social entrepreneurs are innovative, resourceful, and results-oriented individuals, who draw upon the best thinking in both the business and nonprofit worlds to develop strategies that maximize social impact. These entrepreneurial leaders operate in all kinds of organizations: large and small; new and old; religious and secular; non-profit, for-profit, and hybrid. (para. 1)

Dees (2001) described social entrepreneurs as change agents whose mission is to create and promote social value (rather or in addition to private value) through innovating, adapting, and continuous learning. While business entrepreneurs are viewed as focused on the economy, social entrepreneurs are focused on social change (Dees, 2003). According to Bornstein (2004), social entrepreneurs "are driven, creative individuals who question the status quo, exploit new opportunities, refuse to give up, and remake the world for the better" (p. 15). Dees (2003)

emphasized the important role of innovation and impact of social entrepreneurship in which business-minded individuals and methods pursue innovative solutions to addressing social problems. In fact, some researchers have highlighted the important role that social entrepreneurs play as bridges between business and philanthropy by applying entrepreneurial theory to address societal problems related to the environment, equality, and economic issues (Roberts & Woods, 2005). After examining the literature surrounding social entrepreneurship, Jiao (2011) proposed that "higher levels of social entrepreneurship are positively related to social impact in society" (p. 139). Jiao (2011) encouraged governments, associations, and academic institutions to collaborate and cultivate a culture of problem-solving through social entrepreneurship.

According to Dees (2012), the field of social entrepreneurship is comprised of two cultures:" an old-age culture of charity and a more contemporary culture of entrepreneurial problem-solving" (p. 321). Dees (2012) asserted that success in social entrepreneurship requires a blend of both cultures, but Muhammad Yunus (1999), founder of Grameen Bank, acknowledged that often charity only perpetuates societal challenges, such as poverty. Frustrated by the charitable approaches to poverty, many thinkers sought a more systematic and scientific approach, which the researchers coined as "scientific charity". Social entrepreneurship is considered as an "extension of this analytic problem-solving thrust" (Dees, 2012, p. 322). Social entrepreneurs are motivated by their drive and ability to alleviate the damage caused by an unjust equilibrium (Martin & Osberg, 2007). Researchers have acknowledged that social entrepreneurs need to collectively work toward outcomes (Moriano et al., 2012), but too few social organizations track outcomes associated with their mission and strategies (Sawhill & Williamson, 2001).

The Schwab Foundation's Impact Study provides insight into the power of social entrepreneurs (Schwab Foundation for Social Entrepreneurship, 2020). According to the study, 130 entrepreneurs can collectively reach 662 million people across 190 countries for the purposes of supporting the Sustainable Development Goals. Additionally, the report outlines the most common issues social entrepreneurs work on, including education, economic opportunity and development, entrepreneurship and enterprise development, health and healthcare, environment and climate, gender equality, financial inclusion, workforce development, rural development, childhood and youth rights and development. In fact, the organization explicitly cites achieving measurable progress across all of the Sustainable Development Goals, which are described in the report as "a rally cry for action" (Schwab Foundation for Social Entrepreneurship, 2020, p. 10).

A prominent group of philanthropic and multi-stakeholder organizations, including Ashoka, Catalyst2030, Schwab Foundation, Skoll Foundation, Echoing Green, and facilitation partner McKinsey & Company (2021) recently published a report titled, *New Allies: How governments can unlock the potential of social entrepreneurs for the common good.* In the report, social entrepreneurs are described as "the R&D engine for society – and government. They design, test, and debug new approaches that tackle the root causes of social problems. Once shown to work, their innovations inform better policies that increase prosperity, participation and equity for citizens" (p. 2). According to Bill Drayton, the founder of Ashoka, "Social entrepreneurs are not content with giving people fish or teaching people how to fish. They will not rest until they have revolutionized the fishing industry" (p. 7).

The authors of the report also emphasized the need for 'systems social entrepreneurship'. According to Jeroo Billimoria, Chief Facilitator for Catalyst2030, "*Systems social*

entrepreneurship is about a distinct way of approaching social problems, not about specific

organizational forms or business models. To accelerate SDG achievement, we need to strengthen

this entrepreneurial spirit and a culture of collaboration in all sectors" (p. 2). The Skoll

Foundation's Chief Strategy Officer, Shivani Garg Patel, emphasized, "There are already many

synergies between social entrepreneurs and government, notably a focus on systems-level

solutions to address urgent societal challenges – and when they partner together, they can create

impact at greater scale". Patel added, "By pairing the innovative solutions from social

entrepreneurs closest to the issues with the reach and expertise of government partners, alliances

are created that pave the way for truly transformational, sustainable change" (p. 2). The author's

suggested that government players can "create the ecosystems that social entrepreneurs need to

change policies, practices, power dynamics, social norms and mindsets" (p. 3). Therefore,

entrepreneurial ecosystems play a critical role if community colleges are to address wicked

problems collaboratively through partnerships.

Entrepreneurial Ecosystems. *Entrepreneurial ecosystems* are defined as, "the

geographically-bound systems of individuals, organizations, physical resources, social structures,

and cultural values that generate new venture activity" (Roundy, 2017, pp. 1221-1222).

Evidence has indicated that these ecosystems are "potent engines for economic and community

development" (Roundy, 2017, p. 1221). Various stakeholders, including accelerators,

incubators, business plan competitions, and public funding incentives, promote synergies that

can be harnessed to collectively address wicked problems (Volkmann et al., 2019).

Entrepreneurial Builders as Principal Investigators. *Ecosystem builders* are central

players in entrepreneurial ecosystems, as they drive long-term and system-wide change by

supporting innovation and entrepreneurship in their region or community (Gines & Sampson,

2019; Kauffman Foundation, 2021; Horn, A., 2017). These individuals contribute to local,

regional, state-wide, and national goals by (a) leading recognized startup ecosystem building

initiatives, (b) running entrepreneurial centers and coworking spaces, (c) managing accelerators,

incubators, or startup school programs, (d) serving in professional economic development or

government roles, or (e) investors and serial entrepreneurs investing in building their local

ecosystem (Startup Champions, 2020; Kauffman Foundation, 2021; Horn, A., 2017).

Ecosystem builders occasionally serve as publicly funded *principal investigators* (PI)

tasked with public sector entrepreneurship activities (Cunningham et al., 2019). The PI within

this context is defined as "an influential entrepreneurial ecosystem actor, whose actions and

behaviors shape and influence" economic and social change, often through activities involving

research and complex multi-stakeholder engagement. Cunningham et al. (2016) identified ten

roles and responsibilities of PIs when taking on public-sector activities.

Ecosystem Mapping. Ecosystem mapping, which leverages the actor and factor model,

is a common starting point for communities seeking to build an entrepreneurial ecosystem or

individuals new to a community (Feld & Hathaway, 2020). The process involves developing

categories of who is involved in the ecosystem and what role that individual plays. Actors

include the leaders, feeders, and instigators, while the factors include seven types of capital:

human capital, intellectual capital, financial capital, institutional capital, cultural capital, network

capital, and physical capital (p. 61). The broader entrepreneurial ecosystem involves

accelerators, incubators, coworking spaces, entrepreneurial support organizations, large

corporations, media, research and advocacy groups, local and regional government, national

government, colleges and universities, service providers, investors, coaches, advisors, mentors,

startup employees, and serial entrepreneurs (p. 187). However, ecosystems are not static, and

therefore, the maps shouldn't be either. This realization has led many ecosystem builders to integrate network analysis models, which demonstrate dynamic relationships, mental models, and influence between players within the ecosystem (Feld & Hathaway, 2020). Strategic Doing is a multi-stakeholder process that leverages open innovation to build strategic value through collaborative dialogue, creating shared value for complex challenges (Morrison et al., 2019). The program has been used to prompt ecosystem action between multiple stakeholders within the entrepreneurial ecosystem (Morrison et al., 2019).

Ecosystem Logics.   Ecosystems foster different institutional *logics* (Gulati et al., 2012), which are defined as "the formal and informal rules of action, interaction and interpretation that guide and constrain decision makers" (Ocasio & Thornton, 1999, p. 804). The two dominant logics within entrepreneurial ecosystems are entrepreneurial-market logic and community logic (Roundy, 2017). Entrepreneurial-market logic involves economic or capitalistic logic concerned with efficiency, competition, wealth accumulation, profit maximization, and value capture. Activities common within entrepreneurial-market logic often involve pursuing innovation, creativity, and opportunity, tolerating uncertainty, and developing new business models (Cunningham et al., 2002).   Community logic emphasizes cooperation, altruism, community needs, and societal value creation (Marquis et al., 2011; Reay et al., 2015; Thornton et al., 2012).

The blended or hybrid logic is particularly important because of its influence on the effectiveness of problem-solving in the context of wicked problems of sustainability (Spigel, 2016). However, organizations juggling different logics commonly experience tension (Greenwood et al., 2011). For example, while entrepreneurial-market logic may emphasize maximizing profit, community logic often promotes altruistic goals (Smith et al., 2013). Several

researchers have examined organizations that combine both market and community logics to address social problems through business methods (Smith et al., 2013).

Sustainability and Entrepreneurship. Sustainability and entrepreneurship have several common characteristics. For example, both require innovation through creatively combining resources in new ways (Nicholls-Nixon et al., 2000), are concerned with protecting future generations, and emphasize impact as a primary goal. Modern literature views sustainable entrepreneurship as an imperative for business success, whereas literature of the past sees the concept as capital cost without return (Bocken et al., 2014, p. 647). Similarly, Weidinger (2014) viewed sustainable entrepreneurship not as "a job for the do-gooders or idealists but rather an essential strategic decision" (p. 292).

Sustainable Entrepreneurship. Entrepreneurship education develops creative problem-solving skills for social and economic issues, competencies aligned with sustainable entrepreneurship (Johansen, 2010; Lin & Nabergoj, 2014). *Sustainable entrepreneurship* (SE) is defined as discovering and creating entrepreneurial opportunities that improve social and environmental gains for members in society in an uncertain environment (Hockerts & Wüstenhagen, 2010; Pacheco et al., 2010; Shepherd & Patzelt, 2011), "consistent with sustainable development goals" (Pacheco et al., 2010, p. 471). The core concept is based on combining social entrepreneurship and environmental sustainability (Dean & McMullen, 2007). While social entrepreneurship is driven by mission over profit, sustainable entrepreneurship is driven by social and environmental problems without neglecting profit (Dean & McMullen, 2007). In the past, sustainable entrepreneurship was primarily focused on the environment but recently shifted to a societal focus, prompting more attention from the scientific community (Fellnhofer et al., 2014). Sustainable entrepreneurship is widely cited as a method for addressing

environmental (Cohen & Winn, 2007; Dean & McMullen, 2007; York & Venkataraman, 2010) and societal issues (Zahra et al., 2009) faced in this century.

Ploum et al. (2018) used a qualitative method to examine several existing frameworks for sustainable entrepreneurship. Data were collected through a questionnaire distributed to a sample of 438 students at the University of Applied Sciences in the Netherlands. Findings suggested the seven key competencies for sustainable entrepreneurship include a) systems thinking competence, (b) embracing diversity and interdisciplinary competence, (c) foresighted thinking competence, (d) normative competence/stakeholder goal mapping, I action competence, (f) interpersonal competence, and (g) strategic management competence.

Sustainable Entrepreneurial Ecosystems. Cohen (2013) defined *sustainable entrepreneurial ecosystems* as "an interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures" (p. 3).   Volkmann (2019) explored how entrepreneurial ecosystems can promote addressing wicked problems of sustainability to support the SDGs. Welter et al. (2019) viewed sustainable entrepreneurial ecosystems within the larger holistic context of bettering society and the environment. According to Volkmann et al. (2019), four factors promote sustainable entrepreneurship: (a) possess a sustainability orientation, (b) recognize and mobilize for opportunities to address sustainability, (c) innovatively collaborate for sustainability initiatives, and (d) markets for sustainability are discovered or created. Bischoff and Volkmann (2018) identified factors needed for success in sustainable entrepreneurial ecosystems, including (a) a regional culture that supports entrepreneurs, (b) stakeholders specifically support sustainable business, and (c) collaborative networking supports sustainable entrepreneurship.

Corporate Social Responsibility. Corporate social responsibility (CSR) is often used interchangeably with social entrepreneurship but important differences between the two exist (Sarango-Lalangui et al., 2018). For example, CSR refers to expectations for the corporation to meet the needs of investors and stakeholders, while behaving ethically and without doing harm to society or the environment. While CSR accompanies the core business, sustainable entrepreneurship is embedded into the core business. In simple terms, CSR's goal is "doing less bad" while sustainable entrepreneurship aims to "do more good" (York & Venkataraman, 2010, p. 451).

Triple Bottom Line. The concept of Triple Bottom Line (TBL) or 3P (People, Planet, and Profit) was introduced by Elkington and Upward (2016) as a practice method for balancing three dimensions of sustainability: economic health (profit), societal equity and justice (people), and environmental resilience (planet) Hockerts & Wüstenhagen, 2010). Haines (1998, p. 10) suggested the dimensions are in hierarchal order. The which would explain why the terms sustainability and environment are sometimes used interchangeably (Pacheco et al., 2010). Today, the TBL concept is a widely accepted framework appropriate for explaining how sustainable entrepreneurs operate (Elkington, 1997).

Value Creation for Society, Academic Institutions, and Students

Researchers have considered MSIs to be an innovative model for bringing together actors who each contribute resources for the purpose of addressing challenges for collective impact. Assessing the effectiveness of MSIs in relation to wicked problems remains an open question (Austin & Seitanidi, 2012). The high level of complexity of wicked problems makes pinpointing the cause-and-effect relationship generated by MSIs for value creation a changing and often

impossible task (Hospes, 2008). Management scholars agree that MSIs typically lead to value

creation (Margolis & Walsh, 2003; Porter & Kramer, 2011), often yielding more impact than

efforts of single individuals (Teegen et al., 2004; Warner & Sullivan, 2004).

According to Lackéus (2015), the value created is dependent on the stakeholder. For

example, business entrepreneurs typically seek to create value for customers, employees, and

shareholders. Alternatively, social entrepreneurs create value for society. Entrepreneurship

educators often aim to create value through job creation, economic success, innovation, and

economic renewal. Other less common but promising value creation outcomes of

entrepreneurship education include joy, engagement, creativity, and tackling societal challenges.

According to Jameson and O'Donnell (2015), the entrepreneurial higher education organization

seeks to create economic, societal, cultural, and technological value. Lackéus (2015) proposes

three level of analysis for value creation, including individual, organizational, and societal.

Lackéus (2015) proposes three levels of value creation, including individual, organizational and

societal. In this section, the researcher will explore these three levels of value creation.

Additionally, a brief overview of commonly employed entrepreneurial value creation tools is

provided.

Value for Society. Dentoni et al. (2016) affirmed that stakeholder-oriented organizations

are ideally suited to tackle wicked problems, which are large, messy, and complex (Rittel &

Webber, 1973). The orientation is considered crucial for creating societal impact through cross-

sector partnerships (Dentoni et al., 2016). After all, the various partners are able to access

additional resources and capabilities they would not have been able to otherwise (Austin, 2000;

Rondinelli & London, 2003; Waddell, 2000). Specifically, problem sharing helps to co-design

and implement new solutions aimed at addressing the wicked problems (Murphy et al., 2012),

which are quite relevant to established sustainability goals (Austin, 2000; Rondinelli & London, 2003).

Trujillo (2018) explored systemic change through partnerships between private, public, and social sectors for the purposes of addressing wicked societal problems. The qualitative embedded case study sought to answer the question: How do cross-sector collaborations lead to systemic change? The study highlighted examples of economic, social, and political change with an emphasis on the model of alliance and beneficiaries' increased capacity for collective action, value creation, and systemic change.

Academic institutions are uniquely positioned to provide valuable support in the form of technical expertise, cultural mission, and legitimacy as regional leaders (Arbo & Bennworth, 2007). Devine-Wright et al. (2001) outlined several benefits, including the contribution of:

1. systems-thinking and critical thinking perspectives crucial for addressing social, environmental, and environmental issues

2. new products and services

3. fundraising support

4. increased acceptability with the broader public regarding recommendations and results (Zilahy & Huisingh, 2009)

5. setting the standard through visible action toward sustainable development

6. network facilitation and convening of regional networks around a common cause

7. strengthening of social capital and bridging of bonds between partners

In an effort to support environmental sustainability, the AACC launched the Center for Sustainability Education and Economic Development (SEED), which today boasts 479 member institutions (https://theseedcenter.org/). According to the center, "Community colleges are

ideally positioned to help ensure that low-income under and unemployed workers can advance into family-sustaining careers, while the communities in which they live improve resilience to climate insecurity" (White & Cohen, 2014, p. 7). In 2014, the center published *A Guide to Climate Resiliency & the Community College*, which encourages community colleges to participate in local decision making and contribute through the mobilization of faculty, staff, and workers. The guide provides resources, case studies, research, and practical recommendations for participating in planning, developing curriculum, and integrating workforce development into the cause (White & Cohen, 2014).

Value for Academic Institutions. Multi-sector initiatives contribute value to organizations in the form of new strengths, advantages, and assets, such as technical and management skills, human capital, and the ability to improve the organization's reputation (Barney, 1991; Penrose, 1959; Wernerfelt, 1984). Dentoni et al. (2016, p. 37) explained that "scarce resources, such as tacit and competence-related knowledge are often available through the partnerships" (Dierickx & Cool, 1989; Barney, 1991; Gulati, 1999; Peteraf, 1993; Prahalad & Ramaswamy, 2004). Organizational incentives for multi-stakeholder collaboration most cited throughout the literature include access to financial capital, market knowledge, management experience, provisional knowledge, legitimacy, and community relationships, such as non-governmental (Dahan et al., 2010; Waddell, 2002). These capabilities are rarely stronger in one organization than would be through partnerships (Robinson & Berkes, 2011). In addition, organizations often benefit financially through new sources of funding or cost savings through shared services. Non-financial gains may include in-kind contributions of goods, services, and volunteers. Non-tangible benefits include "social or political capital; networking and connections; increased legitimacy; reputational benefits; influence and positioning; knowledge

and capacity building; innovation in thinking and employee morale and retention" (Stibbe et al., 2019, p. 14)

Zilahy and Huisingh (2009) qualitatively surveyed individuals in regional sustainability initiatives and reported the following benefits to the institution of higher education: (a) educational/research benefits, such as faculty and student involvement in problem-solving for sustainability; (b) institutional benefits, such as increased credibility, improved public image, and increased access to new sources of funding; (c) benefits for the region, such as faculty and stakeholder engagement for systems-thinking, social, environmental and economic factors, the facilitation of critical thinking by faculty; and (d) the development of products and services that are knowledge-based, and through helping to obtain funding for societal stakeholders. MSIs also provide opportunities for mutual learning and the production of knowledge (Albrecht et al., 2007; Lehmann et al., 2009; Manring, 2014), new funding sources (Zilahy & Huisingh, 2009), an increased level of public transparency and accountability (Albrecht et al., 2007), and an increase in student engagement with societal problems (Zilahy & Huisingh, 2009). Ferrer-Balas et al. (2010) contended that partnerships enable institutions of higher education a way of "going beyond the rhetoric" (p. 607) and implementing system-wide changes aimed at more sustainable societies. Weidinger (2014) asserted, "Without sustainable organizations, there is no sustainable development, thus, no future" (p. 289).

Value for Students. Research has indicated that individuals participating in MSIs employing collaborative rationality benefit students through developing new relationships, engaging in opportunities for reciprocity, and learning about the problems and other participants (Innes & Booher, 2016).

Entrepreneurial Value Creation Processes, Tools, Methods, and Theories. Value creation is often supported through entrepreneurial processes, tools, methods, and theories, including Effectuation (Read et al., 2011), Customer Development (Blank, 2005), Business Model Generation (Osterwalder & Pigneur, 2010), Lean Startup (Ries, 2010), Appreciative Inquiry (Bushe & Kassam, 2005), Service-Learning (Steinke and Fitch, 2007, p. 24), Design Thinking (Johansson-Skoldberg et al., 2013), Systems Thinking (Patel & Mehta, 2017), and Entrepreneurial Thinking (Patel & Mehta, 2017). Notably, the tools are used by entrepreneurs, intrapreneurs, and changemakers. In this section, the tools will be briefly explored.

Effectuation. *Effectuation* theory is a thinking framework and set of heuristics, which emphasizes taking action based on available resources for goal achievement (Sarasvathy, 2001). Rather than starting with a pre-determined goal and well-designed linear process to achieve the goal, as is common in causal logic, effectuation relies on effectual logic. Sarasvathy (2001) explains that effectual logic is more appropriate for the uncertain environment entrepreneurs navigate. The four principles of effectuation are a) bird-in-hand, which encourages value creation based on the resources one currently has access to, b) lemonade principle, which emphasizes that mistakes are inevitable but can lead to new opportunities, c) crazy quilt, which views new partnerships as opportunities to gain new perspectives and funding because meeting new people often expands who and what you know, d) affordable loss, which encourages the individual to only invest the amount they are willing to lose (Sarasvathy, 2001). In general, the individual is encouraged to "begin with a simple problem for which you see an implementable solution – or even something that you simply believe would be fun to attempt (Read et al., 2011, p. 19). While using effectuation, "action trumps analysis" (p. 50).

Business Model Canvas. The *Business Model Canvas* is a one-page visual tool used to describe how an organization or individual "creates, delivers and captures value" (Osterwalder and Pigneur, 2010, p.14). The nine building blocks of the canvas include the key partners, key activities, key resources, cost structure, value proposition, customer relationships, channels of distribution, customer segments, and revenue streams. Once the student maps out the idea (or hypothesis), the user is encouraged to interact with potential customers to inquire about the potential customer or end user's pain points. Several variations of the model exist, including a mission model canvas, which is often used by social entrepreneurs and changemakers. Several other visual tools are available to support business model innovation. Taeuscher & Abdelkafi (2016) analyzed 45 different visual tools for business model innovation in which the Business Model Canvas is only one.

Customer Development. *Customer Development* is a value creation tool that encourages the student to consider, "What is the smallest or least complicated problem that the customer will pay us to solve?" (Blank and Dorf, 2012, p. 80). Blank and Dorf (2012) emphasized, "there are no facts inside your building, so get outside…. And into conversations with your customers" (p. 24). While employing customer development, the action involves conducting experiments to test the original hypothesis, which often evolves, based on patterns of new information gained through customer feedback loops.

Appreciative Inquiry. *Appreciative inquiry* is a theoretical framework that involves focusing less on problems that need to be solved and more on "examples of the system at its best" (Busche & Kassam, 2005, p. 165). Researchers often take a research-based approach to determine best practices. The method also involves creating new "knowledge, models, and images that are compelling to system members and provoke people to take action" (p. 165).

According to the literature, intervention happens through a combination of inquiry and infusing inspiration, joy, and motivation, which together prompts change (Beer et al., 1990). The infusion of positive energy and motivation is critical for overcoming the natural instinct of many to resist change (Beer et al., 1990).

Service-Learning. Service-learning is defined as "an organized educational experience that both meets needs of the community and fulfills learning objectives" (Steinke and Fitch, 2007, p. 24). The experience, which falls between an internship, practica, and volunteering, involves "creating tangible and intangible benefits for involved participants" (Kenworthy-U'Ren et al., 2006, p. 122). Through the process, "students engage in real-world, concrete, professional, semester-long consulting experiences" (p. 128) involving "faculty, students and community working together" (p. 122).

According to the American Association of Community Colleges (AACC), "nearly 60 percent of all [American Community] Colleges offer service-learning in their curriculum" while "another 30 percent are interested in starting service-learning initiatives" (Traver & Katz, 2014, p. 2). In 2012, the national Civic Learning and Democratic Engagement National Task Force called for "civic reform movement", arguing that "the more civic-oriented that colleges and universities become, the greater their overall capacity to spur local and global economic vitality, social and political well-being, and collective action to address public problems" (Civic Learning and Democratic Engagement National Task Force, 2012, p. 2). The US Department of Education agreed, stating, "To fulfill America's promise in our global society, our education system at all levels, from early learning through higher education, must serve our nation both as its economic engine and its wellspring for democracy" (Kanter and Ochoa, 2012). Traver & Katz (2014) provided a deeper perspective regarding the community college mission alignment

with service-learning, as well as contextual considerations, student success outcomes, pedagogical, best practices, as well as other theoretical and empirical perspectives.

    Design Thinking. *Design thinking* is defined as "a process of actions and decisions aimed at producing products, services, environments, and systems that address a problem and improve people's lives" (Boni et al., 2009, p. 409). The central tenets of design thinking are multi-disciplinary, human-centered, prototype-driven, and ideation-based. According to Katz & Brown (2009), design concepts are employed as agents of change. The empathy-driven process involves working directly with end-users to understand their pain points and stressors for the purposes of designing a human-centered solution or intervention to address the pain points described. During the process, students ask questions such as, "How might we support students during COVID-19?". The rigorous methodology also acts as a "mechanism for nurturing future leaders' and "brings creative techniques to the public for the greater good" (Patel and Mehta, 2017).

    Systems Thinking. *Systems thinking* is defined as "a process of understanding interactions and influences between various components in a system to solve complex problems, by addressing every issue as a component of a larger system, rather than an independent aspect with non-related consequences" (Patel & Mehta, 2017, p. 517). The concept is characterized by several key concepts, including a) viewing and addressing problems holistically, b) a mindset of consistent learning, adaption, and resilience, rather than planning, execution, and rigidity, c) a reliance on the synthesis of information and intuition, d) the willingness to take accountability for conditions and act to improve them, e) an understanding that "meaningful, lasting change requires addressing deep, structural problems over a sustained period", f) a small number of high leverage interventions have a more significant impact than single, isolated interventions (Feld &

Hathaway, 2020, p. 215). According to Patel and Mehta (2017), the central tenets of systems thinking are interdependence, differentiation, regulation, abstraction, and multi-finality.

MIT professor and systems scientist, Peter Senge, published *The Fifth Discipline: The Art and Practice of the Learning Organization* in 1990. In the book, Senge explained that humans tend to focus on what is happening around them simply because it is most observable, failing to recognize the underlying mental models which influence what is happening on the surface. To illustrate the point, Senge introduced the Iceberg Model of Systems Thinking (Meadows, 2008; Stroh, 2015). The model encourages one to think critically about the reasons for the event or activity. What has changed? For example, if job creation numbers are declining within a region, what has happened that may have caused the decrease? Perhaps the local community college discontinued community classes aimed at business startups. Next, the model encourages an inquiry into why this happened. Maybe state budget cuts have forced college administrators to make cuts based on which courses are not financially sustainable. The model now prompts questions about underlying assumptions and beliefs which drive the behavior. Perhaps the college assumed additional funding was not available to support entrepreneurial job creation. The root cause can now more effectively be addressed.

Systems thinkers also naturally consider how seemingly unrelated issues are interconnected (Mansharamani, 2020). As Harvard Business professor Mansharamani (2020) has explained, "Breadth of perspective and the ability to connect the proverbial dots (the domain of generalists) is likely to be as important as the depth of experience and the ability to generate dots (the domain of specialists)" (p. 1). Similarly, one of Google's top recruiters emphasized that the organization values problem-solvers who possess "general cognitive ability" over

knowledge related to a specific role (Mansharamani, 2020, p. 3). Entrepreneurial systems thinking is critical for addressing wicked problems (Feld & Hathaway, 2020).

     Entrepreneurial Thinking. *Entrepreneurial thinking* is defined as "a mindset that emphasizes recognizing opportunity and learning to capitalize on it in a manner unique to the situation" (Patel & Mehta, 2017, p.518). The mindset involves applying effectual reasoning, or discovery-driven planning, that influences the goals to shift as new information is gained, rather than starting with concrete goals. According to Patel and Mehta (2017), entrepreneurial thinking's central tenets are collaboration, value creation, discovery-driven, and resilience. Modern research has increasingly focused on the higher-order cognitive strategies leveraged by entrepreneurs (Haynie et al. 2010).

     Interestingly, after Patel and Mehta (2017) examined the individual tenants of systems, design, and entrepreneurial thinking, the intersections between the three were analyzed. According to the analysis, entrepreneurial thinking is a mindset used to identify opportunities to create value and resilience through collaboration and human interaction. Once the idea has been identified, design thinking harnesses human-centered design to explore and refine the problem statement with a multi-disciplinary and multi-stakeholder lens, ideate for potential solutions or interventions ideally with the end-user while building and testing prototypes of the solution. Finally, systems thinking views the proposed solution through a lens of holistic interdependence, which means that "the parts only have meaning in relation to the entire system" (Patel & Mehta, 2017, p. 521). Informed system thinkers often hesitate to implement interventions before thoroughly understanding the whole system to avoid unintended consequences of a proposed intervention.

According to Patel and Mehta (2017), "when an entrepreneurial thinker attempts to create value through innovation, he or she leverages design thinking to identify new opportunities". Additionally, "design thinking facilitates the creation of intrinsic value in products or ideas, whereas entrepreneurial thinking is a means of bringing that value to realization" (p. 525). Finally, systems thinking "harmonizes improvement across an entire ecosystem" (Patel & Mehta, 2017, p. 525). The processes, tools, methods, and theories are often used together as a toolbox for complex problem-solving. Often, the question is, which tool or combination of tools is best suited to address the problem at hand?

Employees and Partners Participating in MSIs

Roloff (2008) described MSIs as governance arrangements in which actors from business, government, academia, and civil society, "come together in order to find a common approach to an issue that affects them all" (p. 238). MSI initiators have advised an approach of careful curation, highlighting the importance of identifying the right individuals for the initial core group and expanding to additional members only when they can further the MSI's objective (Stern et al., 2015).

Trencher et al. (2014) provided an empirical analysis of which university employees typically participate in cross-sector sustainability alliances. The research indicated four key actors: faculty/researchers, administrators, students, and bridging organizations, which are specifically set up to act as a bridge between the institution and real-world sustainability initiatives. Although it is helpful to know which individuals have represented the university, a deeper understanding of this issue would be helpful.

Norris et al. (2016) proposed that the act of forming teams to address wicked problems is a wicked problem in itself. In the article, the researchers identified the characteristics of transdisciplinary team formation and recommend eight strategies for managing the process based on heuristics, or tactics for problem-solving that fit a particular scenario (Huutoniemi & Tapio, 2014). *Transdisciplinary* is defined as problem-oriented research involving stakeholders from multiple sectors of society and various disciplines (Klein, 2008; Stokols et al., 2008). According to the literature, transdisciplinary research is necessary when (a) knowledge about the problem is incomplete, (b) there is disagreement regarding the nature of the problem, and (c) important implications are held regarding problems and solutions for those most impacted by the initiative (Pohl & Hirsch Hadorn, 2007). Each of the scenarios aligns with the concept of wicked problems (Rittel & Webber, 1973). Transdisciplinary research "grasps the complexity of problems, takes into account the diversity of real-world and scientific perceptions of problems, links abstract and case-specific knowledge and develops knowledge and practices that promote what is perceived to be the common good" (Pohl & Hirsch Hadorn, 2007, p. 20). The eight strategies recommended for transdisciplinary team formation are:

1. An equal number of participants from the different constituencies should be maintained and the reasoning behind each constituency participating should be reiterated to build trust.

2. Individuals with experience in cross-disciplinary and organizational collaboration are best suited to participate.

3. Members should be properly incentivized for the goal at hand.

4. The team as a whole should address the appropriateness of adding new members.

5. A culture of testing, learning, and adapting, based on outcomes should be cultivated.

6. The problem originally targeted may refocus to another problem, which is okay.

7. Effective transdisciplinary teams require time and opportunities for engagement.

8. The thrust of the project should be based on the team's collective research, interests, and competencies, which relies heavily on a shared appreciation for individual member research interests, competencies, skills, and worldviews. (Norris et al., 2016)

Conclusion

Researchers have explored the role of baccalaureate-granting institutions in addressing wicked problems of sustainability through MSIs. While understanding the role of baccalaureate-granting institutions is important, the system of community colleges nationwide provides a significant opportunity for impact. A gap exists in terms of the role community colleges play in addressing wicked problems through MSIs and how the mission of community colleges is aligned with these efforts. Chapter 3 contains an explanation of how this study fills the gap in the existing literature and the study's research design and methodology.

CHAPTER 3

METHODOLOGY

Multi-stakeholder initiatives provide an avenue to addressing wicked problems of sustainability, such as climate change, poverty, hunger, and clean water. Unfortunately, the United States government has failed to prioritize sustainability or contribute solutions to these urgent problems in recent years. The researcher proposed a pathway to address wicked problems by leveraging MSIs in community colleges across the US.

This single case study was designed to understand the role of community colleges in addressing wicked problems of sustainability through MSIs. This chapter consists of the research design, method, purpose, research questions, researcher role, and participants, data collection methods and analysis, unit of analysis, ethical considerations, and efforts to strengthen the trustworthiness and credibility research. In addition, the research protocol for the study is provided along with details for how the study was bound.

Purpose Statement

The purpose of this qualitative, interview-based case study was to explore: (a) How leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) How community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability.

Research Questions

1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?

2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

Research Design

According to Yin (2006), the research design is a logical model of proof designed to "guide the investigator in the process of collecting, analyzing and interpreting observations" (pp. 77-78). In other words, the research design serves as a blueprint to determine what questions should be studied, what data are most relevant, and how the results should be analyzed (Philliber et al., 1980).

Qualitative Research Design

A qualitative research design was chosen for the study, as it offered an opportunity to deeply explore a topic from the perspective of participant experiences. A *qualitative study* is defined as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context" (Yin, 2014, p. 16). Creswell (2012) recommended using a qualitative research design when the focus of the research is on the experience of participants. Qualitative research leverages textual, rather than quantitative analysis surrounding the research problem (Bassey, 1999; Eisenhardt, 1989; Merriam, 1988; Ponterotto, 2005; Stake, 1995). Denzin and Lincoln (2002) contended qualitative research may include several subcategories, including ethnography, grounded theory, phenomenology, and case study. The design offers several benefits, such as providing deeper perspective than quantitative research surrounding complex real-life issues (Eisenhardt & Graebner, 2007; Yin, 2009) and providing methods that enable researchers to explore how individuals make sense of the world around them (Bogdan & Biklen, 2007).

Ultimately, the intent of this study was to develop a deeper level of understanding using thematic associations, which makes qualitative research an ideal method to leverage.

Methodological Approach

The researcher employed a single case-study design. According to Merriam and Tisdell (2016), a case study is a description of a single or bounded individual, program, organization, or community. Bromley (1990) described a case study as a "systemic inquiry into an event or set of related events which aims to describe and explain the phenomenon of interest" (p. 302).

Hatch (2002) asserted that the case study allows a phenomenon to be explored through the lens of the participants. Yin (2014) affirmed that the case study method is appropriate for evaluating complex knowledge. Ultimately, the outcome of a case study is the development of a deeper understanding surrounding a complex situation, including answers to how and why something occurred with an individual, group, or organization (Stake, 1995; Yin, 2011).

In qualitative case studies, many different tools are leveraged for data collection, which combined, provide a deeper, thematic perspective for analysis within a bounded system (Boblin et al., 2013; Creswell, 2013; Eisenhardt, 1989; Merriam, 1988; Stake, 1995; Yin, 2011). Case studies often combine several different collection methods, including interviews, observation, and focus groups, which enable the researcher to "transcend the merely descriptive" (Merriam, 1988, p. 131) to explore why a phenomenon occurred (Boblin et al., 2013; Creswell, 2013; Eisenhardt, 1989; Stake, 1995; Yin, 2011). Three types of case studies include intrinsic, instrumental, and collective (Merriam, 1988; Stake, 1995; Yin, 2011). The goal of intrinsic case studies is to understand about a person, phenomenon, or organization (Baxter & Jack, 2008; Boblin et al., 2013; Stake, 1995). In contrast, the goal of instrumental cases is to better understand a situation, issue, or theme (Baxter & Jack, 2008). In addition, case study formats

provide a more holistic perspective of real-life topics being studied (Bassey, 1999; Merriam, 1988).

Comparative Methods for Case Studies

Rhodes (2000) advocated for combining complexity-friendly theories together with complexity-friendly methods. Koliba et al. (2014) described comparative case studies as a complexity-friendly method because of the ability to describe contextual complexity, enabling a deeper level of pattern recognition throughout the embedded cases. Therefore, comparative case studies are an ideal method to align with this study's central theory of complexity and systemic innovation.

Comparative case studies aim to make comparisons between the participants, rather than simply understanding the cases (Stake, 1995). According to Yin (2003), an important characteristic of a comparative case study is that the researcher starts with a rationale, direction, and assumption, which may ultimately prove to be wrong. Although the case will not allow for formal hypothesis testing, hypothesis seeking is common (Seawright & Gerring, 2008).

In comparative case studies, researchers have recommended the use of a guiding hypothesis as a tool for generating questions and searching for patterns, providing the flexibility needed to explore new ideas and proposed policies (Marshall & Rossman, 2006). The three main guiding hypotheses are as follows: (a) community colleges, as MSI partners, can create value for society, organizations and students, (b) community colleges can attract grant funding from government and foundations to support the value creation efforts, and (c) the mission of community colleges is aligned with addressing wicked problems of sustainability.

Unit of Analysis. In an effort to ensure scope feasibility, the unit of analysis was limited to multi-stakeholder initiatives that focus on social, economic, and environmental sustainability

and include teams of higher education faculty, staff, and administration. MSIs are defined as voluntary and self-regulated groups of stakeholders from a variety of sectors in society, including government, business, civil society, international organizations, and academia to address complex issues (Bäckstrand, 2006). When collaborating, MSIs are considered multi-stakeholder collaborations. Multiple teams often operate under the umbrella of each multi-stakeholder initiative. Fully understanding the MSIs may require gaining additional perspective from select team members. The case study addressed the following questions:

1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?

2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges aligned with addressing wicked problems of sustainability?

Participant Selection and Sampling

The study emphasizes the unit of analysis at the level of the MSIs. The initial population included 10 multi-stakeholder initiative programs but the researcher expected not all multi-stakeholder programs would fit the criteria for the study. Ultimately, the goal was to include ten multi-stakeholder collaborations in the study. If the sample size fell below ten, experts would be contacted in an attempt to expand the participant size of interviewees meeting the inclusion and exclusion criteria.

Answering the research questions required a top-down approach, leveraging the initial multi-stakeholder leaders as gatekeepers. Multi-stakeholder leaders typically hold the systemic knowledge about the efforts and impact generated through their programs. This level provided

visibility, knowledge, and awareness about the initiatives that have been most successful with addressing wicked problems of sustainability through MSIs. The experts were asked to identify the multi-stakeholder collaborations that fit the inclusion and exclusion criteria.

An additional 10-30 interviewees were based on the recommendations of the multi-stakeholder leaders, who are informed at a national level. Key definitions were provided to all interviewees. After new interviewees were identified, either the gatekeeper or the researcher reached out to the prospective interviewee to request participation. Purposive sampling was also utilized for the study. Purposive sampling is often used for qualitative studies and involves selecting interviewees based on the research study's questions (Teddlie & Yu, 2007).

Inclusion and Exclusion Criteria

Inclusion and exclusion criteria are designed to provide boundaries for the research. The criteria were based on the research questions, goals of the study and the researcher's professional experience. MSIs selected to participate (a) have addressed wicked problems, (b) have included community colleges or trade schools as stakeholders during the program, (c) have yielded impressive measurable outcomes in a completed initiative that are documented, and (d) incorporate entrepreneurialism and/or entrepreneurial problem-solving. Alternatively, MSIs not selected to participate (a) have been in operation less than two years, (b) are not scalable, and (c) have no digital footprint on the Internet. The location of MSIs could exist internationally, as long as they were eligible to participate in the study based on the exclusion and inclusion criteria.

Data Collection

The data collection methods involved the data source, data method and type, research paradigms, traditions, ethical considerations, and methods designed to increase the trustworthiness. The data collection process involved semi-structured interviews and retrieval of

artifacts in the form of research studies, government reports, and related websites. According to

Maxwell (2013), research questions serve as a guide for identifying the appropriate method for

data collection. In addition, data collection methods should be justified in the research proposal.

Data Source

Case studies are considered effective for obtaining contextual, generalizable knowledge

through data generated from multiple sources (Yin, 2014). Bounding a case study is important to

ensure quality observations and analysis (Yin, 2014). The case was bound using the inclusion

and exclusion criteria.

Semi-Structured Interviews. Qualitative methods may include in-depth semi-structured

interviews, direct observation, artifacts, written documents, and personal diaries (Labuschagne,

2003). The researcher used semi-structured interviews, an open-ended form of data collection

that encourages deep exploration of personal experiences and perspectives compared to

quantitative survey responses. The initial interviewees included leaders of multi-stakeholder

programs who have experience with higher education collaboratively working toward addressing

wicked problems. The interviews were coded based on the perspectives of the participants

regarding the three research topics (Creswell, 2012, 2013; Merriam, 1988; Stake, 1995; Yin,

2011).

Procedures. The researcher reached out to the leaders of the MSIs through email. The

interviews were guided by research questions, while also allowing space for the interviewee to

clarify and expand on the topic (Merriam & Tisdell, 2016). The data collected through the

interviews consisted of direct quotes from leaders of the MSIs about their experiences, opinions,

and knowledge relating to the research questions. In a qualitative case study, data are collected in

the form of words rather than numbers (Labuschagne, 2003; Merriam & Tisdell, 2016). In

addition, the researcher is considered the primary tool for data collection and analysis (Creswell, 2012; Merriam & Tisdell, 2016). The interviews consisted of three phases, each with seven steps. Phase 1 was focused on the multi-stakeholder program leaders, while phase 2 was focused on interviewees recommended by the program leaders. Phase 3 leveraged purposive sampling to fill in remaining gaps in the research. Each phase is outlined below.

Program Leader Interviews. (1a) The researcher contacted the multi-stakeholder program leaders personally through email to explain the purpose and scope of the research study. (2a) Upon agreement, the researcher emailed the interviewee the Informed Consent paperwork, which included the purpose and scope of the study, any ethical issues, and a confidentiality and anonymity statement (Merriam & Tisdell, 2016). The interviewee was encouraged to share any questions or concerns about the study. (3a) The interview questions were shared prior to the interview. (4a) Upon agreement, the researcher scheduled all interviews through the Zoom meeting platform. (5a) In preparation for the interview, the interviewer visited the organization's website and collect strategic plans, reports, and other documents pertaining to the MSIs discussed. The researcher also collected the mission statement of the higher education institution that participated in the initiative, as well as news articles or reports about the effort.

Finally, during the document review, the researcher collected the backgrounds of community college participants, as they could impact the strength of the initiative as a whole (González-Rodríguez et al., 2015; Wiesema & Bantel, 1992). (6a) Next, the researcher hosted the semi-structured interviews, which were recorded. A separate audio recording was captured, and the researcher took detailed notes during the interview. Once the interview was complete, the Zoom recording was transcribed verbatim using a transcription service. According to Merriam and Tisdell (2016), a verbatim transcription offers the ideal format for qualitative analysis. After

the interview, the program leaders were asked if there are others that should be interviewed on behalf of the teams involving the community college. (7a) The researcher then coded the interviewees' answers using a thematic approach. (8a) A copy of the summary was sent to the interviewee to ensure the accuracy of the notes. If the interviewee responded about an error, the correction was promptly made. This step also involved descriptive notes, which provided information about the interview setting and experience, including any disruptions or body language. In addition, the researcher captured reflective notes felt throughout the interview. The reflective notes included personal thoughts or intuition felt during the interview.

   Follow-up Interviewees and Experts. If the sample size fell below 20, experts would be contacted in an attempt to expand the participant size of interviewees meeting the inclusion and exclusion criteria. The experts consisted of authors and foundation executives who are knowledgeable about the ideal sample interviewees. (1b) Once the sample size of 20 was met, the researcher contacted the interviewees personally through email to explain the purpose and scope of the research study. (2b) Upon agreement, the researcher emailed the interviewee the Informed Consent paperwork, which included the purpose and scope of the study, any ethical issues, and a confidentiality and anonymity statement (Merriam & Tisdell, 2016). In addition, the interviewee was encouraged to share any questions or concerns about the study. (3b) Upon agreement, the researcher scheduled all interviews through Zoom recordings. (4b) In preparation for the interview, the interviewer visited the organization's website and collected strategic plans, reports, and other documents pertaining to the MSIs discussed.

   Finally, during the document review, the researcher collected the backgrounds of community college participants, as they could impact the strength of the initiative as a whole (González-Rodríguez et al., 2015; Wiesema & Bantel, 1992). (5b) Next, the researcher

completed the semi-structured interviews, which were recorded. A separate audio recording was

captured, and finally, the researcher took detailed notes during the interview. After the interview,

the program leaders were asked if there are others that should be interviewed on behalf of the

community college, (6a) The researcher then coded the interviewee's answers using a thematic

approach, (7b) A copy of the summary was sent to the interviewee to ensure the accuracy of the

notes. If the interviewee responded about an error, the correction was promptly made. This step

also involved descriptive notes, which provided information about the interview setting and

experience, including any disruptions or body language. The next section outlines the process for

coding and data analysis.

Data Analysis

According to Creswell (2012), there is no singular process for qualitative data analysis.

Researchers noted that data analysis should be performed shortly after the pilot study because it

impacts the emergent design and structure of future data collection decisions (Lincoln & Guba,

1985). Therefore, a pilot interview was scheduled with the founder or executive of a multi-

stakeholder program, which addresses wicked problems in partnership with community colleges.

Interim analysis will be leveraged in order to discover recurring and common themes across the

data (Leedy & Ormrod, 2016). Significant words and phrases were grouped thematically.

According to Merriam and Tisdell (2016), a verbatim transcription offers the ideal format for

qualitative analysis. Narratives were used to describe both the individual cases, as well as a

cross-case synthesis for depth and clarity (Yin, 2014). The Zoom interviews were transcribed

verbatim using a transcription service and analyzed for themes using Nvivo transcription

software. Analyzing these data and organizing by topic helped the researcher better understand

and challenge findings (Maxwell, 2013).

Thematic Coding

According to Saldaña (2012), a code is "a short word or phrase that symbolically assigns a summative salient, essence-capturing and/or evocative attribute for a portion of language-based or visual data" (p. 3). The coding process consisted of three cycles. First cycle key phrases were as follows: *wicked problems, community colleges, economic development/entrepreneurship, programs, and theory.* Second cycle key phrases were: *various SDGs, stakeholders, role, mission, and specific programs.* Third cycle key phrases were connected to: *program goals, processes, tech platforms, value creation, various roles, funders, recipients, employees, and entrepreneurial terms.*

Increasing Trustworthiness and Credibility

Establishing trustworthiness can be accomplished through increasing credibility, transferability, dependability, confirmability, and triangulation (Hays & Singh, 2012). The trustworthiness of the study was increased through taking action impacting each criterion. For example, the researcher encouraged honesty, including probing sub-questions, interview de-briefs, integrate peer review, research reflections through field notes, and cross-referenced the findings of the current study with the previous study (Hays & Singh, 2012).

Transferability

Lincoln and Guba (1985) described *transferability* as being similar to external validity in quantitative research. However, the goal is not generalizability but rather to provide replication logic (Johnson, 1997). Additional steps to increase transferability include persistent observation, providing a thick description of the research and answering descriptive questions, such as who, what, when, where, and how. The researcher explained how findings may apply to other situations and studies. Finally, the boundaries of the study were highlighted.

Dependability

According to (Lincoln & Guba, 1985), *dependability* is defined as the consistency of the results over time among many researchers. The concept is described as similar to reliability in quantitative studies (Hays & Singh, 2012). The researcher provided a summary of any limitations or mistakes made.

Confirmability

Confirmability is defined as the degree to which the results of the study are accurate reflections of the participants (Lincoln & Guba, 1985). In order to increase confirmability, several actions recommended by Hays and Singh (2012) will be taken. For example, the reasoning behind the method employed, sampling technique, and data collection was explained. The data collected was continuously re-read, synthesized, and coded in order to increase the confirmability of the results. Finally, any researcher bias was addressed upfront throughout the reflective notes collected during the interviews.

Credibility

Lincoln and Guba (1985) defined *credibility* as the believability of a study. The study will follow the recommendation by Guba and Lincoln (1981, 1989) to increase credibility. Field notes and an audit trail were kept outlining the timeline, key decisions, data analysis, procedures, and self-awareness of the researcher. In quantitative research, the goal is to disclose subjectivity (Munhall, 2001, p. 73) in a manner free of bias (Morgan & Drury, 2003). On the other hand, researchers have revealed their biases in qualitative research through reflexivity (Yardley, 2000), which has been described as documenting the process of constructing the research. Finally, providing a copy of the findings summarized to the interviewee often ensures the accuracy of the notes and will increase credibility of the research (Nolan & Behi, 1995). The researcher utilized

triangulation through multiple methods. For example, interviews, documents, and observations were obtained in an attempt to triangulate the findings for increased trustworthiness (Leedy & Ormrod, 2016).

Key informants were also leveraged to triangulate the information, thereby strengthening the study. Marshall (1996) described *key informants* as natural observers positioned to provide unique insights as a result of their individual skills and/or position in society (p. 92). Sjoberg and Nett (1968) explained that the ideal informant is: (a) exposed to the kind of information sought for the study, (b) knowledgeable about the topic, (c) willing to provide insights, (d) able to communicate knowledge clearly, and I objective and unbiased. The key informants identified for this study are top executives at associations and organizations familiar with community colleges aiming to address wicked problems through MSIs.

Assumptions, Limitations, and Delimitations

Leedy and Ormrod (2016) described limitations as potential weaknesses of the study. The weaknesses may relate to the sample size, data collection, measurement, or personal biases. Limitations of the study include the small sample size. In addition, while the qualitative method is appropriate for exploring a phenomenon holistic in nature with a smaller sample size, incorporating a quantitative perspective would provide increased confirmation and validity through numerical data (Leedy & Ormrod, 2016). Therefore, the qualitative method serves as a key limitation.

According to Leedy and Ormrod (2016), delimitations are what a study does not intend to include in the research. The study included parameters of self-imposed delimitation designed to narrow the scope of the study. For example, only programs used in community and technical colleges to address wicked problems were included in this case study. In addition, the programs

chosen for inclusion have yielded positive impact for society, academic institutions, and/or community college students. Finally, the time of the study took place between September 2020 and December 2020.

An assumption is "a condition that is taken for granted" (Leedy & Ormrod, 2016, p. 5). Three basic assumptions were: (a) the participants are competent, (b) the participants are capable of understanding the basic concepts, and (c) the languages selected are appropriate for the participant audience. In addition, the researcher assumed all interviewees would provide honest answers that were not influenced by the moderators or other individuals (Leedy & Ormrod, 2016).

Ethical Considerations

Any study risks the potential for obtaining sensitive information. In an effort to protect interviewees, protocols were put into place to protect confidentiality of interviewees. The study was submitted and approved through the Old Dominion University Institutional Review Board (IRB; Appendix M). To ensure confidentiality, the names, titles, institutions, and locations were masked for any participant. In the transcript, pseudonyms were used. Audio recordings were saved on a secure cloud server. Participants signed an Informed Consent prior to the interview (see Appendix F). Finally, reflective notes captured during the interviews helped to control researcher bias.

Research Paradigm

The qualitative case study was guided by a constructivist paradigm, which is used to shape an understanding of what role(s) community colleges play in addressing wicked problems of sustainability. The research paradigm of a study provides the philosophical reasoning of the study. Crotty (1998) stated that constructivism means that "all meaningful reality is contingent

upon human practices, being constructed in and out of the interaction between human beings and their world" (p. 42). Constructivists believe that reality is created through a variety of cognitive individual, social, and learned experiences, which provide a benchmark for interpreting one's truth and validity (Bassey, 1999; Boblin et al., 2013; Crotty, 1998; Ponterotto, 2005; Yin, 2011). When a study employs a constructivist paradigm, it is understood that the researcher's feelings, thoughts, and interpretations influenced the way truth was conveyed.

Constructivists believe that new interactions lead to a constant evolution of truth and understanding, building on past experiences (Bassey, 1999; Crotty, 1998; Ponterotto, 2005; Stake, 1995; Yin, 2011). Therefore, each interaction is an opportunity to influence an individual's sense of reality (Crotty, 1998). In addition, different perspectives are viewed as crucial for cultivating a holistic understanding of the issue at hand (Crotty, 1998; Stake, 1995).

Researchers may frame a research paradigm using philosophical assumptions, including ontology, epistemology, axiology, and method. Ontology describes whether multiple interpretations of reality exist and define truth (Bassey, 1999; Boblin et al., 2013; Crotty, 1998; Ponterotto, 2005). Constructivists have acknowledged that multiple realities exist, rather than a single reality, and as with most qualitative research, are heavily influenced by context and perspective (Bassey, 1999; Eisenhardt, 1989; Merriam, 1988; Ponterotto, 2005; Stake, 1995). Epistemology emphasizes the researcher-participant relationship (Bassey, 1999; Boblin et al., 2013; Crotty, 1998; Ponterotto, 2005). Often, the researcher and the participants interact over time and, therefore, develop relationships aligned with the epistemology of constructivism. Axiology is a reflection of the values of the researcher, which influence reality within the study (Crotty, 1998). Therefore, the positionality, bias, and values are transparently disclosed. In this case, the researcher's background as an advocate in the field of entrepreneurship education has

the potential to influence the positionality of the research. Additionally, several personality profiles have indicated that the researcher is a natural promoter, which may serve the research well later but while actively researching, the promotional skills will need to be held back, as to not bias the research.

Methodology refers to the type of research process (Stake, 1995). Constructivists typically rely on a flexible, inductive style of data collection. Analysis and theory are leveraged as a conceptual framework, as opposed to a tool for testing (Bassey, 1999; Boblin et al., 2013; Ponterotto, 2005; Yin, 2011).

The researcher chose a constructivist research paradigm because of the holistic nature, participative role of the researcher, the use of perspective, and interpretation in data collection and analysis. The disclosure of positionality, values, and bias were embraced. However, the researcher was aware of and considered any potential bias during the study.

Summary

Ten cases followed an appropriate methodological approach to understand the role of community colleges in addressing wicked problems of sustainability using different MSIs. The researcher also explored how the mission of community colleges is aligned with addressing wicked problems of sustainability. Finally, the MSIs' goals, processes, success factors, participants, funders, and contextual factors were captured. The central research questions used to guide the study were:

1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?

2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

This chapter consisted of the methodological information regarding the study, including research design, method, purpose of the study, research questions, researcher role, participants, data collection and analysis, unit of analysis, ethical considerations, and efforts to increase trustworthiness and credibility throughout the research.

CHAPTER 4

FINDINGS AND ANALYSIS

The purpose of this qualitative case study was to explore: (a) How leaders of multi-stakeholder initiatives describe the role(s) of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) How community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability. The findings provide a deeper understanding of the role(s) community colleges can play in addressing wicked problems, such as poverty, inequality, hunger, homelessness, and climate change. With over 1100 community colleges located within 50 miles of any city across America, these institutions of higher education are ideally suited for addressing complex global challenges at a local level (AACC, 2020a). Notably, the literature affirms that global challenges are best addressed at a local level (ExpertInnengruppe LA21, 2010). The study was guided by the following research questions:

1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?

2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

Chapter I contains definitions and background for the study's core concepts, such as multi-stakeholder initiatives (MSIs), wicked problems of sustainability, global challenges, Sustainable Development Goals (SDGs), and sustainability in higher education. In addition, an overview of the methodology, significance and organization of the study are provided. Chapter

II consists of an introduction to the theoretical concepts related to the study, including the theory of complexity, complex adaptive systems, systemic innovation theory, and stakeholder theory. Additionally, a review of the literature surrounding multi-stakeholder strategies commonly used to address wicked problems, the role of higher education, and the community college mission alignment with addressing wicked problems of sustainability is included. Entrepreneurialism and entrepreneurial programming are often leveraged to address wicked problems of sustainability (UNCTAD, 2017). So related concepts, such as the entrepreneurial economy, entrepreneurship education, entrepreneurial mindset, social entrepreneurship, entrepreneurial ecosystems, sustainable entrepreneurship, entrepreneurial systems-thinkers, corporate social responsibility, and triple bottom-line were reviewed. Finally, according to the literature, MSIs may create value for society, academic institutions and students (Margolis & Walsh, 2003; Porter & Kramer, 2011; Teegen et al., 2004; Warner & Sullivan, 2004). Therefore, these topics surrounding value creation were also reviewed.

Data Collection and Analysis

The data collection spanned three months between October 2020 and January 2021. The first month involved scheduling meetings, providing the interview protocol and IRB approval to the participants and securing the informed consent paperwork. Several programs intended for inclusion did not fit the study's inclusion criteria, mostly for their lack of experience working with community colleges or the leaders were not accessible. Therefore, the initial sample was expanded using the snowball technique. However, a majority of the prospective participants agreed to participate and promptly scheduled the interview. The final sample was quite representative of the inclusion criteria for the study. The programs (a) addressed wicked problems, (b) included community colleges or trade schools as stakeholders during the program,

(c) yielded impressive measurable outcomes in a completed initiative that are documented, and

(d) incorporated entrepreneurialism or entrepreneurial problem-solving. The informed consent

paperwork and interview protocol was distributed and collected through DocuSign software.

The semi-structured interviews lasted between 40 minutes and 70 minutes, with an average of

approximately 60 minutes. With a total sample size of 28, the total contact time with the

participants was approximately 28 hours.

The interviews were recorded using Zoom software and transcribed using the

transcription software, Rev.com. The researcher used thematic coding to capture key phrases

throughout the transcription. The coded phrases were then transferred to a separate document

related to each research question for further analysis. The themes often aligned with the

literature and expanded beyond the university's role to include the community college's role.

Obviously, there were some overlaps, as both are higher education institutions. The largest

differences between the two were consistent with the difference between the mission of

bachelorette-granting universities versus community colleges. For example, many universities

prioritize research and commercialization, while community colleges prioritize local community

and economic development. Of course, both prioritize educating students.

Participant Summaries

The participant types included thirteen MSI program leaders and fifteen community

college MSI leaders. The thirteen MSI program leaders (a) addressed social, economic, and

environmental wicked problems of sustainability, (b) included community colleges or trade

schools as stakeholders during the program, (c) yielded impressive measurable outcomes that are

documented, and (d) incorporated entrepreneurialism and/or entrepreneurial problem-solving.

The fifteen-community college MSI leaders related directly to at least one of the thirteen MSI

programs, providing a wide array of perspectives for answering the research questions. Chapter III is comprised of an explanation of the participant selection, procedures, data collection, and analysis. In Chapter IV, the researcher summarized and synthesized the findings of the study and connected the data collected to the literature previously reviewed.

MSI Programs & Program Leaders

The thirteen MSI program leaders included global, nationwide, and statewide program advocates. Fifty-three percent of the program leaders interviewed were also the original founder of the program, while the others are leaders within the program. All of the interviewees had experience working with community colleges and were quite informed and supportive of the institutions. Table 4 provides a high-level summary of the MSI programs and program leaders.

Table 4

MSI Program, Interviewee, and Organization Description

	Interviewee Description	**Lead Organization & Program Description**
1	Katherine Massey Partnerships Director for Colleges and Universities 4+ years w/org Founded in 1980	The lead organization invests in transformative ideas and the people behind them, engaging more than 3,800+ social entrepreneurs in over 90 countries with 270+ Fellows here in the U.S., in addition to a growing community of young innovators passionate about change. The organization engages with university and college campuses for social innovation initiatives aimed at positive societal impact with the Sustainable Development Goals (SDGs) recognized as a core component of the program.
2	Derick Smith Chief Executive Officer 7+ years w/org Founded in 2013	The lead organization consists of a portfolio of action-driven, collaborative programs, and processes. During the 9-12-week program, an experienced entrepreneur assumes the role of facilitator. Participants learn to question their assumptions about the business or idea they hope to launch. During the program, the participants engage with a wide variety of entrepreneurial ecosystem (community) partners and stakeholders, including mentors, governmental entities, academic institutions and support systems.

	Interviewee Description	**Lead Organization & Program Description**
3	Dr. Johnny Delgado System Dean of WDS 4+ years w/org Launched in 2018	The lead organization is a community college system, in partnership with ecosystem partners. The initiative is an organic cross-sector collaborative of organizations focused on youth and workforce development. Leaders are from education (K-12 and community college), workforce development, municipal, and state government agencies, along with regional community and business partners that want to align efforts for more intentional, effective pathways to public service. The credentialing program includes entrepreneurial mindset training, which is reframed as innovative mindset training. The program does not explicitly engage with the SDGs but its impact benefits several goals, including poverty, hunger, homelessness, quality education, sustainable cities, innovation, and reduced inequality with an emphasis on decent work.
4	Donna Squire Technical Asst Provider Architecture Faculty 10+ years w/org Launched in 2016 Lauren Myrtle Statewide Project Manager Creator Launched in 2016	The lead organization is a community college system, in partnership with ecosystem partners. Collectively, the partners identified several problems: (1) the higher education pipeline was not keeping pace with the skills and education required by employers, (2) entrepreneurship among young adults has declined, and (3) instructional delivery methods of the past are being replaced by more accessible, inexpensive and plentiful sources. The initiative built a community of college makerspaces that intentionally engages non-traditional students, supports faculty in embedding making into instruction, offers adaptive curriculum, and partners with businesses to produce innovation-ready graduates inspired to contribute to the creative economy. The initiative drives innovation in education so that community college students will be prepared for success in STEM/STEAM careers that demand 21st Century skills. The program does not explicitly engage with the SDGs but its impact benefits several goals, including poverty, hunger, homelessness, quality education, sustainable cities, innovation, and reduced inequality with an emphasis on decent work.
5	Dr. Mark Fox Founder of Program 26+ years w/org Founded in 1994	The lead organization is a scalable discipline designed to help people form action-oriented collaborations quickly, move them toward measurable outcomes, and make adjustments along the way. The program does not explicitly engage with the SDGs but its impact benefits nearly all of the goals, as the

	Interviewee Description	**Lead Organization & Program Description**
		program's primary focus is to collaboratively build solutions for wicked problems.
6	Rebecca Flaherty National Director of Engagement & Partnerships 4+ years w/org Founded in 1997	The lead organization helps communities (1) identify and map entrepreneurial resources in their community, (2) connect the resources to entrepreneurs through a robust website, hotline, and/or a community calendar of events, (3) empower the ecosystem through convening collaborative dialogue, and (4) measure the impact of the efforts. In addition, the program emphasizes research and development for best practices in entrepreneurship-led economic development and funding. The program does not explicitly engage with the SDGs but has a substantial impact on economic growth and decent work.
7	Dr. Rachel Sampson Chief Executive Officer 6+ years w/org Founded in 2002	The lead organization is an association that educates and convenes entrepreneurial faculty and leaders at community colleges across America, along with supporters of this audience. In addition, the organization provides leadership and sustainable, scalable resources to foster entrepreneurial thinking and action in one of the largest entrepreneurial ecosystems in North America. In 2018, the association made a commitment to expand and deepen resources for members across North America. To support this work, a center of practice (COP) model was created. Community college leaders raised their hands and began working together to create these resources and work toward addressing major challenges faced by community colleges and the students they serve. The association explicitly engages with and supports adoption of the Sustainable Development Goals (SDGs).
8	Dr. Steve Mattox Professor and Program Designer Designed in 2009	The lead organization is a corporate backed program designed to help entrepreneurs create jobs and economic opportunity by providing greater access to education, capital, and business support services. The program does not explicitly engage with the SDGs but has a substantial impact on economic growth and decent work, while indirectly benefiting the social and economic goals. The curriculum was designed by one of the top entrepreneurial universities in America.

	Interviewee Description	**Lead Organization & Program Description**
9	Tori Henderson Director of Job Preparation	The lead organization is a funding alliance of 40 organizations across 18 counties. The program aims to eliminate systemic inequities by collaboratively influencing strategies for job creation, preparation and access. The community college works with the fund on a portfolio of initiatives.
10	Ms. Jenna Patterson Faculty & Statewide Advocate Launched in 2011	The lead organization is a federally-funded program. After launching this initiative in 2011, it quickly became one of the world's largest and most successful technology entrepreneurship/start-up accelerators. The program does not explicitly engage with the SDGs but has a substantial impact on economic growth and decent work, while indirectly benefiting all SDGs.
11	Joan Mcpherson Chief Executive Officer Founded in 1987 6 months Previous Role: US Director Founded in 2011	The lead organization is a public school operating under a major city's Office of Education's Juvenile Court and Community Schools educational Program. The Chief Executive Officer formerly served as the National Director for a global organization that specializes in scaling and replicating social enterprises. She is very familiar with the Sustainable Development Goals (SDGs) based on past work and educational experience in social innovation. The program does not explicitly engage with the SDGs but its impact benefits several with aspects, including poverty, homelessness, hunger, quality education, clean water and reduced inequality.
12	Mr. Fernando Aguiar Founder and Director 3+ years w/org Launched in 2017	The program leader of this organization is an entrepreneurial faculty member at a state university in America with a background in business. The scalable initiative is designed as a competition for college and university students with ideas for inventions to address today's most pressing problems. Student teams receive up to $2,500 in development grants to take their invention from an idea to a working prototype while learning about the process of commercialization. At the finals, students present their invention and compete for $30,000 in cash prizes. The program does not explicitly engage with the SDGs but its impact benefits nearly all of the goals, as the competition's primary focus is to build solutions for wicked problems.

Community College MSI Leaders

Fifteen MSI community college program leaders from twelve colleges held the following positions: one Statewide System President, two Vice Presidents of Workforce, six Professors, three Executive Directors, and three SBDC Instructors from campus centers. Slightly less than half of the community colleges in the study were located in large cities, while the remaining programs were located in the suburbs or in remote small towns. Table 5 provides a high-level summary of the MSI community college leaders, along with a brief description of the geographics, demographics and keywords from the community college's mission, goals, values, and priorities.

Table 5

Community College, Interviewee, and College's Mission/Vision Description

CC	Interviewee's Description	Community College Geographics & Demographics	Keywords from the Community College Mission Statement + Goals, Values and Priorities
1	Kate Pascal Director of Social Innovation 4+ years with CC	Student Population 51,000+ Hispanic- 71%, Black- 14%, White 5% 24 and Under- 73% Large City, Area Population- 2.7M	accessible, high-quality ed economic, cultural, civic leadership, advancing a diverse, global community
2	Olivia Love Business Counselor 10+ years with CC	Student Population 6.000+ Hispanic- 21%, Black- 2%, White 65% 24 and Under- 43% Remote Town, Area Population- 38,837	student-centered, preparing students for complex, ever-changing world through access, culture and innovative education
3	Ashley Nash Adjunct Instructor 6 months with CC	Student Population 3,000+	responsible lifelong learners, contribute to the vitality of the communities it serves

CC	Interviewee's Description	Community College Geographics & Demographics	Keywords from the Community College Mission Statement + Goals, Values and Priorities
		Hispanic- 2%, Black- 3%, White 77% 24 and Under- 77% Fringe Town, Area Population- 12,885	
4	Dr. Carole Taylor Associate Business Professor 10+ years with CC	Student Population: Not Listed Small Suburbs Area Population Approx. 59,599	quality education, intellectual curiosity, personal growth, lifelong learning, career and academic success
5	David Saddle Instructional Design & Dev Coord. 19+ years with CC	Student Population 20,000+ Hispanic- 34%, Black- 10%, White 25% 24 and Under- 62% Large City, Area Population- 2M	open-access, comprehensive, student support, contribute to the cultural, and economic vitality of the community.
6	Suzzy Parsons Computer Science & IT Faculty 14+ years with CC	Student Population 24,000+ Hispanic- 27%, Black- 7%, White 20%, Asian – 41% 24 and Under- 73% Large City, Area Population- 880,000	student achievement, life-long learning, diverse, critical thinking, information competency, communication skills, ethical reasoning, cultural, social, environmental, personal awareness, responsibility, collaboration, individual educational goals, belongs to the community, accessible, affordable, high-quality education, students, success in attaining their academic, cultural, and civic achievements. Equity achievement, sustainable community resource
7	Ernest Brand Vice President of Corporate and Continuing Education 24+ years with CC	Student Population 6,000+ Hispanic- 13%, Black-1 7%, White 58%, Asian – 2% 24 and Under- 78% Suburbs, Midsize	improves lives, builds community, workforce development, leads individuals, families and the region to prosperity, prepare students to be responsible and productive citizens, catalyst for change

CC	Interviewee's Description	Community College Geographics & Demographics	Keywords from the Community College Mission Statement + Goals, Values and Priorities
8	Linda Foster (LM) SBDC Regional Director at CC		
9	Amber Bryan Assistant Business Professor 8+ years with CC	Student Population 22,000+ Hispanic- 36%, Black- 18%, White 33%, Asian – 3% 24 and Under- 66% Large City	open access, inspires students to contribute to the local community and global society, student success, social, environmental and economic sustainability (through resource stewards), economic cultural vitality and partnership, service, integrity, inclusion, innovation.
10	Dr. Dennis Brooks Associate Business Professor 12+ years with CC	Student Population 22,000+ Hispanic- 36%, Black- 18%, White 33%, Asian – 3% 24 and Under- 66% Large City	open access, inspires students to contribute to the local community and global society, student success, social, environmental, economic sustainability (through resource stewardship), economic cultural vitality, partnership, service, integrity, inclusion and innovation.
11	Dr. Robert Sikes System President 20+ years with CC	Student Population 14,000+ Hispanic- 10%, Black- 42%, White 29%, Asian – 3% 24 and Under- 48% Large City	learning-centered environment diverse, attain their educational, career, personal goals, to think critically, to demonstrate leadership and to be productive and responsible citizens. Student success, innovative leadership, lifelong learning, cultural diversity. Responsibility to community, state, nation, and world
12	Laura McDonnel Executive Director of Program 1+ year with CC	Student Population 51,000+ Hispanic- 71%, Black- 14%, White 5% 24 and Under- 73% Large City, Area Population- 2.7M	accessible, high-quality ed economic, cultural, civic leadership advancing a diverse, global community international perspective that makes our students civically engaged and globally competitive evidence- informed decision making, innovation and efficiency, community partnerships, development of relevant workforce, cultural and civic

CC	Interviewee's Description	Community College Geographics & Demographics	Keywords from the Community College Mission Statement + Goals, Values and Priorities
			programs, environmental awareness, intentional sustainability, enriching our community
13	Gary Baker Executive Vice President of Workforce 20+ years in CC	Student Population 23,000+ Hispanic- 7%, Black- 24%, White 55% 24 and Under- 60% Large City	accessible and affordable promote individual development and improve the overall quality of life in a multicultural community. Service, student success, academic quality, cultural enrichment, and economic development, innovation, and community responsiveness. Diversity, integrity, academic excellence, and achievement of individual and institutional goals.
14	Walter Nelms Director of the Center 6+ years with CC	Student Population 2,800+ Hispanic- 7%, Black- 4%, White 84%, Asian – 1% 24 and Under- 73% Remote	comprehensive educational opportunities, learner success, community engagement, and leadership, collaborative partnerships that prepare students, businesses, and communities for success in a diverse, global society, student success and enrollment, improve student and stakeholder experiences, accessible, inclusive, supportive, engaging, and safe for all, creating an inspiring and engaging culture for all employees, forge and support strong partnerships with schools, businesses, and communities by developing tailored services and programs designed to respond to the educational, workforce, and economic needs of today and tomorrow, enhance teaching by supporting faculty development informed by best practice, focused on promoting innovation

CC	Interviewee's Description	Community College Geographics & Demographics	Keywords from the Community College Mission Statement + Goals, Values and Priorities
15	Martha Clark Program Instructor 1+ year with CC National Leader	Student Population 2,800+ Hispanic- 7%, Black- 4%, White 84%, Asian – 1% 24 and Under- 73% Remote	comprehensive educational opportunities, learner success, community engagement, and leadership, collaborative partnerships that prepare students, businesses, and communities for success in a diverse, global society, student success, enrollment, improve student and stakeholder experiences, accessible, inclusive, supportive, engaging, and safe for all, creating an inspiring and engaging culture for all employees, forge and support strong partnerships with schools, businesses, and communities by developing tailored services and programs designed to respond to the educational, workforce, and economic needs of today and tomorrow, enhance teaching by supporting faculty development informed by best practice, focused on promoting innovation

Community College Role(s) – Cross-Case Analysis

The first research question explores how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability. A qualitative, single case study, accompanied by semi-structured interview questions, was employed for the exploration. Originally, the participant sample for this question was targeted toward MSI program leaders. However, community college MSI leaders also provided relevant and thoughtful insights. Therefore, some cross-pollination between responses of the two audiences does exist.

In general, the participants expressed a belief that community colleges do, in fact, play a critical role in addressing wicked problems of sustainability. Dr. Fox, a program leader with 26 years of experience in complex collaboration for wicked problems explained:

> I think we're very early in the recognition, frankly, that higher education plays a role in these sustainable development goals, which is a little bit discouraging in the states because they've been around for a while, but it certainly is a fertile opportunity for community colleges to get engaged in this work. I think we've been slow to the mark in doing this… because again, these development goals have been around for a long time.   I started working on clean energy issues in 1973. I mean that this was all predictable in 1970.

While examining data sources related to research question #1, five roles emerged, including: the role of educator, strategic leader, local convener, economic development partner, and an over-arching role of grant partner, which threads through all other roles. As a reminder, the term *wicked problems of sustainability* is used interchangeably with *Sustainable Development Goals* (SDGs) since the SDGs are representative of a majority of wicked problems commonly referenced throughout the literature.

MSI Community College Role #1 – Role of Educator. The role of educator was mentioned broadly across nearly all interviews. This is expected, as community colleges are educational institutions. Ms. Love, an SBDC business counselor with over ten years of community college experience, explained the connection between education and wicked problems, stating:

> Being able to offer affordable education is at the root of many wicked problems, because that is where people can earn more money to provide for their family, to take care of hunger, to have stability in our local economy through job creation.

When community colleges serve in the role of educator to address wicked problems of sustainability, the activities involve education and training with a special emphasis on incorporating the lived experiences of underserved populations. The participants explained that

within the role of educator, the college's curriculum should include the entrepreneurial mindset

with problem-based learning, interdisciplinary projects, complexity science, cross-campus SDG

curriculum, sustainable entrepreneurship, systems thinking, design-thinking, and unintended

consequences. Additionally, the participants referenced the activities of recruiting mentors or

participants, executing programs and managing projects, and igniting a sense of agency for

changemaking as activities the community college educators often took on. This section

contains additional details regarding the perspectives of the interviewees.

Educating and Training. As previously mentioned, educating was a common

activity referenced by the interviewees. In addition to providing traditional for-credit courses,

community colleges also provide short-term training through non-credit, otherwise known as

career-credit, courses. For example, Ms. McPherson, a Chief Executive Officer of a scalable

program for homeless students with a rich background in entrepreneurial problem-solving for

wicked problems, stated:

> [Our community college] offers classes onsite here and our kids have [access to] dual
> enrollment. Once they're in their senior year [in high school] they just sort of seamlessly
> transfer into the community college, and it works beautifully for them. They then
> typically transfer to the local university after two years. We introduce our students to the
> concept of higher education, by partnering with our community college.

While Ms. McPherson's program is not what many may consider a traditional

entrepreneurship program, it nevertheless relies heavily on multi-stakeholder collaboration and

entrepreneurial problem-solving through social innovation. She acknowledged that her design

background informed much of her work in social innovation. Her organization can serve up to

300 homeless students each year. Another participant, Ms. Foster, an SBDC counselor at

another college, described the educational activities her program provides business owners and

prospective business owners in her local community. According to Ms. Foster:

There are only five of us and we handle close to 600 clients a year and have nearly 4,000 counseling hours a year. We also host over 150 training events annually and half of those training events we teach ourselves.

Incorporating Underserved Populations. Community colleges educate millions of students each year and are generally comprised of a much more diverse student population. Although diversity is often accompanied with increased barriers, overcoming adversity can build resilience and tenacity. In fact, several interviewees acknowledged the value of incorporating the lived experiences of these underserved populations within the educational models, as appropriate. Ms. Pascal, the Director of Innovation on a large multi-campus college with an extensive background in social innovation, described the concept:

We place a really high value on lived experiences. By drawing on that lived experience of the student, you can build a more effective, more aligned initiative to address a [wicked] problem. Because community colleges tend to bring students who have a much more diverse set of life experiences and often have lived experiences of wicked problems, they are well situated to use those lived experiences in a way that helps [students] step into their role as a changemaker and therefore fulfill their potential.

The lived experiences she described include poverty, hunger, inequality, and discrimination, to name a few. Since a large proportion of the students experience barriers, an opportunity exists to teach students how to embrace their experiences as an opportunity to help other students and the broader community. Similarly, Ms. McPherson explained why incorporating the lived experiences of underserved populations is so critical:

[The community college] deploys the resources and the personnel to build relationships with the students so that they feel a sense of community and have a stable, older, consistent person in their lives to rely on, to keep them going to the best of their ability. [This is] someone who understands their circumstances and has lived experience that they can connect to. And that's where we're having a struggle. Because when our kids feel like they're alone in the world, they give up.

In other words, when the student's lived experiences are embraced, not only are they being empowered, but they are also provided an opportunity to strengthen bonds with other

students and faculty. For this reason, underserved audiences should be viewed as a powerful

opportunity to address wicked problems of sustainability that most impact the student.

    Teaching Entrepreneurial Mindset. The concept of an entrepreneurial mindset was

mentioned by nearly every participant. Most referred to the mindset as encompassing a series of

competencies that enabled individuals to navigate and improve the systemic wicked challenges

they faced. For example, Dr. Fox explained:

> If you're really trying to transform a system or design a new system, based on assets we currently have access to, that requires a team of people. You can't really do that by yourself. So, this whole notion of individual entrepreneurs is I think, hopefully fading. We need an entrepreneurial mindset, which is essentially an experimental mindset with the ability to focus on continuous experimentation to generate data so that we can learn. This runs counter to many of the hierarchical structures that currently hold us back. If you reflect on a university for a minute, all of the incentives within the university are run vertically but the problems are horizontal. The complexity is horizontal. I imagine the community colleges [are] too. The good news is that these are mindset changes. Entrepreneurial thinking is continuous experimentation and willingness to embrace the ambiguity. That's inherently there. That's just the nature of things. And so entrepreneurial thinking has to permeate everything from accounting to government policy. We need everybody to be thinking entrepreneurially but that does not mean everybody's going to go out and start a new business. That's not what entrepreneurial thinking is. (Entrepreneurialism) is evolving. In Europe, it has been holistically looked at for quite a while, you know, but I think America is starting to evolve beyond just starting a business, just the conversation. It's more powerful than that. That's my own opinion.

In addition to embracing ambiguity and experimentation, Mr. Nelms also described the

importance of growth mindset, persistence, problem-solving, and adaptability to change. The

entrepreneurial skill sets are so important. In fact, the entrepreneurial mindset curriculum is used

in the student success course, which every student at the college takes. In addition, he explained

that these entrepreneurial competencies are aligned to skills required for success in the Fourth

Industrial Revolution, particularly post-COVID. Ms. Pascal added:

> The entrepreneurial mindset is extremely important to change making. So, [we embrace] the notion of separating the entrepreneur and entrepreneurial mindset just enough, so that people can see that entrepreneurial mindset belong to every domain, every

discipline. You could be a philosophy professor and still have an entrepreneurial mindset in your approach. It's not just for business students.

Planning Interdisciplinary Projects. Wicked problems are so complex that they often require coordination between different programs of study. Therefore, incorporating collaborative teamwork through interdisciplinary projects is a critical activity within the educator role. In addition, not all students aim to be entrepreneurs, and therefore, may cognitively self-select out of the conversation. Mr. Aguiar described this scenario:

> If a faculty member approaches an engineering student about entrepreneurship, the student's mind often translates that to starting a business. If [the student doesn't] want to start a business, they disregard the program. Alternatively, if the faculty member approaches the same student about innovation, the student often listens. We know that innovation and entrepreneurship are [often] used interchangeably but we can engage many more students by re-framing the course, whether it is design, exploration, innovation, or experiential learning. The actual course work is an interdisciplinary progression. We start with science, then use engineering, and sometimes we have to be a little bit artistic, before we move to the business application.

By framing the project across several programs of study, students are more likely to self-select in and engage with innovative ways of thinking when addressing wicked problems. Interdisciplinary projects provide an opportunity for students to tackle large, systemic challenges through a lens of entrepreneurial problem-solving for societal impact, rather than the siloed perspective of solely starting a business. While the student may ultimately choose one career path or the other, interdisciplinary projects often provide the broader experience of both, equipping the student with more career options.

Teaching Complexity Science. Complexity science is a core skill for addressing problems of sustainability, such as poverty, hunger, and climate change. For this reason, several participants advocated for embedding the basics of complexity science within the community college curriculum. Doing this will provide the students with a practical edge in society, enabling them to contribute solutions for addressing wicked problems within their local

community. Dr. Fox, the Founder of a university-based program teaching complex collaboration

through agile strategy, described the role of community colleges in addressing wicked problems:

> [Community colleges] have two roles to play: 1) They can teach the skills of managing complexity and 2) They can actually work directly with practitioners, and generate this actionable knowledge. In community colleges, you're going to find more people who are more attuned to that kind of knowledge.

Dr. Fox was referring to the fact that community colleges are less research-focused and more

practitioner-focused. Understanding complexity science enables everyday citizens to more

effectively address global challenges at a local level. Considering the grand challenges faced by

everyday Americans, it is time the basic concepts of complexity science are democratized by

incorporating complexity science broadly within the community college curriculum.

   Teaching SDG Cross-Campus Curriculum. The Sustainable Development Goals

(SDGs) are essentially a framework of interrelated wicked problems. If community colleges

desire to educate society to address wicked problems, holistically understanding the framework

is critical.   For this reason, several interviewees stated that all students on campus, as well as

community partners, should have exposure to the holistic SDG framework. Ms. McPherson, a

program leader with broad experience using the SDG framework globally for social innovation,

agreed that community colleges are well suited for incorporating the SDG curriculum:

> Many community colleges have programs of study and faculty that influence [the various SDG issues]. They could be impactful influencers in place and space, both from a resource perspective, but also that their students are going to go out there and do something. The [SDGs] are basically an extrapolation of the social determinants of health. The social determinants of health are really about what communities need to do to make it easier for people to have a good stable life. People who are not affected by trauma, poverty and injustice, have to decide that it matters to them and to do something in their professional pursuit addressing some of those issues. Community colleges can teach that as part of the general coursework. For example, you want to be a nurse. Fantastic. How do you learn about being a nurse and also learn about what health inequities and social disparities mean for health in your region, and then go on to figure out how to use some of your time and talent to address those issues? [The SDGs] should be holistically taught to every student but especially in healthcare intervention,

technology intervention, education, and teaching. Basically, anyone who is pursuing an education degree should be taught trauma-informed care. Anyone who is learning to become a nurse or a doctor should be taught what kinds of health disparities exist among various ethnic and racial groups and how they need to be going into that work prepared to understand and address those inequities. People who are going into the technology space need to be thinking about making space for people who are underserved to have room to enter those fields.

According to Ms. McPherson, the SDGs also serve as an ideal framework for problem-based learning designed to address wicked problems:

I think the benefit of the SDGs taking the primary place in the conversation is that they're goal oriented. They're about setting some sort of directional pursuit and are less theoretical. They're more about how do we understand these underpinning issues and then create a way to address them. So, when you think about our community colleges, what that again gets to is the beginning of a framework for incorporating it into the curriculum, right? If there are goals around health and equity, then that also means you can extrapolate from that a way of teaching and learning that is less theoretical and more practical in nature. I can see the benefit of that because they [the SDGs] are about, 'what do we do about it?' versus the social determinants are more about the problem messaging. SDGs, on the onset, [were] more applicable for environments that had really glaring holes in protections for people who are struggling in ways we don't in the United States. I do think there's value in community colleges [creating] a measure of priority around them as almost an institutional value that again drives the way students are learning. Over time, that could literally change the way human beings are educated.

Dr. Sampson expressed her belief that the UN sustainability goals are "the key for your children and mine to have a safer world. And it's a unified language. It makes so much sense. What problem do you want to solve"?

In general, the SDGs are a holistic framework that exposes students to issues in the world around them and how they might contribute to making it better, both locally and globally. It also provides an opportunity for teachers to prompt students to conceptualize, evaluate, and if appropriate, act on their ideas for positive change.

Teaching Sustainable Entrepreneurship and Systems-Thinking. Sustainable

entrepreneurship is the type of entrepreneurship most aligned with addressing wicked problems of sustainability, as well as the Sustainable Development Goals (SDGs). It emphasizes the three pillars of sustainability including economic, social, and environmental, also known as the triple-bottom line. Systems-thinking is a core competency of sustainable entrepreneurship. For this reason, the two are listed together. Systems thinking is considered valuable when addressing the interconnected issues common in a post-COVID environment, as it enables connecting dots between seemingly interconnected issues. The two were not mentioned during the interviews, likely due to the fact that they are quite emergent in this space.

    Teaching Design Thinking. Design thinking is a creative problem-solving process that enables groups to better collaborate through the use of empathy, brainstorming, discovery, and iteration. The process was cited by a majority of the participants for addressing wicked problems of sustainability. For example, Ms. Pascal emphasized, "Foundational education and skill building for creative problem-solving, including design-thinking, often used in social innovation, could be helpful to any one of us and should be accessible to all of us".

    Several interviewees recommended that design thinking be included in the broad curriculum when community colleges play the role of educator for addressing wicked problems. As an added bonus, students are encouraged to embrace empathy-led decision-making, which encourages them to consider the needs and pain points of others before making recommendations.

    Ms. Bryan, an Assistant Business Professor with 8 years of community college experience compared the power of design thinking with service-learning. Inspired by a TED talk, she connected the current polarized nature of America and how design-thinking could start to bridge some of the nation's divides:

[The presenter was] a social entrepreneur advocate and he said that he believed strongly entrepreneurship can heal the wounds of a divided nation, one social business at a time because people may feel angry, but they can come together around making their communities better, no matter what those personal disagreements might be between each other. [Another] great example of that is Jimmy Carter's initiative, Habitat for Humanity, I've worked on Habitat for Humanity initiatives before as a volunteer with people who are roofers. There were definitely political differences there. But where we bonded was getting together to build a home for somebody that was in need. I believe strongly that the design thinking center of practice will help to heal those wounds through different initiatives that we offer.

Informing About Unintended Consequences. While social and sustainable entrepreneurs often have good intentions, they may also not be quite aware of the unintended consequences of their solutions. For this reason, interviewees emphasized the importance of educating about unintended consequences. Ms. Pascal described the community college's role in informing students about this important aspect of addressing wicked problems:

[Our program at the community college] educates students to be aware of the unintended consequences. [The student] apprentices with the problem [using a] diversity, equity and inclusion lens [so they have] self-awareness [and are] really thinking about the full potential impacts of what they are doing.

Recruiting Mentors and Participants. Several participants described recruiting attendees and mentors as part of the role of educator when collaborating with multi-stakeholder partners to address wicked problems. Dr. Delgado explained, "There was a lot of work on development and training, and there's also recruitment… how to get people in. So, the community college could serve both [capacities]". Mr. Smith, the Chief Executive Officer of one program agreed, stating:

We wanted there to be people after the fact that could keep helping the teams. And that's why we were really looking for partners. We needed a physical location to run the class, but more importantly, we really wanted [community colleges] to recruit the mentors and the teams and also provide ongoing support.

Programs Execution and Project Management. Community colleges regularly execute programs for employers and throughout the community. Mr. Brand, a Vice President of

Corporate and Continuing Education with 24 years of experience in community colleges,

explained how the role of the community college changes depending on the broader community

context:

> [In my previous role], I was in a community college that was near a pretty large
> university. What I learned was the role of the land grant universities in fostering
> community wellbeing. In this context, we [the community college] became the
> executor. We were the ones that became the operations people who managed the projects
> and kept them on track and organized things and served as the executive officer of the
> operation.

Alternatively, he explained that in areas without a large university, community colleges

often play the role of planning and convening. This is important to note, as community colleges

and universities often partner for multi-stakeholder initiatives. Therefore, their roles may

fluctuate depending on the project and context.

Igniting Agency for Changemaking. A common programmatic goal of several

interviewees was to ignite a sense of agency for changemaking. In other words, it was important

for the students to be willing to take action to make the world a better place in some meaningful

way. Specifically, the participants noted the importance of promoting agency in the students as

an activity under the role of educator for community colleges when addressing wicked problems.

Ms. Pascal explained:

> We use the term changemaker instead of social entrepreneur, because change maker can
> mean a lot. It's a much bigger tent. An intrapreneur means they have to be inside of a
> company, whereas changemaker can also be outside. [Both emphasize] the sense of
> agency. Igniting that sense of agency [for changemaking is the goal].

MSI Community College Role #2 – Role of Strategic Leader. Several participants

described the role of the community college as a strategic leader when addressing wicked

problems. Dr. Sampson is the Chief Executive Officer of a national association that educates

and convenes entrepreneurial faculty and leaders at community colleges across the nation. In

2020, the organization launched their "centers of practice", a collaborative toolbox for tackling wicked problems. The center of practice topics involves design thinking, entrepreneurial mindset, equity and diversity, global entrepreneurship, making, student engagement, women in entrepreneurship, and workforce development. Additionally, there will be a media entrepreneurship center launching soon. The various centers are focused on generating issue-related outcomes across one college or several, with the most robust being the design thinking center, which has a dedicated space on one campus. During the conversation, Dr. Sampson explained her perception of the community college role in addressing wicked problems through the centers of practice:

> I think the [community college's] role now regarding these wicked complex problems post-pandemic is to be very strategic... doing what you and I do a lot, which is to apply the entrepreneurial method and do an assessment. What is your bird-in-hand? If we had every single one of the 1100 community colleges come up with four or five of their bird-in-hand ideas, I think we could solve many of the wicked problems. If you look at community colleges as having the passion from people like you and me, having the resources of facilities, people, and students, how might they look at UN sustainability goals and deploy design thinking? They could do this and not spend a dime more. They could use internal resources to do it. That's what [our communities of practice] are designed to do. [They are] collaborative efforts led by a member college that coalesces around a specific issue and aims to co-create new resources and collaboration around that topic.

When community colleges serve in the role of strategic leader to address wicked problems of sustainability, common activities include influencing dialogue and communication and acting as a fiscal agent and partner, local informer, supporter of diversity and equity, thought-leader, post-COVID healer, mobility generator, structural leader and community pillar, architect/engineer, and promoter of positive stories for funding. The quotes provide a more in-depth description of each associated activity.

Influencing Dialogue and Communication. Addressing wicked problems of

sustainability requires carefully influencing dialogue and communication, which is a role the

community college often plays. According to Mr. Baker, An Executive Vice President of

Workforce with over 20 years of experience in community colleges:

> Community colleges are structural leaders in our community. Both within their
> institution and throughout our community they are influencing dialogue [regarding
> wicked problems], such as racial injustice and inclusion. [They also influence] how
> students can be [better] prepared and [inclusively] connected to work.

> Another participant added:

> [Community colleges are] impactful influencers in place and space, both from a resource
> perspective, but also from a, 'my students are going to go out there and do something'
> perspective.

Fiscal Agent **and Partner**. Addressing wicked problems typically requires a partner

willing to act as the fiscal agent. After all, grant funding is often secured in support of tackling

the challenge and the finances must be managed responsibly. The interviewees offered examples

of how community college played the role of a responsible fiscal agent and partner. Statewide

Technical Assistance Provider for the program, Ms. Squire, explained:

> As the fiscal agent, we could ensure that the money would not be simply focused on
> rooms and tools. That would have been a colossal failure for the initiative. We have
> rooms with tools. We don't need rooms of tools. We need community.

> Another participant, Ms. Mcpherson stated:

> All of the grant funding that comes out of the [parent program's] foundation goes through
> the community colleges. So, they provide sort of the infrastructure to hire, pay, and
> manage the teams from an HR standpoint.

Local Informers. Community colleges are deeply embedded and typically positively

perceived by the local community. They are also knowledgeable regarding social, economic,

and political forces that shape the community's culture. Dr. Mattox contended:

> We don't know what a community needs. The community college knows that area much
> better than we do and what's needed. They are in a position from an education
> standpoint to have a pulse on the needs for training.

Supporters of Diversity & Equity. Diversity and equity have become central topics of

discussion in America during recent years. The pandemic only accelerated the inequality that

already existed. Community colleges are common supporters of diversity and equity, which

naturally aligns with the mission. Ms. McPherson affirmed that:

> Community colleges have a really interesting community of people who are from all
> walks of life. There's just a breadth of diversity in that environment that I've observed
> which should be maximized as a way of putting people at the center of learning from
> each other and then turning outward to apply whatever they're learning to solving
> problems.

Similarly, Ms. McDonnel described how her community college supports diversity and

equity. In addition, she explained how actively supporting minorities benefits the entire college:

> We are a resource to minorities and minority-owned small businesses. We try to engage
> with small business owners that are within the full spectrum, whether its women-owned,
> African-American-owned, Hispanic-owned, Asian-owned. The more international and
> diverse we are, the stronger. Diversity is our strength.

Thought-Leader. Addressing wicked problems requires thought leadership, which

most community college leaders are quite accustomed to. According to Ms. Henderson:

> I think that [community colleges] are leaders within the fund, thought leaders within the
> fund, and drivers within the fund of our agenda. But I think that their influence is much
> broader here than just within the fund.

Similarly, Mr. Baker emphasized the importance of the community college contributing

as a thought-leader:

> I think [community colleges play the role of] investor, convener, and thought leader.
> Thought leadership is key. It is viewed as a significant contributor and thought leader in
> not only identifying solutions to those challenges our region faces, but also providing
> solutions and outcomes that are measurable and definable through metrics and
> accountability systems. It also helps to participate in the definition and prioritization of
> challenges and issues. I think community colleges are going to be the key answer to a lot
> of the ills that [we will face in the coming years] and the challenges in a post-COVID
> environment. [COVID] is going to be around, in my opinion, for the next two, maybe
> four years. And so, notwithstanding vaccines or remediation, we have done significant
> damage as a result of COVID to our infrastructure, both mentally, physically, and

socially. It's going to take us a while to recover. I think community colleges [through] entrepreneurial-ism [and in partnership with this program] can be thought leaders in addressing [SDGs] if we do it collectively through sector partnerships, as opposed to separately. For example, in manufacturing, healthcare, and information technology, if we can collectively address these issues, we save resources, [and also] expedite the solution. We accelerate the solution, and that's [the role] I'm hoping the community colleges will be able to play.

Healing Post-COVID. COVID-19 was a topic brought up during several participant

interviews. This is no surprise, as the central wicked problem across the globe involves the

pandemic. National association leader, Dr. Sampson, thoughtfully described the community

college as a healer post-COVID:

> We have the opportunity, as community colleges to heal a lot of social issues. Because if you look at the people that we serve, they're the people that have been really damaged further by the pandemic. They were left behind before. But now they're even further behind. You know… people of color, immigrants, veterans, and people with disabilities.

Mobility Generators. Several participants described community colleges as generators of

social and economic mobility. This is logical, since many people attending community college

are seeking some type of mobility. Ms. Mcpherson, an expert in systemic change, mentioned the

power of community colleges acting as generators of mobility:

> I think that the community colleges are, in most communities, one of the most impactful generators for economic mobility. [They are] not always perfect in that objective but have the potential to serve in that function. That gives them entre and should give them I to any conversation about economic mobility in our in our communities, I think.

Structural Leaders & Community Pillars. In every region exists institutions and

organizations that serve as pillars of the community and/or structural leaders. During the

interviews, community colleges were described as just that- structural leaders and community

pillars when addressing wicked problems. As Ms. Pascal acknowledged:

> Community colleges are pillars in the community educating a majority of the industry sectors, whether it's law enforcement, education, or healthcare. If we are going to solve these problems in the community, the community college plays an important role in introducing the SDGs across all industries. I think introducing the SDGs and the work

that it represents to our students as they go through their education here [at the community college] absolutely can transform this community.

Architect/Engineer. Participants compared the role community colleges played in

addressing wicked problems in terms of building. For example, some interviewees mentioned

the university acted as a builder, while the community college acted as the architect and

engineer. Dr. Taylor stated:

> I would say that the college is essentially the architect. We're like the architects or the engineers… at the college level, but I could actually see it being at a systems level.

Promoter of Positive Stories for Funding. Many interviewees described positive

stories that came out of the initiatives, which were later leveraged for fundraising. For example,

Dr. Brooks, an Associate Business Professor with over 12 years' experience in community

colleges, explained, "[The program] gives [leadership] something to talk about when they're out

and about," Ms. Bryan, an Assistant Business Professor with eight years of experience in

community colleges, added:

> We are always getting called now for the presidential dinner showcase. [They ask,] can you send us some of your students to showcase what they're working on? I think that's been even more with the foundation for fundraising. I think they get it first because they had to.

Mr. Smith agreed, stating:

> Colleges that engage with entrepreneurs may also benefit in the future through donations, employer board participation for curriculum, and access to new adjuncts. Mr. Saddle, an instructional designer with over 19 years of community college experience, explained one of the biggest success elements was the 'everyone's a maker' project. This created formal and informal networks collaboratively making, which led to internal and external funding. Businesses were excited to participate in the entrepreneurship maker workshops.

Mr. Saddle added:

> [Storytelling is also valuable]. You leverage it for the board and you leverage it for other sources of funding, and you leverage it with getting students on board. You can leverage it with employers and with getting other faculty excited…. [in other words,] adoption by

attraction…. In one video, students described how they gave back and solved problems. We profiled some of the high-performing spaces in the network. We were considered and still are considered in the community college system, a high-performing in a space that people point to because of the curriculum.

Ms. Bryan emphasized the important relationship with the college foundation:

We developed a really great partnership [with the foundation], because folks who are seeking money, love good stories. And so, one of the things that I think we has been very successful for us is documenting stories of all kinds. There's nothing that opens the checkbooks of philanthropists more than pictures of students doing [innovative work]. And then expanding that story and telling that story of how this is going to either help them in their transfer or how they're spinning up a new business because of this. We're obviously a big part of every tour and every new client they want to bring in. They want it because if you come into our space, it's a vibrant, buzzing space, there's weird stuff happening. Energy is what people who want to give money or support the college in other ways [need to see].

MSI Community College Role #3 – Role of Local Convener. The participants overwhelmingly agreed that community colleges should play the role of local convener when addressing wicked problems of sustainability. Dr. Sampson, the Chief Executive Officer of a national association for community colleges suggested:

With over 1100 community colleges sitting virtually within a short drive of every single, urban, rural, and suburban community in the country with their open access mission, they have a huge opportunity to be catalysts and conveners of conversation and action toward addressing wicked problems.

This section consists of the community colleges' role of convener as described during the interviews. Additionally, the activities involved with serving in the role of convener are explained. When community colleges serve in the role of convener to address wicked problems of sustainability, the participants convene conversations, facilitate conversations, build consensus collaboratively, act as community problem-solvers, engage inclusively with integrity, promote learning and certification, engage with the local community, offer safe spaces, span boundaries,

host events, and act as catalysts of change. The literature and interviews provided a more in-

depth description of each associated activity.

Convening Conversations. According to the participants, community colleges serve as

conveners when addressing wicked problems. Ms. Foster asserted:

> I definitely see the college as a convener just because they have so much programming.
> There are so many opportunities for the community to be involved, whether it's
> businesses, personal, students or adult learners. There are youth programs for the
> summer, and across all age groups.

According to Mr. Brand, a Vice President of Corporate and Continuing Education with

nearly 24 years of experience in community colleges:

> [In communities with no anchor institution], the community colleges became the [trusted]
> conveners for the community and essentially play the role of the land grant in the local
> community. So, we have to build and maintain our skill sets around convening, solution
> building and innovating, but also, we need to guard that trust and make sure we
> deliver. Community colleges can catalyze conversations but I don't see that happen as
> much. I think that's an area of opportunity. You see that more out of four-year
> institutions for variety of reasons, but I think that undersells and underplays the role that
> many community colleges might play.

Facilitating Conversations. Several participants also described facilitating conversations

as an activity within the cluster role of conveners.   Ms. Flaherty's opinion was:

> I think understanding what different organizations' strengths are and what they bring to
> the table can create an environment where you're leveraging each other's strengths versus
> duplicating efforts or stretching your resources too thin. Community colleges can act as a
> facilitator in those conversations.

Building Consensus Collaboratively. During the interviews, participants described one

activity of community colleges as building consensus collaboratively. Dr. Fox, the Founder of a

program for complex collaboration with over 26 years of experience, emphasized:

> [Community colleges] have to collaborate and we have to create value through that
> collaboration. This program is sort of an open-source operating system for the civic

economy. Additionally, [Using this program, community colleges] can come together quickly and address complex challenges and not get all wrapped around the axle.

Community Problem-Solving. One of the most commonly mentioned activity during the interviews was community problem-solving. Several of the interviewees described their entrepreneurial programs as collaborative strategies, which is the preferred coping strategy for addressing wicked problems using multi-stakeholder initiatives. This win-win mindset is considered the most effective strategy when the goal of collaboration during stakeholder dialogue is problem-solving. Mr. Sikes, a systemwide president stated, "[Community colleges] are the people and communities, problem solvers". Similarly, Ms. Mcpherson acknowledged:

> Community colleges act as conveners but I also think there's a real opportunity for community colleges to [focus on] educating [internally] on what convening means around building community, because a lot of community colleges operate on the fringe of a community almost with an inferiority complex. Especially when they're in the same space or in shared space with other bigger universities. So how do we really harness that? How do we go ahead and own that and build out the practices that it takes to be a really effective convener without being saddled with that sense of inferiority, right? Like, okay, fine. We're not Virginia Tech, but we are the guys that you go to when you want to figure out how to build consensus and strategy around solving social issues. We are the guys you go to, when you want to have that conversation, how do we become a laboratory for social solution development? That's what community colleges can do.

Finally, interviewees provided specific examples of wicked problems of sustainability that community colleges are tackling. For example, Dr. Fox noted:

> Work that we are starting this month with the one group of community colleges is going to be focused primarily, I think, on regenerative agriculture, which deals with food systems.

Engaging Inclusively with Integrity. Engaging inclusively with integrity is another activity mentioned during the interviews. For example, Dr. Sampson, the Chief Executive Officer of a national association in academia suggested:

I think [community colleges] are leading with intention and integrity. We all are a work in progress. We all try to lead with integrity and it's something that's aspirational. We all fall, fail and mess up, lose our tempers, and are imperfect. But I think that aspiring to lead with integrity and to include people intentionally… and to listen… that's how you heal. That's why I think healing is so important because I guarantee you whatever the outcome is of the election, I pray that people stay safe and it's going to be really tough, you know?

Learning and Certification. Participants advise community colleges to embrace the role as a convener from the perspectives of both learning and certification. Mr. Brand, a Vice President of Corporate and Continuing Education at a community college with over 24 years of experience, explained that due to COVID restrictions, their department was not able to attend conferences this year, so they had some professional development funding left over. With that funding, he invested in certification for complex collaboration.

I sent my entire business services team (to complex facilitator training for this program). Now, these are my sales people [so they] go out in the community and work with businesses. There's 9 or 10 of them. And we were in the process of putting them all through this collaboration training because it became clearer and clearer to me that it's fine that I know how to do this stuff. And then I can facilitate groups and although everybody's not going to be facilitating groups, they're always trying to collaborate network connect, and leverage.

Community Engagement. Participants agreed that when community colleges are acting as the convener for addressing wicked problems, community engagement is a common activity.

According to Ms. Massey:

One thing that I noticed about community colleges versus universities and why I think they're particularly well-positioned is that built into a community college structure are all these community engagement mechanisms. For example, we can't start a new program unless we have a board of business owners from the community who are going to comment on the business curriculum that we're developing, which typically doesn't exist in many university settings, whereas it's very much the norm in a community college setting.

Similarly, Dr. Fox agreed:

[In community colleges] there are engagement professionals who are our staff, usually not faculty, but staff people who, who are charged with the responsibility of engaging the community or the regional economy actors and in the regional economy.

Finally, Ms. McDonnel added:

> [Community colleges play a] very important role for community engagement and innovation. Although we're not a research-based university, we are an academic institution that has a physical presence in eight of the major pockets of our community.

Offering Safe Spaces. The participants cited 'providing safe spaces' as an activity the community college provides when addressing wicked problems of sustainability. In fact, many participants expressed this sentiment. For example, Mr. Aguiar, a Founder and Director of an invention program, explained:

> In case of an emergency, we look to our [community] colleges to be the safe space [for students]. They play that role in the community, as well. Right now, we're in a crisis and the college had been at the forefront of providing support to our community. For example, we have a combination of the pandemic and we were also dealing with forest fires. Our colleges were the shelters for our community, that was a place that people knew they can go. It was a safe place while [also] helping people bring in a higher income than they were previously bringing in.

> Dr. Fox, the Founder of a program for complex collaboration, offered a rich perspective

for why community colleges should be considered safe spaces for complex collaboration by using civic engagement as an example of a wicked problem.

> One of the first rules of this program is to create a safe space for deep, focused conversations. One of the lessons of our democracy, which we have ignored is that we have to have these civic spaces [such as community colleges] and they have to be safe civic spaces to do complex thinking together. In Washington DC, [where I use to work,] nobody was trying to solve problems. They were just trying to win elections. And there's a fundamental difference between campaigning and governing. These are two fundamental differences and what we've allowed to happen is our capacity for governance has largely collapsed as we've allowed election mindsets to set in, and everything becomes an election. So, we have to rebuild that. We can disagree with each other but it's not a blood sport. Governing and democracy is not a blood sport. And the fact that we have pundits and media outlets that think it's a blood sport is a problem. If we don't present an alternative, we will collapse. There is a wonderful book called Why Nations Fail by two economists, one from Harvard, one from MIT. They make the point that nations fail. Not because their markets fail, but because their civic institutions fail. And when the civic institutions become not inclusive, but extractive you're on the path to failure. And right now, the United States is on the path to failure because our civic institutions have become extracted. People are trying to figure out how to make money

with this stuff. We're not going to change this by changing Washington…. We're going to change this at the local and regional levels. And that's really why community colleges are so critically important and universities are so critically important because the legacy that we have in this country is that everyone is within a two-hour drive of a campus of some sort. There is no institution within our civic economy that has as much potential [than a university and/or community college campus].

Dr. Sampson also described the community college as a, safe space:

I may not feel comfortable walking onto the Princeton University [campus] for a dialogue. I didn't go to an Ivy league college. I had to work really hard to get good grades. I was creative, but I was not naturally a student until I got into graduate school where everyone pretty much got A's, including me.

Ms. Mcpherson described her program in collaboration with community colleges as a

safe space for students experiencing the wicked problem of homelessness.

Some of our students will participate in normal high school coursework and then enter into a different classroom [on site] that is their collegiate coursework. And they do that [here on site] because that's where they're safe. You have to remember that our kids don't experience safety very often outside of the four walls of our school. And so, the best thing we can ever do is introduce them to the world by starting where they're safe. So, once they build a connection to their collegiate environment and start to build relationships with their professors, it becomes much more comfortable and easier for them to begin to transition to the collegiate campus environment. And that works really well.

Spanning Boundaries. Ms. Squire described the activity of boundary-spanning as one

role the college played during the program.

[Our team member] connected with a new startup in the Bay area called Kumu and everybody did Kumu maps. Through the process of doing the Kumu [ecosystem] map, we wanted the college to look up from outside their walls and really think about who was going to make their students successful.

Hosting Events and Programs. Several participants mentioned that community colleges

often host the events when partnering to address wicked problems. Dr. Maddox, a National

Director for an economic growth focused business program, explained:

[Community colleges] were the physical host for the program, or at least until March [when COVID hit] had been the physical hopes for the program right now, we're a hundred percent virtual and will be at least to kick off 2021. It [the community college

role] varies site by site but I think the consistent thing is they provide a home for the program. They provide the infrastructure for the program to both be delivered physically and then for the team to be able to function.

Acting as a Catalyst of Change. The role of change catalysts is critical to addressing wicked problems of sustainability, which is reflected during both the interviews and throughout the literature. For example, Boone (1992) described community colleges as catalysts. Similarly, both Dr. Taylor and Ms. Sampson described the community colleges as both "catalysts" and "change agents".

MSI Community College Role #4 – Role of Economic Development Partner. During the interviews, participants described the role community colleges through economic development as including the following activities: revitalizing communities post-COVID, triaging businesses post-COVID, modeling sustainability, creating jobs, supporting entrepreneurship-led economic development, increasing tax revenue, pipelining talent, attracting and retaining, supporting main street businesses and reducing entrepreneurial risk. This section contains an explanation of the activities involved with serving in the role of economic development partner.

Re-vitalizing Communities Post-COVID. Participants described re-vitalizing communities as an important activity the community colleges play when addressing post-COVID challenges. Ms. Flaherty, the National Director of Engagement and Partnerships for an economic development-focused program, asserted:

> Right now, we're seeing a lot of conversation and heightened awareness of the importance and value of job creation and community vitality. And it's really become apparent because of your main street businesses. For instance, when you're driving down a corridor and you see vacancy signs and all of a sudden, your dry-cleaning service and your favorite pizza place no longer exist. From a traditional economic development standpoint. We're seeing a lot of people look at how they can in the short term help those businesses either reopened or help those folks that are displaced, start new businesses or get the skills that they need to transition into another company. I think balancing the long term. So, you've got your immediate needs that need to be addressed in communities, but this is a great opportunity to rebuild better and differently.

Post-COVID Business Triage. Businesses have been devastated by COVID-19, due to

closures, restrictions, and new technological requirements. Participants emphasized business

triage as an activity crucial to the colleges when addressing complex post-COVID challenges.

Ms. Flaherty maintained:

> It's really important to have a network in place that can support the increase and activities associated with the startup space. [During Post-COVID,] we're seeing an increased need for education, training, coaching, and mentoring around reopening and everything from growing the customer base to how to keep your employees safe. So, how can you create an environment where you have an understanding of what your small businesses need and you're able to quickly act on those needs? We were able to help the communities that were working to quickly put-up information on their websites around COVID resources…. And how to navigate the PPE loans. We also have the ability to survey the entrepreneurs and really understand today what it is that they needed to survive and be able to then create dashboards or report out. The communities that were organized to do this type of thing before COVID could accelerate their conversations. Maybe they were having quarterly meetings beforehand. The resource organizations meant we saw many groups go to weekly or bi-weekly conversations so that they could real time react or act on the information and the input and the trends that they were seeing as they were taking phone calls and email inquiries from entrepreneurs and small business owners…. [Community colleges] act as that neutral party. Their role is to help entrepreneurs' triage where they're at and what type of assistance they need.

Modeling Sustainability. During the interviews, modeling sustainability was mentioned

by several participants as a role the community colleges play in addressing wicked problems of

sustainability. For example, Mr. Nelms, the Director of a community college program with six

years of experience, pointed out:

> When it comes to environmental, we've got every roof of every building we have [solar] and all of our extra land in the back is now solar and all the money from that solar provides scholarships to students to go to college. So, modeling these behaviors as an institution is one of the things that we need to do as well because we employ a lot of people. We create a lot of wealth in the community. We have a financial impact on the community. When we do something it's easily recognized. So, we do all those things in the environmental pillar. We don't always rally lots of people around, we often do it through modeling.

Ms. Clark, a program instructor at the same community college, described why

environmental sustainability is important to their rural community college.

> The climate affects our air quality, our soil, and our water systems. The ag system is completely dependent on the quality of the environment- the air, soil and waters. Without a healthy environment for [farmers] to grow their goods, then… that will truly be the death of our rural economies. So, [the community college] invested significantly in solar, and it's looked at to be one of the largest in the country for a community college, and it's critical for us to have that sustainable energy because of financial stability, but it also gets us off the grid. So, we're not as reliant on producing electricity from other sources and it's healthy and [offers] clean energy.

Ms. Henderson, an Executive at a fund program, described why modeling social

sustainability is important for regional growth.

> One of the things that we are currently [in partnership with the community college] trying to solve for is the idea that any job anywhere is exacerbating workforce problems, environmental issues and racial inequities. We have a talent initiative aimed at being more intentional and directed about where public incentives go, to support businesses around placement, retention and recruitment. So, it's about as a place-oriented strategy, but it touches many of these big systemic problems [SDGs].

Finally, Mr. Brand affirmed that:

> Our job [as community colleges] is mostly the first pillar… the economic, and then secondarily the social piece as a community convener. When you have a land grant, there's an emphasis on community more than it is on college. We try to be present at everything and when it's not happening, we convene it and facilitate it or we model it.

> ***Creating Jobs***. The participants often referenced the activities related to creating jobs

when addressing wicked problems of sustainability. For example, Dr. Mattox, recently met the

program's goal of training 10,000 small businesses. He explained:

> Even though we didn't set out on a social mission… we've provided a tremendous social impact for groups that would not typically have access.

Ms. Flaherty added:

> If you look at the trends and headlines about jobs.... they talk about how we're going to create 250 new jobs for your community over time. With the exception of a few like Amazon they're [actually] shedding jobs. They're not creating new jobs. It's your startups and small businesses that are creating the net new jobs. And that is quantifiable because you can pull information from QCEW and QWI…. the databases. They track the

minute you hire your first employee since you have to register and that's all trackable. So, we've been able to figure out a way to analyze that information and come to a net new job creation number. For instance, in one city we've worked with, over the last five or six years, young and new firms are creating between 14,0000 and 15,000 net new jobs every year.

According to a jobs report, the same organization in a different county but comparable in size found that in 2018, over 25,000 new jobs were created by firms less than 1 year old, with an average wage of $34,000. This accounted for 10% of the total new jobs. The report goes on to emphasize "startups play a significant role in job creation".

Entrepreneurship-Led Economic Development. The program leaders emphasized the value of entrepreneurship-led economic development. Ms. Flaherty contended:

> The thing with COVID that has really captured the attention of economic developers… All you have to do is drive up and down your main streets and see shuttered businesses and vacancies. And they start to really understand the importance of these small businesses.

Tax Revenue. Many participants went further, connecting education to job creation and ultimately, increased tax revenue. Ms. Clark, a community college program instructor explained:

> I think the community college plays a vital role in providing an affordable education so that people can either create jobs or find a better job in the community, so that their tax base stays here. Keeping people here is a really big issue for us.

> Ms. Flaherty noted:

> [Communities] are seeing a significant drop in revenues, in sales tax and in those kinds of things. Those are all measurable things, if a community feels that those are important to them.

Pipelining Talent. One of the programs, through the community college, actively served as a talent pipeline for public service jobs across the state. Dr. Delgado, a Systemwide Dean for Workforce Development, described the wicked workforce challenge the program aimed to solve.

There are 2.1 million students in the state, which had occupational openings to fill. If we could create alignments, we could identify a local supply chain or pathway for students to find occupations in need and in demand across the state. So, that somewhat solved the state's problem. They are the supply chain. The idea is that this is a talent management issue. So, the talent pool for recruitment would come from state employee or would come from community colleges.

Talent Attraction and Retention. Talent attraction and retention was also suggested by

several participants to be an activity within the community college's role of economic

development partner. Mr. Brand provided an example of this:

If you ask [any economic developer], 'what do you guys do?' They all say the same thing… 'we do two things. We do business attraction and we do business retention.' So, I'll say, 'tell me about those'. And so, if they tell you about business attraction, they will say, 'we completed this many RFPs. We had this many prospect visits. We had this many pitches. We had this many closed sales. We had this many jobs', they got all that. Okay, that's cool but tell me about business retention. And they kind of look at their shoes and they say, 'well, there's a golf tournament'. They don't really have a business retention strategy. This is a business retention strategy. This is the node where they can find skilled workers. That's a big deal.

Main Street Business Support. Several participants mentioned activities in which the

community college supported main street small entrepreneurs. Ms. Love, a business counselor

with 10 years of experience with the community college pointed out:

Some community colleges have incubators that the SBDCs are tied to. We don't but I think that's an opportunity we could fulfill, especially with a commercial kitchen. That's a struggle we have with a lot of our businesses that come in that want to do food trucks or sell certain items that can't be done under our cottage bakery law.

Similarly, Mr. Brand mentioned:

One of the groups I'm leading right now is an effort to bring together all of the entrepreneurial services for main street businesses and startups in a region to be able to increase access and quality of service and number of businesses served.

Reducing Entrepreneurial Risk. Community colleges can help reduce the risk of

entrepreneurship, thanks to multi-stakeholder partnerships. Dr. Sampson explained:

One of my favorite ventures is the Everyday Entrepreneur Venture Fund (EEVF), which was started by two people who put up a million dollars of their own money to test a proof of concept. I have to believe that there is wisdom in every community around the country. I think the inspiration of them wanting to change the world, not by giving a million dollars to X, Y, and Z, university, to name the gym or building after them, but to take a chance on the goodness and the efficacy of community colleges and of people in general to not let them down. A couple of staff members and myself meet with the EEVF founders every week. They put up the money, but they also have the time. They help us co-write proposals. We just pulled in a grant from Bank of America. They helped me write it. And I don't mean help me write by giving me two ideas. She drafted a big chunk of the proposal. So, I think about networks of networks and infusing capital. I don't mean that we have to give everybody a million dollars, but rather a modest amount of money. What we found through the EEVF's proof of concept is, if you give a would be entrepreneur, maybe someone from skilled trades or someone with a barbershop idea, if you give them anywhere between $7,000-$8,000 of capital, they can buy a barber chair, they can get a license, they can buy some tools and in six months, they can be cash positive. We've seen that with the proof of concept with 50 businesses. I think it's almost 60 now that are still in operation. We profile some of the entrepreneurs in the [2020] book, Impact ED. I think almost all of them are still in operation. Why? Because they got mentoring and support through the community college.

According to Dr. Sampson, 'Impact' is an acronym that stands for inequality, mindset, purpose/partnership, acceleration, community, and transformation. Each letter relates to a center of practice. The book, Impact Ed, provides a roadmap for how community college entrepreneurship can address wicked problems, such as creating equity and prosperity post-COVID through the centers of practice. The bi-partisan book's recommendations involve engaging entire communities to heal divisions and reset the economy through the support of local community colleges, through entrepreneurial "shovel-ready" projects. Important to note is the fact that Impact Ed is part of a series of 10 books called 'Resetting Our Future.' The other books in the series focus on global challenges. She explained, "We are the voice for the entire United States" when it comes to entrepreneurially addressing wicked problems in partnership with community colleges. She added, "we've been doing this work for five years and we were given an invitation from a publishing company". In fact, the organization took part in:

a webinar on Saturday through the UK, which looks at climate change. It looks at things directly tied to UN sustainability goals… the environment, inclusion- giving people opportunities. We feel somewhat humbled that we're part of this national conversation. As part of UNESCO, we were invited to a conference in Paris where we would have the opportunity to display. We're going to participate, but we'll be part of a virtual exhibit hall if you will. So, we'll be talking with people from all over the world.

MSI Community College Role #5 – Role of Grant Partner. Several participants mentioned the role of grant partner, which runs throughout all of the other roles and activities. Grants are often used to produce issue-focused outcomes through activities. In other words, each activity and/or value provides an opportunity to design a grant or funding application around addressing a wicked problem that impacts our students, communities, and colleges. Carefully designed funding applications could provide much needed additional funding to support college operations during times of fiscal constraint.

Ms. McPherson describes just one way the local community college works in partnership with programs through grants:

> The community college is in receipt of grant funding that is intended to support students who struggle with being unhoused. We partner with them to pull our resources because those resources are restricted to pretty specific things like housing, right? [We are] in the business of housing. We help with things like emergency food, emergency utilities, clothing, allowances, technology support, so that they have the capacity to learn in school and have the same technology other students have. A really practical partnership is figuring out what [the community college] is restricted from doing and figuring out how we can fill in those gaps, pool our resources, and stretch our dollars.

Community College Mission Alignment with Wicked Problems

Community college missions are influenced by the political, economic, and social landscape. These institutions are expected to adapt to the needs of society. The second research

question explored how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability.

The researcher employed a qualitative, single case study design and used a semi-structured interview process to answer the question. As previously mentioned, the original sample intended for this question was targeted toward community college MSI leaders. However, the program leaders contributed relevant and thoughtful answers, which were incorporated. Therefore, cross-pollination between the two audiences is reflected in the findings.

According to the participants, the alignment between the community college mission and addressing wicked problems of sustainability is strengthened by the value created by the entrepreneurial program. The entrepreneurial programs created value in four categories, including educating for student success, strategic leadership for equal access, outreach to local communities, and partnering for economic development.

CC Mission Alignment with SDGs – Education for Student Success. During the interviews, the participants described an alignment between the community college's mission of student success and the value created when community colleges addressed wicked problems of sustainability (SDGs) through the entrepreneurial programming. The value consisted of instilling skills, such as creative and complex problem-solving, design-thinking, convergent and divergent thinking, economic resilience, self-efficacy developed from opportunities to lead, and cultivation of an internal locus of control. According to the participants, students also benefited from therapeutic team building activities, self-directed learning, job opportunities and placement. Finally, the programming supports student success by providing a feeling of belonging, offering college credit, recruitment, retention and completion. Dr. Taylor emphasized:

> When you're always coming back to, 'what is the mission and the vision', then you, can't not address all the pillars. You can't skip over the social pieces. You can't skip over the

environmental. You can't skip over the economic. Some say 'the mission is complicated'. The mission is not complicated. Life is complicated.

She went on to explain:

[The SDGs] are core to the community college mission and are representative of the areas of focus. I'm not suggesting by any means that all community colleges in the United States [address] every single one of these. But I can say to you that, looking at these boxes, I don't see any one [SDG] that our college either is not currently engaged in or has a part of its core mission.

Creative and Complex Problem-Solving. During the interviews, participants described creative problem-solving skills as the value created for student success when community colleges engage in the multi-stakeholder programs.   According to Dr. Brooks, an Associate Business Professor with 12 years of community college experience:

The jobs of the future will require these [complex problem-solving] skills. Students who are able to look at problems in different ways and who have a variety of tools to use to solve those problems are going to be, I think, better off in their lives and the world will be too.

Design Thinking Knowledge. Design thinking is a common process used for creative Problem-solving. Participants described design thinking skills a type of value created for student success when community colleges engage in the programs discussed. According to Ms. Bryan, an Assistant Business Professor with over 8 years of experience in community colleges, design-thinking is:

an empowering model that shows them what's possible in life and it alters the way that they think. They begin to realize that they actually have enormous experience, fortunately, with some of the most wicked problems that exist in communities. And that, that actually gives them a competitive advantage as a design thinker because they, they have built in empathy for people that are struggling with those challenges. And that's huge. They begin to realize that while life has been really difficult for them, that they actually can leverage that life experience for others in a really positive way.

Convergent/Divergent Thinking. Convergent and divergent thinking are both used during the design-thinking process. During the interviews, participants described

convergent and divergent thinking as value created for student success through the community college programming. These concepts were described as important for students to possess for the future of work during the Fourth Industrial Revolution. For example, Dr. Brooks noted:

> [America's] K-12 education develops these really intense convergent thinking skills, such as picking the right answer out of several choices… What design thinking does is it begins to expose you to developing divergent thinking skills. And that is, I think, the greatest benefit that we can provide to our students, because that is what employers desire. They want people to come up with new solutions, not pick from the normal bucket of remedies that we could use to solve that problem. Is there a new way of solving that problem?

Economic Resilience Tools. Economic resilience can help students achieve academic and lifelong success. During the interviews, participants described economic resilience as the value created for student success through the community college programming. Several participants referenced the power of entrepreneurial multi-stakeholder initiatives for cultivating economic resilience. Ms. Parsons, a computer science and IT faculty member with 14 years in community college, explained:

> If you live in a major city, you can make good money in tech support. It might be the difference between being homeless or living above the poverty line. I'm a first-generation college student. Neither of my parents graduated from college. Although, my dad did graduate from high school. This kind of money is a big deal to people who are trying to be independent in an expensive city.

Ms. Parsons also referenced an opportunity for students to learn how to earn money independently:

> The students are actually making money by selling products online, such as printed t-shirts and images on mugs [which can be translated into a business].

Last but not least, Mr. Smith, a Chief Executive Officer of an entrepreneurial program founded in 2013, suggested taking a wide-frame view to the entrepreneurial programs and initiatives.

When you expand the definition of entrepreneurship, you can see a whole other level of activity in economic development happen. Viewing entrepreneurs as men with suits, ties and briefcases- old white men or crazy sock tech startup young, white bros. That's very exclusive and very limited. It pretty much does a disservice to our history of humanity, where everyone through all the ages has been entrepreneurial. People have found ways to exchange value with other people in close proximity to them to survive. It's only very recently that we've kind of divorced that activity as a function of humanity to something that the business sector does. I think if we get rid of the arbitrary, fancy French words of entrepreneurship and just help regular people figure out how to sustain and support themselves through the exchange of value… and that provides much more economic resilience even if it can't be measured as economic output locally or bringing in money from outside.

Building Self-Efficacy Skills. Increased self-efficacy is a powerful bi-product of education in general but particularly in entrepreneurship education.   Participants described building the student's confidence and self-efficacy developed through leadership opportunities as a type of value created for student success through the programming. Ms. Bryan, a community college professor, explained:

Through the design thinking center, when they're called in to be a subject matter expert on design thinking and they lead a [campus community] team that has come in, our students are now the leader of a team that has the vice president in it. I think that is so empowering for the student that it's developing these other [self-efficacy] skills and giving them confidence, leadership, and all these extra skills that you just can't teach with a book.

Cultivation of an Internal Locus of Control. Students benefit from a strong internal locus of control, which can be increased through various experiences. Interviewees described building an internal locus of control as value created for student success through the participant's program, which focused on addressing the wicked problem of student homelessness. According to Ms. McPherson:

The average graduation rate for a homeless kid or a kid that struggles with being homeless off and on is between 72 to 77% in a given year. Ours is upwards of 90% and that has to do with us creating space for them to belong and to be comfortable addressing their trauma and building resilience. It's a formula for building the internal locus of control and resilience in a child, which then translates practically into completing the academic pursuit ahead of them and envisioning their life as a stable adult.

Therapeutic Team-Building Opportunities. Students experience a plethora of challenges, often including past trauma. During the interviews, participants described the therapeutic team-building activities as value created for student success through the program. Ms. Parsons, a community college faculty member deeply involved with the campus maker space explained:

> We had a team-building program [for students]. We have a menu of things that we can do for students. For example, we can make key chains and do duct tape art and button making. We use the laser cutter for [personalizing] each of these programs. It's interesting how you have this space in the structure, but each student group brings their own meaning to it. They bring their own project, their own challenge, and their own value. She also described how these activities [helped] students heal from traumatic experiences. For example, after the Christ-church shooting, they had a candle-making session.

Self-Directed Learning Experiences. Self-directed learning can help students take charge of their learning journey, often increasing their success. The participants interviewed described the program's value as cultivating self-directed learning, as a contributor to student success through the program. According to Ms. Myrtle, a statewide project manager for the community college system:

> COVID [provided] an opportunity to become self-directed learners. This experience is almost like a living lab. The skills [developed from this program] are precisely the skills that are going to make you successful.

Job Opportunities and Placement. Many students attend college in order to ultimately secure a job. However, students often struggle to find job opportunities. During the interviews, participants described the program's value for job opportunities and placement, as a contributor to student success through the program. The programs were described by participants as, "pathways for internships and job opportunities". According to Dr. Delgado:

> the biggest gap I find is the failure to engage employers in a meaningful way that leads to placement. I can engage the state and they'll give me a workforce development plan.

They can tell me where the vacancies are. I can go back to the community college and we're going to build out coursework to fill these vacancies, but we don't go the last mile and get into a formal public-private partnership agreement that says, 'if we build this for you, you'll hire them'. Why aren't there batches of student completions in data that you can extract without names and perhaps say, we have 150 graduates this year of these types of things? Why can't there be a clearing house where employers can say, 'well I need five of this'… and then we match them up. Here's the 10 students that meet that criteria. And in exchange, you can have contact with those students. Maybe we have to get an agreement by the student marking a box. Yes, you can share my information with employers. There's fear of tracking, but at least give them the choice.

Promoting a Feeling of Belonging. Students benefit greatly through an increased feeling of belonging resulting from the program. This is aligned with the community college mission of student success. During the interviews, participants described the program's value as providing a feeling of belonging for students, as a contributor to student success. According to Mrs. McPherson:

If you boiled it all down to one thing, it would be the value of belonging and being surrounded by people that understand the experiential circumstances because they're sharing them. So, they boost each other and they can talk about things comfortably. They can find each other and rely on each other. When students feel a sense of belonging, they are less likely to drop out of college, which supports student success.

Opportunities for College Credit. Students benefit from new opportunities for college credit. Many prospective students are not quite ready to commit to an associate's program but when short courses provide some college credit, students may think twice about continuing on their educational journey. In fact, twenty years ago, I initially committed to just one community college for-credit course and that decision ultimately, led me to pursuing a PhD in Community College Leadership and writing this dissertation. Many participants also made this connection during the interviews. For example, Mr. Brand pointed out:

We grant advanced standing to students who complete the certification. They complete the manufacturing skill standards, certified production technician. So, they go through 160 hours of training and get four national certifications. And when they're done with

that, if they earn their certification, they get credit for six hours, six credit hours in advanced manufacturing.

Recruitment, Retention, and Completion. Both community colleges and the students benefit from increased recruitment, retention, and completion. The participants interviewed described this value as a contributor to student success through the program. Ms. Parsons, a computer science and IT faculty member, described how the program supported retention and completion efforts:

> Earlier in the semester, the community college had a flex day and the theme was student success. We had to look at data by department to assess how specific categories of students were doing in each area. My department, computer networking, is in the school of STEM, which also includes biology, chemistry, engineering and math. We all came together and guess what? We were not serving underrepresented minorities. We were not serving veterans. We were not serving first-generation college or foster children. We were failing miserably. Student success in our program has a specific definition of completion and persistence. Completion meaning, finishing the course that they were in and persistence, meaning continuing on to the next course from the one that they were in. It was very disheartening to me because the STEM pathway can be a life-changer for students in our area.

Ms. Myrtle described how the program contributed to retention:

> The interpersonal connection [provided during the maker space program] was powerful for retention because students need to develop a meaningful relationship. This is the #1 reason students drop out. They don't feel connected to anyone or anything. This can be a landing place for any student. It's a place of exploration and non-judgement. She added, the mobile maker space was brought to elementary schools and high schools, using the space as a creative approach to getting students interested in science, technology, 3D printing. The moment they showed interest, they were invited to various events on campus. It was used as an outreach tool.

Ms. Massey agreed that the program supported the college's recruitment efforts:

> Enrollment was influenced by the community college marketing as a 'changemaker campus'. For example, [during the program] Admissions staff asked, 'did the fact that we're a change-maker campus influenced your decision to enroll in this institution?' They saw some significant number of students saying that it influenced their decision to enroll at [that institution] versus another institution.

CC Mission Alignment with SDGs – Leadership for Equal Access. During the
interviews, the participants responses emphasized an alignment between the community college
mission of equal access and the value created when community colleges address wicked
problems of sustainability (i.e., SDGs). The value created by the programs involved social and
economic mobility, lifelong learning, empowerment, basic needs, research grant knowledge,
mentor connections, subject matter connections, equity and inclusivity, interdisciplinary
experiences, cutting edge curriculum, empathetic environments, and applied learning.

Access to Social and Economic Mobility.   The students and colleges alike benefit from
increased access to social and economic mobility, which is also aligned with the mission of
community colleges. This is validated by the research and the participant feedback. For
example, Mr. Brand explained:

> The community college mission as a whole is to give individuals a dual pathway to social
> and economic success... the thought being that not all of us are destined for a four-year
> education that will yield what we have been told previously as the sustainable way of life.
> I think two-year community colleges offer individuals dual pathway, both of which are
> sustainable, both of which provide quality, education and training that will yield the
> correct pathway as adopted by the individuals that we're serving.

Dr. Sampson emphasized that one core tenant of how her organization views
entrepreneurship is that, "everyone innately, whether they work for a corporation or want to start
their own business can be an entrepreneur". She specifically mentioned that an opportunity
exists for:

> people of color, veterans, women, people over 50, and immigrants with a little bit of
> support from the community college and seed money can start their own business. They
> can pull themselves into the middle class, whether through a skilled trade or main street
> business.

Access to Lifelong Learning. The students and community members benefit from

increased access to lifelong learning, which is expressed in many of the mission statements. This

is reflected throughout the research and the participant feedback. For example, Dr. Taylor

emphasized:

> Our mission is to support lifelong learners- to create students who are prepared for career
> and academic development. When you're looking at it through that lens [SDGs], you
> can't create a lifelong learner if students can't access learning. You can't prepare students
> for career academic development if they can't meet the basics of Maslow's Hierarchy of
> Needs. So, they're all very much intertwined.

Access to Empowering Programming. The students benefit greatly from increased

access to empowering programming. This is reflected throughout the literature and interviews.

For example, According to Ms. Myrtle:

> Our model and everything we are doing [is designed to] empower the students. We
> should be working from an empowerment model, not a deficit model.

Access to Basic Needs. The students benefit from increased access to basic needs. Both

the research and participant responses reinforce this perspective. According to Mr. Nelms, the

director of an entrepreneurial program on a community college campus:

> The number of kids in the free and reduced lunch program in some areas exceed 50%.
> That's very concerning. Whatever we can do to get those, those kids into degree
> certificates and completion is, significant for reducing barriers. It's not only the kids, it's
> their parents too. We have a lot of single parents going through the technical programs.
> The career tech programs help lift those people out of poverty. With the huge
> unemployment that we saw in the early stages of COVID, our students are worried about
> where their meals are going to come from. If their parents weren't working, maybe
> they're the ones that had had the part-time job. People had [and still have] some serious
> food insecurity. We talk weekly about our food pantry and keeping that stocked. [These
> COVID-related barriers have] impacted enrollment significantly in addition, a participant
> explained, that one of our employees that works directly with students came to realize
> how many students actually [experienced] hunger issues. So, they just opened a food
> pantry, and it's not just food, it's clothing and stuff like that, just for the students.

Access to Research Grant Knowledge. Typically, only students at four-year universities

are exposed to research grants. Rarely are community college students armed with the

knowledge they need to pursue Small Business Technology Transfer (STTR) or Small Business

Innovation Research (SBIR) grants. The interviews explain that the program participants at the

community college benefit from access to research grant knowledge, giving them a competitive

advantage in securing funding for their ideas. According to Mr. Nelms:

> Most of the students aren't doing research or working with a professor who's doing research [that requires] the scientific process so they can't yet necessarily apply for things like an STTR grant. However, they will be able to do that at the next level when they go on to the university level. So, this is like the groundwork for them to be able to be more successful at that higher level. As a national instructor, now I'm seeing the people who had solid training at a foundational level succeed and do far better than those who really didn't have that kind of training.

Similarly, another participant explained:

> One of our graduates went on to compete at a state level and won that competition, and then applied for a USDA grant, which could be STTR coming out of the university, or it could be SBIR, which is more community focused. It gives a lot of exposure and credibility to our program. As we graduate people who go out into the rest of the community and the rest of the state, and then eventually hopefully nationwide but it also prepares them to continue on into things like the SBIR, our grant programs, or the state grant programs.

Access to Mentor Connections. Access to mentor connections is a benefit for students

provided through the programming. When students have access to mentors, they have a

competitive advantage for being successful in business and life in general. According to Mr.

Nelms:

> [If a student] comes up with a new glove or a new way to do fix an engine, you get to build it and be surrounded by mentors with industry experience. That is important.

> Mr. Aguiar described this type of access within the context of a rural community:

> We can bring technology, mentors, and resources remotely to those rural areas and that will level the playing field for our students.

Access to Subject-Matter Connections. Similarly, access to subject-matter experts is a

benefit for students generated through the programming. This access provides students with an

increased ability to succeed at business. Mr. Nelms explained:

> The subject-matter expert network connections will come in handy for them later, as they
> pursue at least in the educational side.

Programming for Equity and Inclusivity. Access to increased programming for equity

and inclusivity is a benefit for students. Ms. Myrtle explained the parallel between

sustainable development and social justice.

> If by sustainable development goals, you mean social justice, human development and
> equity… These are, of course, the major goals of the community college system at the
> moment. In fact, these are very explicitly the goals.

> The topic of inclusivity was referenced consistently during the interviews.

According to Mr. Saddle:

> Community colleges are the most radically democratic system of education in the world.
> Our bar for entry is the ability to benefit, which either sounds revolutionary and
> democratic to people, or it sounds like a slight, and to me it's revolutionary and
> democratic. And so, we see the most diverse population of students…. They may be a
> lifelong learner, improve job skills, wanting to transfer, or just wanting to take a class.
> That makes us an environment where lots of different ideas and different kinds of ways
> of knowing and different kinds of people.

Access to Interdisciplinary Experiences. Access to interdisciplinary experiences

provided through the programming benefits the student, according to the interviewees.

Additionally, this benefit is tied to the mission of access for community colleges. As Mr. Saddle

mentioned:

> I believe as an educator, that these wicked problems are not solved or won't be solved by
> siloed, narrow and traditional ways of thinking through problems. At the core of the
> work that we try to do in the Makerspace is to put together habits of mind and ways of
> thinking for different kinds of students and have them look at ways of solving problems.
> The way a musician and a theater arts person and an engineer are going to solve a
> problem in concert is different than the way an engineer might solve the problem alone or

a group of three engineers. To me, the goal of our whole space is to open up students' minds to these other ways of thinking or other ways of attacking these challenges through interdisciplinary conversations. I think that is the only way that we, as a human race are going to really tackle these problems.

Another participant explained:

[This program] is a discipline agnostic general education Makerspace. We are intentionally not a STEM space or an engineering space. The curriculum is designed around making. It is an open invitation to hobbyists, teachers, and business people wanting to start businesses and STEM people there'll be there anyway, right. The 18-24-year-old male will show up at the space anyway.

Access to Cutting-Edge Curriculum. Community college students do not always have

access to cutting edge curriculum. The participants emphasized that leveling the academic

playing field by providing only the best in entrepreneurship education was a value of the

program. According to Mr. Nelms:

We wanted the most advanced entrepreneurial training program there is industry-wide. So, we want to have a recognized credible training program that we could really scale with.

Access to Empathetic Environments. The power of empathy cannot be overstated,

particularly during COVID. Access to empathetic environments and colleges that teach empathy

benefits community college students. According to Ms. Nash:

I think a community college education is often a more accessible way to start the educational journey for someone who might find a four-year degree a bit intimidating.

Dr. Brooks explained:

There are obviously a lot of wicked problems in society, generally speaking. In addition to the inclusive nature of community colleges, I believe that community colleges can separate themselves extensively by being an environment that is deeply empathetic. There's a significant amount of empathy within the community college system overall, but then within the classrooms, the students who are coming from many, many different life experiences are able to develop this rapport and degree of empathy with one another that I think really is powerful. I think that that helps to address some of those wicked challenges that students face.

[On many community college campuses, you'll find] deep diversity, even within the classroom and not just racial diversity, but cognitive diversity [and] demographic diversity from age to gender to sexual identification. I think the thing that's lacking today, because of the political discourse and societal wicked problems, is just a general lack of empathy for one another. It's just not there, you know, for whatever reasons. People are angry, people are frustrated. In a recent Ted talk, the speaker [a social entrepreneur] said that he believed strongly that entrepreneurship can heal the wounds of a divided nation, one social business at a time because people may feel angry, but they can come together around making their communities better, no matter what those personal disagreements might be between each other. A great example of this is Jimmy Carter's initiative, habitat for humanity. I've worked on habitat for humanity initiatives before as a volunteer alongside people who are roofers and not even know what a roof is and, you know, definite political differences there. But man, where we bonding and getting together to build a home for somebody that was in need for it. So, I believe strongly that the design thinking center of practice will help to heal those wounds, you know, through different initiatives that we offer. I like that these centers of practice are at an educational institution and not just any, but at a community college specifically, if the same thing was at a university, my hypothesis is it wouldn't feel accessible to the community. So, I think having this rich resource available in communities to the people who will feel welcomed there, is going to be invaluable.

Access to Applied and Service-Learning. Students benefit from access to the applied and

service-learning opportunities provided by the programs. Dr. Brooks remarked:

[Applied learning is] what community college is all about. Students that are traditional college age students, like 18 to 25 years old, and students that have never been to college that are 35 or 40 years old have more in common with one another other than being HCC students. And that is that they were trained in their K through 12 education, to develop these like really intense convergent thinking skills, you know, picking the right answer out of a choice of answer choices. It doesn't matter what age they are. But what design thinking does is it begins to expose you to developing divergent thinking skills. And that is I think the greatest benefit that we can provide to our students, because that is what employers desire. They want people to come up with new solutions, not pick from the normal, you know, bucket of remedies that we could use to solve that problem. Is there a new way of solving that problem… when they get that, it's really cool to see.

Dr. Sampson emphasized the role of empathy within the context of current events:

What motivates us? It's not money, it's not credit, it's change. It's weird that we're having this conversation a day when the presidential election isn't even decided, and you're not asking me this question. What I've been doing this morning is to practice deep empathy for [some] because I know that there are people in rural communities that are frightened and have maybe not been given factual information and have been led down a scary path. So, my message is one about unity.

Access to Paid Internships and Apprenticeships. The participants described

the program's value as providing paid internships and apprenticeships, both of which contributed

to student success. Ms. Squire commented:

> We had a mandate by the Vice-Chancellor to make paid student internships and work-based experience central to this [grant] project. In an effort to fulfill this mandate, employers were invited to the campus and to be part of curriculum.

Mr. Saddle explained:

> We deputized student internship team and paid them through [the program].

Another participant stated:

> We had to tell a workforce story in order to, have access to the funding and it was an important part and became more so later in the grant. We used Makermatic to do that. For this event, employers came in and defined a problem and students worked on that problem. Ultimately, this led to student internships.

Access to Scholarships. The participants interviewed described one of the program's

value as providing scholarships, which contribute to student success. Mr. Brand had an

interesting perspective for workforce scholarships for students:

> We have a pool of funds available to pay the actual scholarships. We have a no asterisks funding, which is based on a frustration with workforce boards over the long haul, where they always say, well, we have free training available. Then there's a big asterisk at the end that says, if you're in this economic group, and if we enroll you in, if you do this, and what I wanted to say was, if we say we got free training, we better be able to turn nobody away. If you're interested in doing this and you can pass this test, then you're in, then you will get a scholarship. If you can't pass the test, we'll teach you how to pass the test. You know, so I don't want to turn anybody away. At the very bottom of that list is our sustainability fund, because those are the most flexible dollars we get from our employers that don't have any federal regulations, residency requirements, income guidelines, or anything like that. And that's a thousand dollars. That fund currently has maybe $200,000 in it to fund scholarships. We gathered up all the funds that we had at our discretion. So, the workforce development board has things like adult programs, dislocated worker, and things like that, that can fund the initial payment of the scholarship for the student but we also have funds at the college for scholarships as well. So, we put those into the mix. One of our counties gives a $100,000 a year to fund scholarships for short term workforce development or workforce training program tuition

for their residents. And we have different pots of money like that. So, what we do is we stack up those funds from the most restrictive to the least restrictive. And then we just test each person against those until one sticks

CC Mission Alignment with SDGs – Convening for Local Communities. Community colleges work closely with community organizations, businesses, and local governments. In fact, during the interviews, the participants articulated an alignment between the community college's mission of support the local community and the value created when community colleges addressed wicked problems of sustainability (SDGs) through convening. The value participants describe include supporting democratic ideals, issue convening and collaboration, community problem-solving, cross-pollination of thought, diversity and inclusion, design-thinking workshops, civic engagement, livable wages, and infusing an entrepreneurial culture. Mr. Baker described exactly how his community college mission is aligned with the Sustainable Development Goals (SDGs), as evidenced through his own daily activities:

> One of the things that [the community college] is focused on now is the COVID landscape. We have food pantries [to address] food insecurities among our students [and issues surrounding] clean water. We're very much involved in quality education and [currently, we are determining] how we sustain even in a COVID environment, quality education given, the requirement now to convert, to remote learning. Good health and wellbeing…. We do that almost daily through our [bi-weekly] town hall meetings. Decent work and economic growth… Most of us in leadership roles at the college are involved in some form with economic development. I serve not only on this fund, but I'm also on a workforce development board. I'm on our global community board. I'm on hospital boards, healthcare boards, community activism boards. So, we cover the gambit here. I think [the SDGs] are core to our mission. We can't exist if we're not a key community player and activist. And I'll share this with you. From my perspective, one has to understand the line of demarcation from being in the educational sector and transitioning into a community engagement public sector that is not educational in terms of product, which is why I'm very thankful that community colleges have as a part of its name, 'community'.

All of this happens because of convening community college partners for the benefit of the students.

Supporting Democratic Ideals. In America, democracy is critically important but has

experienced what some may describe as an attack in recent years. Without strong support for

democratic ideals, many of the wicked problems, such as poverty, inequality, and hunger, may

be even further exacerbated. The participants emphasized the importance of community colleges

supporting democratic ideals through education and collaborative convening. As Dr. Sikes, a

program founder with 26 years of experience in complex collaboration and policy explained:

> Community colleges are 'democracy's college' in terms of mobility… social mobility
> and financial mobility. Democracy only works when there is a middle-class. The
> biggest challenges that we face right now, politically in this country, is polarization and
> that's happening because of the haves and the have-nots. Democracy doesn't happen
> without a middle-class. We build the middle class. Without community colleges, this
> nation will not last, we will not stand the test of time.

Similarly, Ms. Pascal the Director of Social Innovation at a large community college

described how what is taught in the program relates to democracy:

> It isn't just, 'do you have the skills and the knowledge to be effective in the workplace',
> but 'do you understand the responsibility and the level of commitment you should have
> as a citizen and what it means to uphold democracy?' The connection to wicked
> problems is that sadly we are more connected than ever before [to them] because we've
> got fires in our face and the world is crushing into our classrooms. To be an active and
> prepared citizen in the workforce means to face the real social and environmental damage
> and threats that have accumulated over time. The SDGs provide ample space for us to
> explore the broad spectrum of conditions that influence and impact more fair, just, and
> prosperous communities.

Local Issue Convening and Collaboration. Community colleges often convene local

community stakeholders to discuss current economic, social, and environmental issues. The

participants described the value generated for the community when colleges convene and

collaborate with stakeholders for this purpose. Mr. Baker explained this from a post-COVID

perspective:

> I think community colleges are going to be the key answer to a lot of the ills that [we will
> face in the coming years] and the challenges in a post-COVID environment. This is going
> to be around, in my opinion, for the next two, maybe four years. And so, notwithstanding

vaccines or remediation, we have done significant damage as a result of COVID to our infrastructure, both mentally, physically, and socially, it's going to take us a while to recover. I think community colleges [through] entrepreneurial-ism [and in partnership with this program] can be thought leaders in addressing [SDGs] if we do it collectively through sector partnerships, as opposed to separately. For example, in manufacturing, healthcare, and information technology, if we can collectively address these issues, we save resources, [and also] expedite the solution. We accelerate the solution, and that's [the role] I'm hoping the community colleges will be able to play.

Community Problem-Solving. Community colleges were described as the community's

problem-solvers by several participants. According to a statewide system president with 22

years of experience in community colleges, Dr. Sikes explained:

More so than any other group in higher education our job is to solve the problems of people in communities. I can promise you, and this is no disrespect to four-year institutions, but the presidents of those institutions don't show up to work thinking how can they solve society's problems every day. They just don't. That's not in their DNA every single day.   I and hundreds of [community college leaders] across the country put their feet on the floor in the morning thinking, 'how do I solve problems for people?' We must be more than a convener. HigherEd oftentimes lets themselves off the hook in terms of doing, because they've taken on that role of convener. Well, I got news for you just putting people in the room, won't get it done. We are the people and communities, problem solvers.

Ms. Squire described how the college was making progress toward that goal:

One faculty member partnered with the anthropology and sociology departments to create the state's first AA degree for Modern Making. The most popular course in the suite is called 'Making for Social Change'.

Community Cross-Pollination of Thought. Cross pollination of thought with

cognitively and demographically diverse audience is often viewed as essential when addressing

wicked problems. This perspective was reflected during the interviews. For example, Mr.

Saddle explained:

I think that the best solutions to the world's problems, to these wicked problems you're talking about, are going to come from environments where there's cross-pollination of thought and cross-pollination of people. We're a community college but the community

is often the smallest voice in the room, or it's almost an afterthought, which is a weird thing.

Supporting Local Diversity and Inclusion. Community colleges serve a much more

diverse population of students than a traditional university. Therefore, the topic of diversity and

inclusion was mentioned several times during the interviews as a type of value provided by the

initiative. Ms. Bryan mentioned this alignment:

> We could go on a whole other tangent about that because all of this lends itself to equity, diversity and inclusion… to be able to uncover that skillset in a whole new set of potential employees or community members.

Design-Thinking Workshops.   The community benefits greatly from opportunities to

experience problem-solving processes through workshops. In fact, the design-thinking process

was mentioned by a majority of the participants. For example, Dr. Brooks stated:

> The design thinking center of practice offers design thinking to the masses for free [or a discounted price] through monthly workshops. [Some attendees] are displaced [while others] are just curious, [and some] feel like they need to learn something new, engage in workshops we have every month. I think that it's hard to measure the impact of that.

> We're also offering free resources to the business community or at a very reduced price to do work that would cost tens of thousands of dollars [if you hired a consultant]. And we're taking the resource of our own students, who we just said at the top of this interview, are representative of the greater community to solve problems for businesses in the community.   It's almost like getting your target audience to help you solve problems. I can pick two [SDG-related workshops] off the top of my head. One is education and the other is poverty. We've been very successful at going into public schools. One school with over 90% of the student population qualifying for free or reduced lunch. This is a pretty low-income group of children. And we have provided after school workshops and training in design thinking, which has led students who are fourth and fifth graders, to develop a farm on one of the elementary school campuses that really addressed a multitude of challenges tethered to poverty. One was learning about business enterprising, which can be one of the things that lifts you out of [poverty]. Number two was to provide food and grow food [for] the weekend, which is a critical time window when they are separated from access to food. Those children, would come back on Mondays, semi-nourished because of having access to this food. Whereas other students in the same situation would come back extremely hungry on Mondays. It would take a day and a half to catch up on their nutrition. Those children are in effect getting educated

three and a half out of five days a week because they can't focus for a day and a half as they catch up on their nutrition. That, in turn, places them behind the learning curve from an educational standpoint, they have less access to the top teachers and it's a vicious cycle. So, we've been successful on a very micro level in using design thinking in that way to try to break the cycle of poverty. So, I think that that's probably a good case example. That's important. Another [example relates to the] zero-hunger sustainable goal. I've also had student teams work with different departments of the college to take on challenges that those departments are facing and apply design thinking to it. So, for example, the mail room was one of them. We had the woman Mary that heads up the mail room, come in and share some of her challenges and wicked problems. Food service was a [another] one and also the food pantry. We worked with the Deans on AS recruitment. We did one session with the Sustainability Council, in which the council members wanted to know how [they can] re-imagine the sustainability council college wide.

Community Civic Engagement Education. Civic engagement was described as a value

gained through the initiative, and also as one which supports democracy. According to Ms.

Pascal, "Civic engagement is critical for a functioning democracy". Considering the fact that

community colleges are considered 'democracy's colleges,' it was quite appropriate that civic

engagement was an expected outcome of the program. As one participant explained:

> Our general mission as community colleges in the higher ed space is to prepare our citizens to be exemplar in the workforce of tomorrow. Our previous college president was very vocal about this being a two-part role. We're not here just to train and prepare for the workforce of tomorrow, but we're here to prepare for the active citizenry of tomorrow.

Programming for Local Livable Wages. Livable wages are critical for survival,

particularly in larger cities. Several participants emphasized their program's contribution of

providing students and community members with a pathway to livable wages. For example, Ms.

Parsons emphasized the program's outcome of livable wage careers:

> There are so many STEM jobs. There's biotech, technology, and construction. The social justice part has always been baked into this thing for me. This was more about creating a program that was inclusive to students who might not see themselves as a computer programmer or a networking technician but making a space where they could work on that identity and get some support and experience doing that. It is THE mission, right?

Programs that give students the opportunity to build skills that lead to a higher wage or lead to a living wage.

Infusing an Entrepreneurial Culture. A majority of the programs and initiatives included in the study provided the added benefit of creating a more entrepreneurial culture throughout the community. According to Dr. Sikes, a community college system-wide president:

> The program contributed largely to a culture of entrepreneurship within this city. From the time this program started until I left in 2013, we went from having nothing in entrepreneurship to having a full entrepreneurship month and a pitch competition. So, to me, it set the tone of this city as an entrepreneurial city.

Sustainable Entrepreneurial Ecosystem Cultivation. Cultivating a sustainable entrepreneurial ecosystem is described by interviewees but not expressly stated. This is likely due to the emergent nature of the term. However, the concept should be included as a value generated by the entrepreneurial programming and aligned with the community college mission of supporting the local economy. Additionally, the related concept of ecosystem builders is likely to be a recurring theme for years to come and therefore, should be included as a value.

CC Mission Alignment with SDGs – Partnership for Economic Development. Community colleges commonly support economic development initiatives. In fact, during the interviews, the participants articulated an alignment between the community college's mission of supporting economic development and the value created when community colleges addressed wicked problems of sustainability (SDGs).   The value participants describe includes employer-demanded 21st century skills, organizational innovation, increasing small business revenue, entrepreneurial job creation, economic success, increased tax revenue, entrepreneurial education, post-COVID small business support, employee recruitment and screening, employer engagement and retention. Mr. Nelms explained:

I think the community colleges sole existence is to adapt to the wicked problems that our regions and communities are having. I think that's what business and industry relies on us to do…. To help them solve, the education or skilled workers gaps that they're seeing because they're focused on productivity.

Employer-Demanded – 21st Century Skills. Entrepreneurial skills are considered by many to be critical for survival in the 21st century. For this reason, employers and educators alike are starting to take note. According to a system-wide Dean of Workforce Development Services, Dr. Delgado:

The competency model that a lot of this work is based on is the 21st century skills [model]. One of the badges and one of the sections of that training is entrepreneurial mindset. So, there would have been exposure in training and development on the 21st century skills around entrepreneurship and entrepreneurial mindset. The statewide competency model includes entrepreneurial mindset as a core competency for the state employers, for all the 200,000 employees. But I don't think they called it out distinctively as entrepreneurial mindset. I think they renamed it to make it fit to the culture of the state agencies. They converted it to an innovative mindset. Similarly, another participant elaborated on how entrepreneurial mindset related to 21st century skills. [She explained, the entrepreneurial mindset curriculum] is used in the student success courses. This [curriculum infuses] growth mindset, persistence, problem-solving, ambiguity, adaptability to change- All of these are aligned to the fourth industrial revolution in a post-COVID world.

Organizational Innovation. In a post-pandemic world, community colleges will need to innovate in order to survive. This means examining the institution's business model and processes to determine what changes could support longer-term viability. The interviewees describe organizational innovation as a benefit of the entrepreneurial programming for the community college leaders and administrators. One statewide community college president explained:

Administrators [who participated in the program] learned how to better do their day job and also developed relationships that carried us well into where we are right now. In addition, these trained administrators were also certified facilitators that could teach faculty the program. Teaching faculty the program was valuable because they now better understood the business of the college. He believes this curriculum needs to be taught to educators and would ultimately like to do that in retirement.

Increasing Small Business Revenue. The ability to increase small business revenue is a

remarkable contribution to economic development within a region. Economic development is a

crucial aspect of the community college mission, which is notable considering the fact that

participants describe the value of the programming as increasing revenue for small business. For

example, Dr. Mattox, explained:

> Our goal is to help small businesses grow. If they grow, they will increase their revenues and they will increase their employees, right. Those are two benchmarks of economic development. They're not the only ones, but there's certainly two important ones. I also think that given where many of our small businesses are and the representation that we have amongst business owners of color… the impact of that economic growth is more significant and more important to the communities that these businesses are in for two reasons. One is (and we just collected some data on this recently), they are more likely to hire from within their communities. And in some cases, they're providing goods and services that would not be present in the community if these businesses weren't there, so I think that's the economic development partnership.   Anytime you have a large industry or a large corporation around a city, there's always a number of small businesses that are supplying parts, services and food. So, I think it's [about] figuring out what's the right balance of large and small and then also having the talent, the people and the workforce to fulfill both of them.

Ms. Foster was more specific in stating:

> A recent [survey by a state university indicated], for every $1 put into the program, our clients generated $97 in revenue.

Entrepreneurial Job Creation. One critical benefit of entrepreneurial programming is

job creation, which is an important aspect of economic development. The participants described

this value as entrepreneurial job creation. For example, the website for Dr. Mattox's

organization emphasized the impressive job creation numbers for the 10,000 businesses that

participated in the program. According to the website, after the program ended, 47% of the

businesses created jobs after 6 months, 53% of the businesses created jobs after 18 months, and

56% of the businesses created jobs after 30 months. Ms. McDonnel emphasized the community

college's role as:

> Engines of innovation…. They play a very important role for community engagement and innovation. Although we're not a research-based university, we are an academic institution that has a physical presence in eight of the major pockets of our community. Under the umbrella of the college, we not only have a number of academic programs and degrees and curriculums that help support the local needs of the community and the local industries. But we also have programs that, while we're not student facing, we are business facing. In other words, we interface with members of the business community and we help small businesses. Through participation in this program, contribute back through growing their business, generating revenue and creating jobs. So, I think that the economic development link between academic institutions and the business community is a very strong and important one.

Dr. Sampson explained how her organization's centers of practice are well-positioned to

promote job-creation:

> When I look at the vision going forward…. We had a $300,000 fundraising goal, we've now raised $1.3 million and we have more money that's coming in. Because we have financial stability ourselves, we haven't taken a penny of that money to cover our administration. I haven't used any of that money to pay for even the staff. We're kind of pivoting because we're not traveling anymore. We have one [center of practice] that is named, we got a $900,000 gift for [that center]. If we could get $1 million for each center or practice, we could have a dedicated staff person that worked for [our organization] that could do a lot of the back-end things that people don't have time to do. They could help write grants, collaborate with the other center of practice directors, offer seed grants, not just for creating businesses, but for creating business ideas, with the idea that the initial gift of a million dollars over the next two to three years would be matched and leveraged with local, state, and regional support. So, it would be sustainable. I think that's not out of the scope of doing. One of the things that we need to do is make sure that we are collecting, evaluating, and reporting everything so that's why we've engaged with startup-based platforms… to make sure that we are a data driven organization. We want a culture of experimentation and transparency, but we also need to make sure that we have that hard data so that if a foundation or the government comes to us, [they say] not only will we give you $8 million, we'll give you $80 million. Could you handle a gift of $80 million? And what would you do with it? I would say yes, I could, because I know with champions around the country, I know the work that's been done with a very modest amount of seed funding, could be scaled and could be amplified.   It's not about myself or the 10 staff members or even the board, it's really the [national member] community that's taken ownership of this. If we had that opportunity, I think we could turn things around. I honestly do, with every fiber of my being. The reason I believe that is I've seen the work that's been done in the last five years by people that are willing to take a

chance. Every chance I get, I sing the praises of the Verizon foundation because they took a chance on [our organization] a $600,000 pilot gift. We only had like three staff members. We had a bunch of consultants and because of our colleges and their commitment, we not only proved we could do it, but we're getting ready to accept a $9 million investment. Now, we have to work for that. We give that money back to 50 [community colleges and] historically black colleges. And then we basically drive them to achieve the results. So, it's not just money that we can do whatever we want but the money helps us to underwrite the cost of all of our staff salaries. So that with EEVF, when there's no funding to fund the administrative part, we've got enough secure funding and a program because of the technical assistance that we're doing to fund the rest of the operation. That's a very different business model that we stumbled into intentionally because of scarcity. I'm a person that believes that difficulty inspires us to be our best selves. I mean, to me struggle is a blessing. I mean, it's awful when you're going through it like today, you know, it, it doesn't feel really good to wake up in the morning and not know what the future is. But knowing I was going to talk to you, knowing that we are talking about this reset, that is not tied to anything because regardless of who wins the presidential election or any of these other elections, there are people in communities that need our help and there's opportunity [to help them].

Adding to Local Economic Success. Similar to job creation, community colleges are

often quite interested in contributing to the economic success of small businesses. Ms. Patterson

emphasized this value of economic success produced by her college's initiative:

[The program] increases the likelihood of success of these startups in their community. NSF research shows a more than 20% increase in success rates. I would say better, more well-trained business leaders in their community as well.

Mr. Smith stated, *"We've supported over 15,000 businesses through our programming*

where the launch and survival rate after two years [averages] 83%. Not just launched, but

actually launched and survived".

Increasing Tax Revenue. Small business tax revenue is critical for the economic

stability of a community. According to the participants, the programs contributed to increasing

revenue and in-turn taxes. Mr. Nelms explained how the community college mission is aligned

with addressing wicked problems of sustainability. He used an example of economic growth

within a key industry sector in his region, farming.

[Farming is] our whole economy. If the farming economy goes, our manufacturing economy goes. When those economies are suffering, everything about the community college suffers.   Our tax base [also] supports our enrollment. So, if those economies, the ag and the manufacturing, are not doing well, our community college really almost ceases to have a mission to help train the ag workers, farmers, and production manufacturing employees to do their work.

Ms. Foster explained their contribution more specifically:

We capture the state and federal revenue generated from our clients [each year]. Over last year is about a 50% increase in state, revenue that was generated by our clients and that's sales and payroll tax. For example, in 2018, our clients had $5.4 million in state revenue and in 2019 it was 9.1 million. Federal payroll taxes in 2018 were 19.5 million and 37.4 million. 2019.

Entrepreneurship Education in the Trades. Entrepreneurship poses a significant opportunity for the community college, particularly in the trades. In fact, participants described the valuable opportunity provided by community colleges addressing the wicked problems through entrepreneurship education. Mr. Smith asserted:

Community colleges are already building a workforce through training, which is one or two steps away from [the students] being equipped to run their own entrepreneurial ventures. For example, the students that are trained in the trades through education and apprenticeships and journeyman could also be on a trajectory to own their own business. Community colleges are already providing programming that is an important step-in equipping people for entrepreneurial work, whether [colleges] see it or not. I think the opportunity is to fully see that and embrace that and fully equip people [through entrepreneurship education], because for the most part, hardly anyone is actually equipping people for the activity of running a business.

There is an opportunity for community colleges to scalably and seamlessly incorporate entrepreneurship into the trades curriculum. Doing this would help to further democratize entrepreneurship, while also supporting small businesses post-COVID.

Post-COVID Small Business Support. COVID-19 introduced a plethora of challenges for small businesses. The community college mission is aligned with supporting small businesses for a more equitable post-COVID recovery. Ms. Flaherty explained:

As we come out of the pandemic or as businesses are trying to reopen and adjust, I think there will be new skillsets needed that the community colleges can offer to businesses. Think about your businesses, your micro enterprise businesses, even your main street businesses that may be aren't technically savvy. They now have to quickly learn e-commerce. Local restaurants may not have been using delivery services like Grub Hub. There so many things that community colleges can do to help their businesses reopen or survive right now. Perhaps now those entrepreneurs would prefer to find traditional employment instead and need new training and skills to do so. We're seeing the same thing that we saw after 2008. We're seeing a lot of people start businesses out of necessity. So, what can you do as a community college to help them either quickly figure out that their idea doesn't have a solid business plan or figure out if there's a market for their idea? How can you more quickly help them pivot or more quickly fail so that they can learn and move on?

Ms. Patterson agreed:

Post-COVID, I think local businesses, retail and restaurants [in particular], are going to have to really rethink their business models. [This program] is a tool for adapting and iterating or pivoting business models post-COVID.

Another participant explained, "I think [the community college] is going to be, a key catalyst for lifting us out of and onto another track".

Employee Recruiting, and Screening. Community colleges contributed to employee recruitment and screening for economic development. Mr. Brand explained that the creative fund set-aside to support employer recruitment and screening.

The [program] fund currently has [around] $200,000 in it to fund scholarships. That upfront money is there [for] initial screening before we grant the scholarships. The only thing that we ask is that they take the ACT work keys test. So, [students] have to pass the silver level for the national career readiness certificate. And they also have to pass a drug screen because all of our employees' drug screen. But both of those can be fixed. If you don't have the skills to pass the test, we have free training available to upgrade your skills. If you don't pass the drug screen, quit taking drugs. But you know, the way that we've preserved our assets and moved forward with this is because our students don't pay anything, including their drug screens. And the reason that I do that is that everybody knows whether they can pass a drug screen or not, but they're perfectly willing to take a flyer on somebody else's dime, you know? In the whole time that we've done all these drug screens, we've had no one failed the drug screen.

Mr. Brand also explained how employers' partner as investors:

[Employers'] partner in two different ways. I've told you about one, the sustainability fund, and that really is scalable. So, if you are a small firm that only hires one person a year, that's fine. You pay for one person a year. If you hire 50 a year, then you pay for 50. If we don't deliver value, you don't pay us. But also, every member invests annually in our advertising fund. That is the closest thing to overhead that we have. So, regardless of their size, each firm pays thousands to help us promote education and careers in manufacturing, put on events, host the website, produce printed materials, things like that. We do everything in thousands. And so that gives us $50,000. We do billboards and digital advertising and things like that. And so that gives us a $50,000 budget every year to work with, as a group to promote manufacturing careers in the area and promote our partners. So, it's a good deal. [Employers] don't have to invest any money upfront. [They] only have to pay us when we deliver value. Now, six years later that program is still able to sustain itself completely off that business model. All of the 500 students that have completed [the program] have become certified and gotten a job. Not one of them paid a penny to get that education. And they've been placed and retained at a very high rate and [level of] satisfaction. We have milestones along the way- the number of people that we've recruited, screened, certified, placed, and retained, [as well as] the amount of scholarship funds. So, we call it the sustainability fund. Our definition of retention is 90 days after they go to work. So, after they have been on the job on the 91st day, we send [employers] an invoice for a thousand dollars and they pay us gladly a thousand dollars because that's less than they would have paid to a temporary agency to get a worker. So, we have all those metrics. We have the 50 partner firms that invest in this every year. [As a benefit for the college, we also] generate FTE off this program that we get paid for.

Employer Engagement & Retention. Community colleges traditionally have strong

relationships with local employers. In addition to educating and training their future workforce,

some colleges go over and above to engage and serve the employers. For example, the

participants explained that employer engagement and retention is a value of the initiative.

According to Mr. Brand:

Employers are more highly engaged than they were before with the community. So, they're more likely to understand how they're getting value from us and what they pay us for that value. We don't ever promote it as a donation. This is not tax deductible. They do what they do because they get value for it. This is not a gift. This is an exchange of value in the same [way] that they would pay it up charge to a third-party staffing firm. This is a business expense and they can write it off that way if they want, but it's not a gift. These employers participate more highly in our advisory committees. They are involved in gift giving at a higher level, just because they're more engaged with us. We moved them from being consumers to being investors in the workforce and they tend to

be more involved overall in the community. So, they get involved in the chambers workforce committee and we hook them up with lots of folks like the high school CTE advisory committees, we get them involved in all kinds of things like that. So, we want to make sure that they have a chance to not just see us as their only source for people because we're not.

Mr. Nelms described the program as a retention tool for economic developers:

I've always looked at it [economic development] as kind of the three-legged stool. You have business recruitment, industry recruitment going out and recruiting other industries to come to our community. You have retention, [which involves] working with our current employers to help them grow and then creating the next new business and industry. [This program, in partnership with the community college] works very well with the retaining, helping business and industry be innovative and grow from new products and new innovations.

CHAPTER 5

DISCUSSION

The purpose of this qualitative interview-based case study was to understand (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability. The study was guided by two primary research questions: (a) How do the leaders of multi-stakeholder initiatives describe the role(s) of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

Thirteen leaders of multi-stakeholder initiatives participated in semi-structured interviews to provide insights into the role(s) of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability. In addition, fifteen community college leaders of multi-stakeholder initiatives participated in semi-structured interviews to inform the researcher as to how the mission of community colleges is aligned with addressing wicked problems of sustainability. Collectively, twenty-eight multi-stakeholder program and community college MSI leaders participated in the study.

In this chapter, the findings will inform a discussion about how entrepreneurial programming provided by community colleges can create value that is aligned with the mission of community colleges. The chapter also consists of perspectives for how community colleges can best contribute to addressing wicked problems of sustainability, such as poverty, hunger,

good health, quality education, gender equality, clean water, clean energy, infrastructure, inequality, climate action, peace, and infectious disease (United Nations Assembly, 2015). Recommendations for policy and practice, limitations of the study, and suggestions for future research will also be provided.

The Wicked Problem: COVID-19

In 2020, the coronavirus pandemic emerged globally (Baker, 2020). As a result, the United States transitioned from a seemingly idealistic model of capitalism (Mazzucato, 2020) supported by an endless demand for consumerism to silence on the streets of New York City, Las Vegas, Denver, and every other metropolitan city around the world (Bui & Badger, 2020; Gibbons, 2020). For some, this pre-COVID-19 reality was simply blissful, marked by luxurious vacations, mansions, access to power, a booming stock market, brand named clothing, and luxury vehicles. Meanwhile, others experienced a sense of widening inequality, job loss, decreased social mobility, and increased racial disparities (Zeballos-Roig, 2020). There were warning signs of the weak position Americans would likely face should there be a global or national emergency, but few were prepared to face this level of uncertainty. Mazzucato (2020) explained the interconnected dynamic resulting from the COVID-19 pandemic:

> Capitalism is facing at least three major crises. A pandemic-induced health crisis has rapidly ignited an economic crisis with yet unknown consequences for financial stability, and all of this is playing out against the backdrop of a climate crisis that cannot be addressed by "business as usual". Until just two months ago, the news media were full of frightening images of overwhelmed firefighters, not overwhelmed health-care providers. We desperately need entrepreneurial states that will invest more in innovation – from artificial intelligence to public health to renewables. But as this crisis reminds us, we also need states that know how to negotiate, so that the benefits of public investment return to the public. A killer virus has exposed major weaknesses within Western capitalist economies. Now that governments are on a war footing, we have an opportunity to fix the system. If we don't, we will stand no chance against the third major crisis – an

increasingly uninhabitable planet – and all the smaller crises that will come with it in the years and decades ahead. (p. 1)

Similarly, Richard V. Reeves, senior fellow at the Brookings Institute, described the pandemic as a "collision of crises" that simply exposed pre-existing inequities and inequalities (Fain, 2020). Poverty has led to higher COVID-19 mortality across minority populations due to the use of public transportation and the types of jobs held. Reeves explained that, "The whole U.S. political economy was like a giant pre-existing condition and COVID came along and exposed it all" (Fain, 2020, p. 1).

According to Weinberg (2020), "the response can't be reduced to a single issue or implemented in a narrow geographic place. The origins, impacts and responses are rooted in economic changes, health trends, technological advancements, demographic shifts, environmental decay, political movements and cultural dynamics" (para. 7).

For years, scientists, policymakers, business leaders, and entrepreneurs have warned of social, environmental, and economic risks such as COVID-19 throughout society (World Economic Forum, 2020a). In fact, the World Economic Forum (WEF) has been sounding the alarm for years, warning of increased poverty, economic inequality, infectious disease, climate change, and many other wicked problems despite efforts to mitigate their effects (Deming, 1994).

COVID-19's Impact and Relevance to Community Colleges. The coronavirus pandemic is an example of how a complex and interrelated wicked problem systemically impacts community colleges across the United States. A cross-reference of the COVID-19's impact in America and globally, the relevance to community colleges, and current policy challenges is provided (See appendix O). Additionally, the chart maps the Sustainable Development Goals along each issue faced by community colleges. Ayers (2015) found that the community colleges

mission is influenced by political, economic, and social issues. COVID impacts all three and, therefore, will likely influence the mission in the years to come.

COVID-19's Theoretical Relevance for Complexity Science. COVID-19 is highly relevant to the theory of complexity, which is recommended for addressing wicked problems (Elia & Margherita, 2018). For many, COVID brought society to the edge of chaos, due to heightened uncertainty (Waldrop, 1992), as well as turbulence, which is defined as chaotic and random behavior of markets and society (Clancey et al., 2008). Although stressful for many, the edge of chaos is a prerequisite for tackling complex problems (Waldrop, 1992). After all, these tipping points of traumatic change are opportunities to address wicked problems (Wezemael, 2012).

The researcher embraces solution ecosystems, which are considered "well-understood pathways for addressing these wicked problems" (Lichenstenstein & Plowman, 2009, p. 61; Zivkovic, 2017).   A systemic innovation lab is a solution ecosystem for addressing wicked problems and is comprised of key features, such as: a) focusing on addressing complex problems, b) emphasizing place-based local approaches, c) enabling coherent action by diverse actors, d) involving users as co-creators, e) supporting a networked governance approach, and f) recognizing government as an enabler of change (Zivkovic, 2018, p. 349).

Other collaborative strategies adopted include an open-strategy and collective impact. Open strategy encourages greater transparency on behalf of both internal and external constituencies beyond organizational boundaries (Hautz et al., 2017), while collective impact promotes cross-sector collaboration for addressing wicked problems (Kania & Kramer, 2013). Disrupting the system is critical (Lichtenstein & Plowman, 2009) because lock-in can be overcome during this time (Goldstein, 1994).

Summary of Key Findings

This cross-case analysis is based on three data sources, including semi-structured interviews with MSI program founders and/or leaders, research articles and program websites. In summary, the study supports the assertion that community colleges have an important role to play in addressing wicked problems of sustainability (i.e., SDGs), such as poverty, homelessness, hunger, inequality, racism, and climate change. Additionally, the findings support the idea that the mission of community colleges is aligned with addressing wicked problems of sustainability. Finally, multi-stakeholder programs have the potential to create significant value by addressing these complex challenges through entrepreneurialism. In this section, a summary of the key findings will be provided.

Summary RQ#1: The Role of CC for Wicked Problems of Sustainability

RQ1: How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability, such as poverty, homelessness, and hunger? The roles were described by participants in five clusters: educator, strategic leader, local convener, economic development partner, and grant partner. After educator, the most common answer given by the participants was convener and facilitator. However, it was also acknowledged that community college representatives are often not formally trained for convening so some development in this area would be valuable. Under each role, a description of the associated activities is also provided.

Summary RQ#2: CC Mission Alignment – Wicked Problems of Sustainability

RQ2: How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

The value created by the entrepreneurial multi-stakeholder programs generated an alignment between the mission of community colleges and addressing wicked problems of sustainability (i.e., SDGs). In other words, the alignment was found within the value generated by the multi-stakeholder initiatives, as described by the participants. Therefore, I would posit that entrepreneurialism is a key factor in generating the value described. Based on an examination of the data sources related to research question #2, four mission-related themes emerged including student success, access, local communities, and economic development.

Discussion of Findings – Role of Community Colleges

The findings of the study confirmed past research that institutions of higher education have a role to play in addressing wicked problems of sustainability (Dentoni & Bitzer, 2015; Mena & Palazzo, 2012; Schouten & Glasbergen, 2011; Von Geibler, 2013). The participants described five roles community colleges play when addressing wicked problems of sustainability, including the role of educator, strategic leader, local convener, economic development partner, and grant partner. Figure 3 summarizes the roles community colleges take on when collaboratively addressing wicked problems of sustainability (i.e., SDGs) through multi-stakeholder initiatives.

Figure 3

Summary of the Roles of Community Colleges in Addressing Wicked Problems.
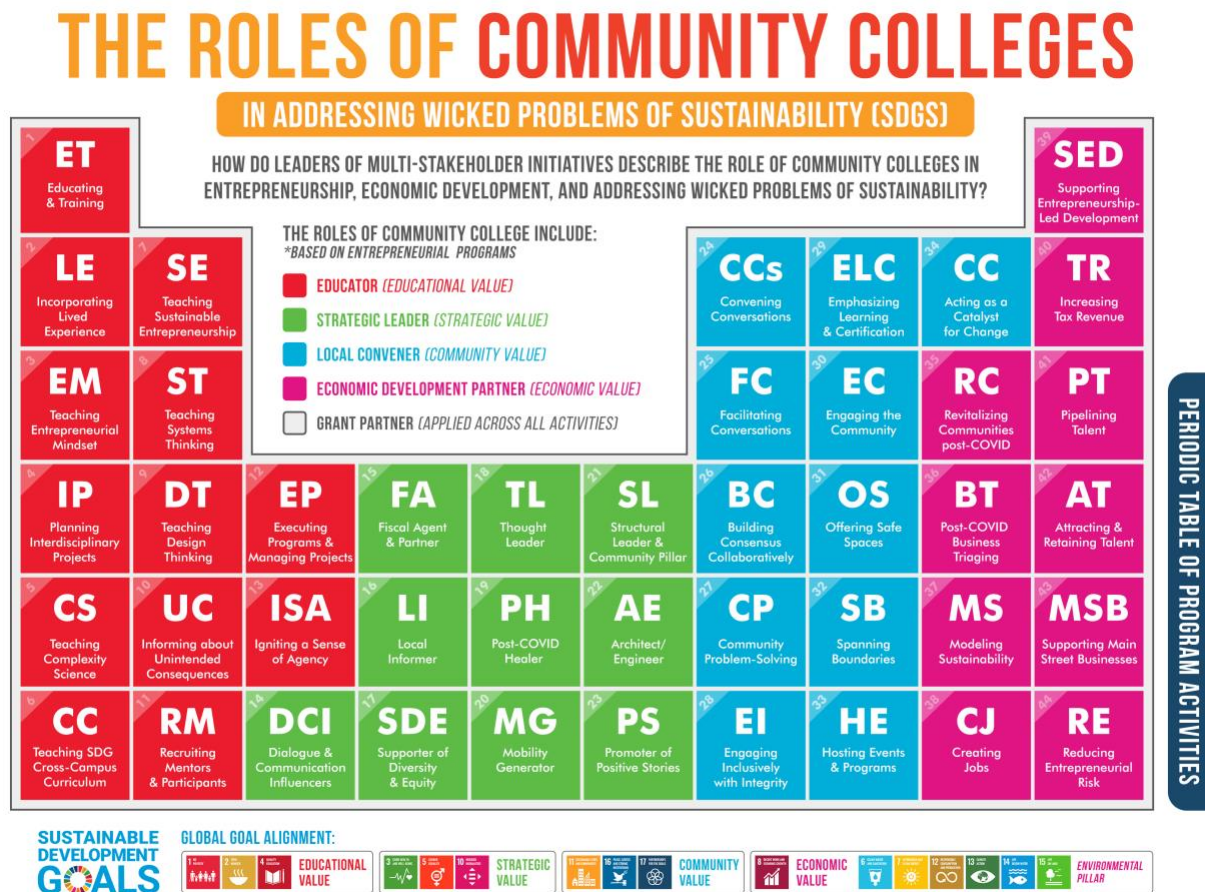
Role of Educator. Past research and the participants' interviews both indicate that while addressing wicked problems of sustainability, academic institutions play the role of educator (Dentoni & Bitzer, 2015; Fowler & Biekart, 2017). These perspectives confirm Calder and Clungston's (2003) research, which recommended eight dimensions for university engagement in sustainability including designing curriculum appropriate for addressing wicked problems of sustainability. Similarly, universities are encouraged to "develop innovative curricula to educate students for sustainable development and create awareness for wicked problems of sustainability" (Dentoni & Bitzer, 2015, p. 37).

The activities within the role of educator include training, incorporating lived experiences of underserved populations, teaching entrepreneurial mindset through problem-based learning, promoting interdisciplinary projects, teaching complexity science, teaching cross-campus SDG curriculum, sustainable entrepreneurship, systems thinking, design thinking, and teaching students about unintended consequences. In addition, the community colleges also recruit mentors and participants, execute programs, project manage, and ignite agency for changemaking. In this section, the researcher provides direct quotes related to each of these activities.

Training is an activity described by the participants within the role cluster of educator. For example, Ms. McPherson championed the concept of teaching "SDGs holistically to every student". Social and Sustainable entrepreneurship are the versions of entrepreneurship most aligned with the Sustainable Development Goals (SDGs), with a modern emphasis on all three pillars of economic, social and environmental sustainability (Pacheco et al., 2010).

Incorporating underserved populations is an activity also described by the participants within the role cluster of educator, including one who explained:

> Community colleges tend to bring students who have a much more diverse set of life experiences and often have lived experiences of wicked problems, they are well situated to use those lived experiences in a way that helps [students] step into their role as a changemaker and fulfill their potential.

This makes sense because community colleges educate nearly 6.5 million students each year, which includes 46% of undergraduate students in America (Labov, 2012). Notably, these institutions boast a much more diverse student population than universities located in the same area geographically.

Teaching entrepreneurial mindset through problem-based learning is an activity described by the participants within the role cluster of educator. Similarly, the literature indicates that

instilling an entrepreneurial mindset provides an ideal skillset in a post-COVID world. The

entrepreneurial mindset is defined as, a cognitive process that empowers individuals to address

problems and creatively generate ideas in uncertain environments (McGrath & MacMillan,

2000). Additionally, the mindset better enables individuals to navigate uncertainty, pursue new

opportunities, generate creative ideas, address new problems, take measurable risks, promote a

growth mindset, iterate or adapt to change, and demonstrate tenacity (McGrath & MacMillan,

2000).

Promoting interdisciplinary projects is another activity described by the participants

within the role cluster of educator. Interviewees advocated integrating interdisciplinary

experiences within the curriculum. For example, Mr. Saddle noted he often designs projects by

"starting with science, then [he] uses engineering, and [integrating art], before moving to the

business application". This aligns with Stephens et al. (2008), which highlighted the importance

of cross-campus and trans-disciplinary engagement.

Teaching complexity science projects is an activity described by the participants within

the role cluster of educator. Dr. Fox emphasized the need to include the curriculum topic of

'managing complexity'. This suggestion aligns with Stephens et al. (2008), who advocated for

universities to teach students concepts of complexity science.

Teaching the cross-campus SDG curriculum is also described by the participants within

the role cluster of educator. Ms. McPherson, who has used the SDG framework globally for

social innovation, agreed that community colleges are well suited for incorporating the SDG

curriculum.

> Many community colleges have programs of study and faculty that influence [the various
> SDG issues]. They could be impactful influencers in place and space, both from a
> resource perspective, but also that students are going to go out there and do something.
> The [SDGs] are basically an extrapolation of the social determinants of health. The social

determinants of health are really about what communities need to do to make it easier for people to have a good stable life. People who are not affected by trauma, poverty and injustice, have to decide that it matters to them and to do something in their professional pursuit addressing some of those issues. Community colleges can teach that as part of the general coursework. For example, you want to be a nurse. Fantastic. How do you learn about being a nurse and also learn about what health inequities and social disparities mean for health in your region, and then go on to figure out how to use some of your time and talent to address those issues? [The SDGs] should be holistically taught to every student but especially in healthcare intervention, technology intervention, education and teaching. Basically, anyone who is pursuing an education degree should be taught trauma-informed care. Anyone who's learning to become a nurse or a doctor should be taught what kinds of health disparities exist among various ethnic and racial groups and how they need to be going into that work prepared to understand and address those inequities. People who are going into the technology space need to be thinking about making space for people who are underserved to have room to enter those fields. According to Ms. McPherson, the SDGs are an ideal framework for problem-based learning, for wicked problems of sustainability.

One interviewee agreed, stating:

I think the benefit of the SDGs taking the primary place in the conversation is that they're goal oriented. You know, they're about setting some sort of directional pursuit and are less theoretical. They're more about how do we understand these underpinning issues and then create a way to address them. So, when you think about our community colleges, what that again gets to is the beginning of a framework for incorporating it into curriculum, right? If there are goals around health and equity, then that also means you can extrapolate from that a way of teaching and learning that is less theoretical and more practical in nature. I can see the benefit of that because they [the SDGs] are about… what do we do about it…. Versus the social determinants are more about the problem messaging. I just think the SDGs on the onset [were] more applicable for environments that had really glaring holes in protections for people who are struggling in ways we don't in the United States. However, I do think there's value in community colleges [creating] a measure of priority around them as almost an institutional value that again drives the way students are learning. Over time, that could literally change the way human beings are educated.

The SDGs are a holistic framework that exposes students to thinking about the world around them and how they might contribute to making it better. It also provides an opportunity for teachers to prompt students to act on their ideas for positive change.

Sustainable entrepreneurship seems to encompass much of the appropriate curriculum, as it operates through a triple-bottom line lens, emphasizing 3ps – people, planet, and profit

(Hockerts & Wüstenhagen, 2010). According to Ploum et al. (2019), sustainable

entrepreneurship includes seven key competencies: a) systems thinking competence, (b)

embracing diversity and interdisciplinary competence, (c) foresighted thinking competence, (d)

normative competence/stakeholder goal mapping, I action competence, (f) interpersonal

competence, and (g) strategic management competence.

Executing programs and projects is an activity described by the participants within the

role cluster of educator. Mr. Brand explained that the community college "became the

operations people who managed the projects and kept them on track and organized things and

served as the executive officer of the operation".

Teaching design-thinking is an activity described by the participants within the role

cluster of educator. According to Ms. Pascal, "Foundational education and skill building for

creative problem-solving, including design-thinking, often used in social innovation, could be

helpful to any one of us. They should be accessible to all of us".

Igniting agency for changemaking is an activity described by the participants within the

role cluster of educator.   Ms. Pascal explained:

> We use the term changemaker instead of social entrepreneur, because changemaker can
> mean a lot. It's a much bigger tent. An intrapreneur means they have to be inside of a
> company, whereas changemaker can also be outside. [Both emphasize] the sense of
> agency. Igniting that sense of agency [for changemaking is the goal].

Teaching unintended consequences is another activity described by the participants

within the role cluster of educator. Participants also emphasized topics not included in the

literature reviewed but are notable. For example, the importance of "skill building for creative

problem-solving, including design-thinking, igniting a sense of agency [for changemaking],"

awareness "of unintended consequences" are all referenced as topics relevant to addressing

wicked problems that should be included in curriculum.

Recruiting mentors and participants is an activity described by the participants within the role of educator. Additionally, Dr. Delgado explained that he often played the critical role of recruiting mentors and participants for the program.

Role of Strategic Leader. Past literature and participants indicate that academic institutions act as strategic leaders when addressing wicked problems of sustainability (Bennworth, 2007; Fowler & Biekart; Boone, 1992). Dr. Sampson explained, "I think the [community college's] role now regarding these wicked complex problems post-pandemic is to be very strategic" by encouraging "1100 community colleges to come up with four or five of their bird-in-hand ideas" then "deploy design thinking" using the "UN sustainability goals" framework.

The activities within the role of strategic leader includes influencing dialogue and communication, acting as a fiscal agent, acting as a local informer, supporting diversity and equity, acting as a thought leader, healing communities after COVID, and generating mobility. Additionally, community colleges act as a structural leader, community pillar, architect/engineer, and promoter of positive stories that often leads to funding for the college. In this section, the researcher provides direct quotes related to each of these activities.

 Influencing dialogue and communication is considered by participants to be an activity within the role cluster of strategic leader. Findings of the current study confirmed that careful and intentional communication is critical when addressing wicked problems of sustainability (Adombent, 2013; Burritt & Tingey-Holyoak, 2013). According to researchers, an emphasis should be placed on framing (Lakoff, 2010). Framing is often viewed as political, which is why community colleges should position views carefully as bi-partisan with the goal of rebuilding America regardless of political affiliation, socio-economic status, race, gender, or any other

factor influenced by logics (Lakoff, 2006). Similarly, Mr. Baker described community colleges as "impactful influencers" by "influencing dialogue [regarding wicked problems], such as racial injustice and inclusion". Additionally, community colleges have significant influence as a result of their "institutionalized features" of economic and workforce development which could be leveraged to promote societal good (Mars, 2013, p. 2013).

Acting as a fiscal agent and partner were repeatedly cited by participants during the interviews. This supports the research that suggests higher education institutions should play the role of fiscal partner for advancing sustainability efforts through multi-stakeholder initiatives (Dentoni & Bitzer, 2015). According to Ms. Squire, by acting as the fiscal agent, the community college is able to "ensure that the money" would be prioritized appropriately and responsibly. Dr. Mattox explained that this role also supports the initiative by providing "infrastructure to hire, pay, and manage the teams from an HR standpoint".

Acting as a local informer is considered by participants to be an activity within the role cluster of strategic leader. Boone (1992) explained community colleges are well suited to act as leaders in addressing wicked problems of sustainability. The institutions are deeply embedded in each community and often are positively perceived by the community in regard to their capabilities, and are knowledgeable regarding social, economic, and political forces that shape the community's culture (Boone, 1992). Mr. Smith confirmed that their program leaders "don't know what a community needs", adding "the community college knows that area much better" and has a "pulse on the needs for training".

"Ensuring diverse inclusion" is cited in the literature as a role of the academic institution (Innes & Booher, 2016). Ms. McPherson acknowledged the community college's "breadth of diversity," which is viewed as an asset that "should be maximized as a way of putting people at

the center of learning from each other and then turning outward to apply whatever they're learning to solving problems". Ms. McDonnel mentioned the college's role as a "resource to minorities and minority-owned small businesses," including "women-owned, African-American-owned, Hispanic-owned, and Asian-owned". She added, "diversity is our strength".

Thought leadership is considered by participants to be an activity within the role cluster of strategic leader. The literature cites the role of scientific advisor as one that academic institutions play while addressing wicked problems of sustainability (Trencher et al., 2014). Mr. Baker confirmed the research by explaining that when addressing wicked problems, community colleges are a "significant contributor and thought leader in not only identifying solutions to those challenges our region faces but providing solutions and outcomes that are measurable and definable through metrics and accountability systems".

Healing communities post-COVID is considered by participants to be another activity within the role cluster of strategic leader. As with most of the roles, some activities expressed by the participants were not included in the literature reviewed but are important to note. For example, Dr. Sampson mentioned that community colleges are well-positioned to help "heal a lot of social issues" because the audience we serve are often "people that have been really damaged further by the pandemic. They were left behind before. But now they're even further behind,"

In addition, community colleges were viewed by Ms. Pascal as "pillars in the community educating a majority of the industry sectors," and "by introducing the SDGs and the work that it represents to our students as they go through their education here absolutely can transform this community".

Acting as an architect and/or engineer is considered by participants to be an activity within the role cluster of strategic leader. The community college's role when addressing

wicked problems is viewed by some in terms of construction. For example, Dr. Taylor described the role as that of an architect or engineer. In contrast, Trencher et al. (2014) described the four-year university's role as that of the builder and developer.

Mobility generators is a phrase used by interviewees when describing the role of community colleges in addressing wicked problems. Mr. Baker described the institutions as, "one of the most impactful generators for economic mobility". The literature agreed but with some caveats. For example, post-secondary education is described by the Brookings Institute as "the gateway to the American Dream" (Reeves & Sawhill, 2021, p. 15). However, the same report also acknowledged the dramatic decrease in upward mobility for the middle class stating that 90% of individuals born in 1940 are today wealthier than their parents, while 50% of Americans born in 1980 are expected to be wealthier. A vast majority of the decline in mobility (66%) is a result of increased inequality (Reeves & Sawhill, 2021).

Positive stories stemming from the initiative are powerful opportunities for generating new funding streams. Similarly, promoting positive stories for funding is considered by participants to be an activity within the role cluster of strategic leader.

Another interviewee described the institutions as, "one of the most impactful generators for economic mobility". Mr. Saddle described the benefit of storytelling for the broader institution from a fundraising perspective:

> [Storytelling is valuable] You leverage it for the board and you leverage it for other sources of funding, and you leverage it with getting students on board. You can leverage it with employers and with getting other faculty excited… adoption by attraction.

Ms. Bryan also explained:

> We developed a really great partnership [with the foundation], because folks who are seeking money, love good stories. And so, one of the things that has been very successful for us is documenting stories of all kinds. There's nothing that opens the checkbooks of philanthropists more than pictures [and stories] of students doing [innovative work].

In addition, participants described the program's value as providing positive stories for funding, paid internships, apprenticeships, and scholarships. The participant interviews validated this observation. One participant emphasized:

> [Community colleges] are open access institutions, which means that we have a direct line to those that I think are most in need. However, access is not the reality for many Americans, which prompts the question: Are community colleges truly open access for everyone or are they only open access for those at a certain socio-economic level?

Role of Local Convener. Past literature and the study's participants describe academic institutions as a convener, which when viewed broadly is considered an interlocutor, (Bennworth, 2007; Boone, 1992; Fowler & Biekart, 2017; Innes & Booher, 2016). The interlocutor includes the functions of convener, mediator, systemizer, facilitator, broker, moderator, and catalyst responsible for assembling, launching and guiding MSIs in order to optimize stakeholder value through collective action. Fowler and Biekart (2016b) described successful interlocutors as having certain attributes, including conflict management for informal authority, high levels of integrity, system sensitivity understanding that all intractable problems are local, an awareness of power and authority for decision-making, an intrinsic motivation, an understanding of various logics, and finally, they do not compromise independence in exchange for partisan outcomes. The role of convener and interlocutor was referenced by nearly every participant.

Convening conversations is crucial to successfully addressing wicked problems of sustainability. In fact, this was one of the most referenced role activities mentioned during the interviews. Findings of the study revealed that participants view community colleges as a convener. Ms. Foster explains this is "because they have so much programming". Similarly, Mr. Brand advocated for community college leaders to invest in building and maintaining "our

skill sets around convening, solution building, and innovating" as well is guarding the community's trust and ensuring we deliver on our commitments and partnerships. These findings confirm the assertion by Morrison et al. (2019) that academic institutions are as "natural conveners" and "facilitators of collaboration". The community college was viewed by the participants as "honest brokers", which aim to "build networks of invested players that, with integrity, moves forward a common agenda to tackle persistent, large-scale social problems" (Catalyst2030, 2020a, p. 9).

Facilitating conversations was another common response during the interviews. Mr. Brand explicitly stated that community colleges often "act as a facilitator in those conversations" when tackling wicked problems. These findings aligned with the research of Trencher et al. (2014), which identified facilitator as one of the six roles universities play within this context.

Building consensus collaboratively is yet another activity under the role cluster of convener that academic institutions play, according to both the literature and the current study's findings. Literature supports the academic institution's role of designing implementation for shared strategies through multi-stakeholder initiatives (Dentoni & Bitzer, 2015). Several of the interviewees described their entrepreneurial programs as collaborative strategies, which is the preferred coping strategy for addressing wicked problems, using multi-stakeholder initiatives (MSIs) (Roberts, 2000). This win-win mindset is considered the most effective strategy when the goal of collaboration during stakeholder dialogue is problem-solving. The form of collaboration often results in broader acceptance and legitimacy (Carcasson, 2013). According to Dr. Fox, community colleges "have to collaborate and create value through that collaboration". He went on to explain that this program supported accomplishing this activity

stating, "[using this program, community colleges] can come together quickly and address complex challenges and not get all wrapped around the axle".

Community problem-solving is seen as an activity of academic institutions both throughout the literature and participant interviews. Specifically, Dr. Sikes stated, "[Community colleges] are the people and communities, problem solvers". Additionally, Ms. Mcpherson suggested that community colleges should "build out the practices that it takes to be a really effective convener" so they can "become a laboratory for social solution development". Dr. Fox even described a concrete example of community colleges acting as community problem-solvers by addressing the wicked problem of "regenerative agriculture, which deals with food systems". Similarly, Boone (1992) advocated for community colleges to address complex community challenges, such as unemployment, healthcare, and substance abuse.

Engaging inclusively with integrity is an activity described by both interviewees and throughout the research. For example, researchers advised that conveners should ensure the inclusion of diverse participant voices (Innes & Booher, 2016). Similarly, Dr. Sampson explained the role of community colleges by stating, "I think [community colleges] are leading with intention and integrity… to include people intentionally".

Community engagement was referenced often throughout the literature and during the interviews. Prompting outreach in the community through multi-stakeholder initiatives is viewed by researchers as aligned with goals of universities (Dentoni & Bitzer, 2015). This is congruent with Ms. Massey's perception that "built into a community college structure are all these community engagement mechanisms". Dr. Fox agreed that, "in community colleges] there are engagement professionals who are our staff, usually not faculty, but they're usually staff

people who, who are charged with the responsibility of engaging the community or the regional economy actors".

Hosting events is commonly referenced during the interviews and throughout the literature. For example, Fowler and Biekart (2017) described 'hosting' events for stakeholders as a role for higher education when addressing wicked problems of sustainability. Meanwhile, Dr. Maddox stated, "the consistent thing is they provide a home for the program. They provide the infrastructure for the program to both be delivered physically and then for the team to be able to function".

Learning and certification is an activity described by interviewees but not necessarily in the reviewed literature. Mr. Brand explained that he sent his "entire business services team (to facilitator training for this program)" because it was valuable to have the entire team certified in complex collaboration, as "they're always trying to collaborate network connect, and leverage".

Other activities referenced during the interviews but not the research include "providing safe spaces" and "boundary spanning". According to Dr. Fox:

> One of the first rules of this program is to create a safe space for deep focus conversations. One of the lessons of our democracy, which we have ignored is that we have to have these civic spaces [such as community colleges] and they have to be safe civic spaces to do complex thinking together.

Dr. Sampson explained, "I may not feel comfortable walking onto the Princeton University [campus] for a dialogue. I didn't go to an Ivy league college" but she feels comfortable on a community college campus.

Catalysts of change were words used by both the interviewees and throughout the literature. Social entrepreneurs are described in the literature as change agents who aim to create and promote social value (Dees, 2001). In addition, social entrepreneurs "are driven, creative individuals who question the status quo, exploit new opportunities, refuse to give up, and remake

the world for the better" (Bornstein, 2004, p. 15). Boone (1992) described the role of community colleges as collaborative catalysts. This is due to the fact that colleges are viewed as a networked hub that often solves identified educational, social, economic, or environmental issues (Boone, 1992). Dr. Taylor and Ms. Sampson described the community colleges as "catalysts" and "change agents".

Role of Economic Development Partner. Past literature and the current study indicate that academic institutions act as economic development partners when addressing wicked problems of sustainability (Batie, 2008; Mars, 2013; Weber & Khademian, 2008). Revitalizing the local community was an activity referenced in both the literature and during the interviews. For example, community colleges are described as "the nation's overlooked asset," based on their ability to "retain displaced workers and serve the community during turbulent times" (College Board's National Commission on Community Colleges, 2008, p. 5). Ms. Flaherty explained, "we're seeing a lot of conversation and heightened awareness of the importance and the value of job creation and community vitality". She added, "economic developers have started to take note that, when you're driving down a corridor and you see vacancy signs and all of a sudden, your dry-cleaning service and your favorite pizza place no longer exists," entrepreneurial vitality becomes a priority. Ms. Flaherty suggested, this is a "great opportunity to rebuild better and differently" alongside economic development partners.

Modeling sustainability is particularly aligned with the mission of community colleges. In fact, academic institutions face increasing pressure to lead change by adopting sustainable strategies (AACC, 2011; White & Cohen, 2014). Over 700 college and university presidents, representing 6 million students have committed to addressing global climate change by signing the American College and University Presidents' Climate Commitment (Sustainable

Development Goals, 2020). Researchers proposed four roles in academic, regional sustainability

initiatives. One of the proposed roles is installing energy efficiency throughout campus

buildings (Bennworth, 2007). Mr. Nelms explained, "We don't always rally lots of people

around [sustainability], we often do it through modeling". Ms. Henderson contended

> Our job [as community colleges] is mostly that first pillar… the economic, and then secondarily the social piece as a community convener. When you have a land grant, there's an emphasis on community more than it is on college. We try to be present at everything and when it's not happening, we convene it and facilitate it or we model it.

Mr. Nelms offered specific examples of modeling sustainability, stating, "every roof of

every building we have and all of our extra land in the back is now solar. All the money from

that solar provides scholarships to students to go to college". During that particular interview,

the researcher asked the interviewee to dive deeper into why issues like climate change matter to

the community college. Ms. Clark explained:

> The climate affects our air quality, our soil, and our water systems. The ag system is completely dependent on the quality of the environment- the air, soil and water. Without a healthy environment for [farmers] to grow their goods, then… that will truly be the death of our rural economy. So, [the community college] invested in significantly in solar rays, and it's one of the largest in the country for a community college. It's critical for us to have that sustainable energy because of financial stability, but it also gets us off the grid.

Ms. Henderson added that the local community college is modeling wicked problems

surrounding workforce and racial inequities, in addition to the environmental issues:

> One of the things that we are currently [in partnership with the community college] trying to solve for is the idea that any job anywhere is exacerbating workforce problems, environmental issues, and racial inequities. We have a talent initiative aimed at being more intentional and directed about where public incentives go, to support businesses around placement, retention, and recruitment.

Job creation was mentioned several times during the interviews. In fact, one of the

program websites stated that out of the 10,000 small businesses participating in the program,

"47% of the businesses created jobs after 6 months, 53% of the businesses created jobs after 18

months, and 56% of the businesses created jobs after 30 months". Additionally, Ms. Flaherty

specified that "over the last five or six years, young and new firms are creating between 14,0000

and 15,000 net new jobs every year" in just one city they work with. In a separate county, the

same organization touted 25,000 new jobs created by firms less than 1 year old, with an average

wage of $34,000. This is critical according to the Founder of the Center for American

Entrepreneurship, John Dearie (2021). He explained, "if it were not for businesses younger than

five years old, the jobs base in this country would actually shrink. New businesses are the

principal source of innovation, which drives economic growth and job creation".

Triaging businesses post-COVID was also an activity Ms. Flaherty described, stating,

"We're seeing an increased need for education, training, coaching, and mentoring around

reopening and everything from growing the customer base to how to keep your employees safe"

and "[Community colleges] act as that neutral party. Their role is to help entrepreneurs' triage

where they're at and what type of assistance they need".

Entrepreneurship-led economic development was emphasized by the interviewees. Ms.

Flaherty explained what seemed to motivate economic developers to support small businesses

after COVID, "all you have to do is drive up and down your main streets and see shuttered

businesses and vacancies. They start to really understand the importance of these small

businesses". Community colleges often partner with these economic developers to promote

entrepreneurship-led economic development.

Increasing and retaining tax revenue was an activity mentioned during the interviews.

For example, Ms. Clark stated, "Community colleges play a vital role in providing an affordable

education so that people can either create jobs or find a better job in the community, so that their

tax base stays here". Ms. Flaherty explained, "[communities] are seeing a significant drop in revenues and sales tax. Those are all measurable things [connecting back to the programming]".

Talent recruitment and pipelining was described by participants as an activity community college played when addressing wicked problems of sustainability, especially economic growth and jobs. Dr. Delgado emphasized the state's challenge filling public sector jobs:

> There are 2.1 million students in the state, which had occupational openings across the state to fill. If we could create alignments, we could identify a local supply chain or pathway for students to find occupations in need and in demand across the state. So that somewhat [addressed] the state's problem.

Talent attraction and retention were also cited as activities of community colleges when addressing wicked problems surrounding economic growth. In fact, several program leaders viewed their programs at the community college as "retention strategies" that were a powerful support mechanism for economic developers. Mr. Brand explained, "[economic developers] don't really have a business retention strategy. This is a business retention strategy [for them]". Mr. Nelms stated, "[This program, in partnership with the community college] works very well for the retaining, helping business and industry be innovative and grow from new products and new innovations".

Supporting main street businesses was an activity mentioned by the participants. For example, Mr. Brand mentioned that the college brought "together entrepreneurial services for main street businesses and startups in the region to be able to increase access and quality of service and number of businesses served". Ms. Love also mentioned that in addition to partnering to offer incubator and accelerator services, some colleges have launched commercial kitchens designed to help for culinary entrepreneurs launch businesses.

Helping to reduce the risk of entrepreneurship through entrepreneurial programming and mentorship is emphasized during the interviews. Dr. Sampson explained:

What we found through the EEVF's proof of concept is, if you give a would be entrepreneur, maybe someone from skilled trades or someone with a barbershop idea, if you give them anywhere between $7,000-$8,000 of capital, they can buy a barber chair, they can get a license, they can buy some tools and in six months, they can be cash positive. We've seen that with a proof of concept involving 50 businesses. I think it's almost 60 now that are still in operation. We profile some of the entrepreneurs in the book, Impact Ed. I think almost all of them are still in operation. Why? Because they got mentoring and support through the community college.

Role of Grant Partner. Community colleges often act as a grant partner when addressing wicked problems of sustainability. In fact, this role threads through each of the previous roles mentioned. After all, community colleges may act as the educator, strategic partner, convener, economic development partner, or a combination of the four when applying for, securing, and executing grants. Additionally, the activities aligned with each role may be explicitly included in the grant. Community colleges have an opportunity to pursue grant funding to support rebuilding better and more equitable communities post-COVID. One program director provided an example of how the local community college leverages grant funding to address wicked problems. Ms. McPherson emphasized:

The community college is in receipt of grant funding that is intended to support students who struggle with being unhoused. We partner with them to pull our resources because those resources are restricted to pretty specific things like housing, right? [We are] in the business of housing. We help with things like emergency food, emergency utilities, clothing, allowances, and technology support so that they have the capacity to learn in school and have the same technology other students have. A really practical partnership is figuring out what [the community college] is restricted from doing and figuring out how we can fill in those gaps, pool our resources, and stretch our dollars.

Discussion of Findings – Mission Alignment

The literature emphasizes the importance of ensuring the institution's objectives align with the efforts to address wicked problems (Trencher et al., 2014). While examining data sources related to research question #2, four mission-related themes emerged including student success, access, local communities, and economic development. According to Ayers (2015;

2017), each theme is aligned with the language used in mission statements of community

college. Additionally, Ayers (2015) predicted that sustainable practices "may become a defining

characteristic of legitimate institutions," while the AACC (2011) reported that, "sustainability is

rooted in our mission and community colleges connect with tens of millions of people who will

be the sustainability leaders of tomorrow" (p. 1).   Finally, the alignment between the mission

and wicked problems of sustainability is supported through the value of the entrepreneurial MSI

programs. Figure 4 contains a summary of how the community college mission is aligned with

addressing wicked problems of sustainability (SDGs).

Figure 4

Summary of CC Mission Alignment with Addressing Wicked Problems
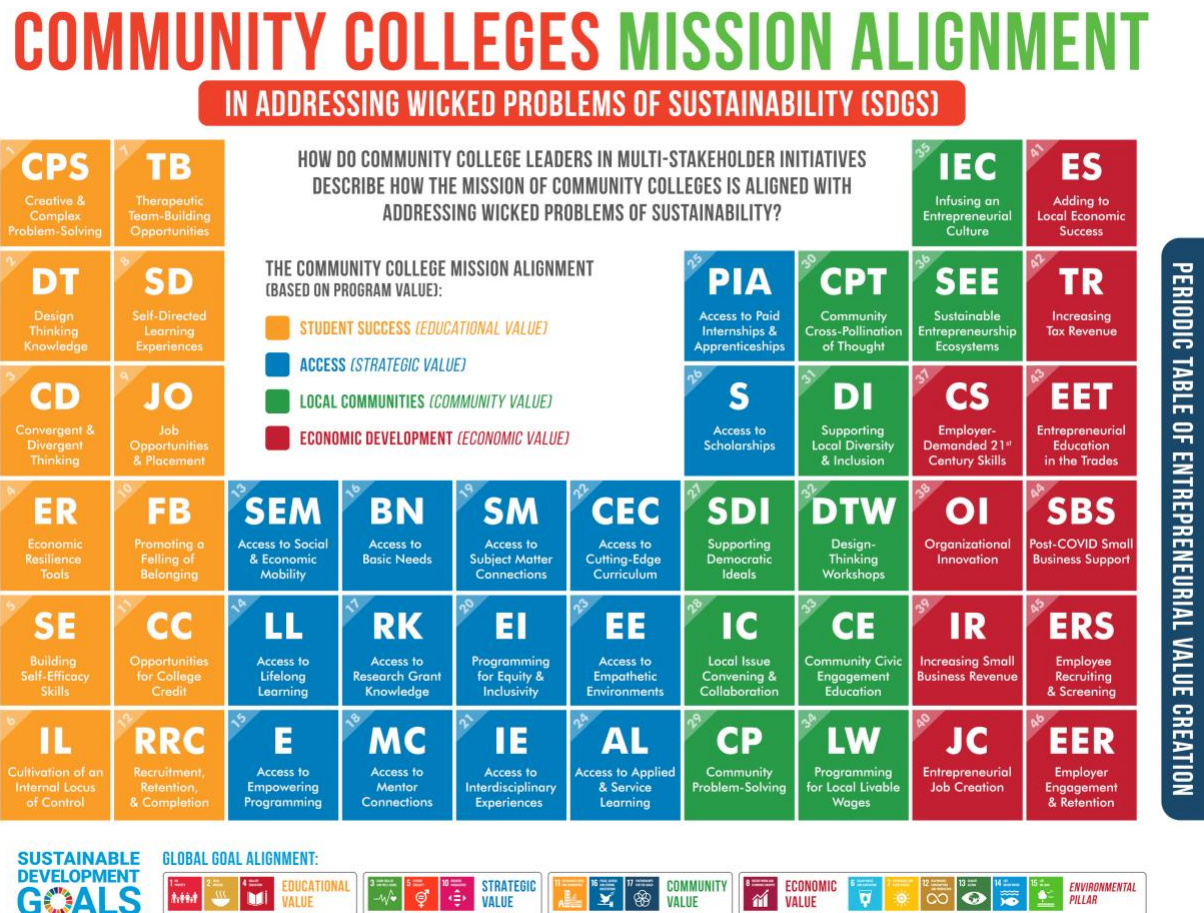
Zilahy and Huisingh (2009) emphasized the following benefits of addressing wicked problems for higher education institutions. The benefits include (a) educational and research benefits, (b) access to new sources of funding, (c) stakeholder engagement, (d) credibility and public image, (e) regional benefit, (f) new products and service development, (g) mutual learning, (h) student engagement, and (i) the ability to make system-wide changes. Benefits for community college students include new relationships, learning opportunities, and reciprocity. For society, the benefits include systems thinking perspectives to address social, economic, and environmental issues, new products and services, mobility for underserved, low-income, and

unemployed individuals, fundraising for support, visible action toward sustainable development, network facilitation, convening, and building bonds through partnership.

The value of these benefits is quite notable. For example, Ms. Flaherty noted that 15,000 jobs were created through entrepreneurial efforts in the community. Since economic development and job creation are widely considered core components of the community college mission, the program's contribution to supporting that outcome is aligned.

CC Mission Alignment with SDG – Education for Student Success. Past literature, along with the participant feedback described an alignment between the mission of community colleges for student success and addressing wicked problems of sustainability. For example, Ayers (2015) reported that sustainable practices may "become a defining characteristic of legitimate institutions" (p. 205). Additionally, the AACC (2011) acknowledged that "sustainability is rooted in our mission".

According to the interviewees, the entrepreneurial programming created the value alignment by instilling skills, such as creative and complex problem-solving, design-thinking, convergent and divergent thinking. Additionally, participants believed the students benefited from increased economic resilience, self-efficacy, cultivation of an internal locus of control, therapeutic team-building, self-directed learning, job opportunities and placement, a feeling of belonging, and college credit. Finally, participants mentioned that the programming supported student recruitment, retention and completion, leading to increased student success.

Creative and complex problem-solving skills are gained from the entrepreneurial programs, according to both the participants and the existing research. For example, the literature indicates that creative problem-solving is a deliberate technique used to address wicked problems (Puchio et al., 2012). Dr. Brooks noted:

The jobs of the future will require these [complex problem-solving] skills. According to the participants, several of the programs infused the creative and complex problem-solving skills critical for the student to be successful. Similarly, Mr. Saddle, a community college faculty member, offered an example of a course designed to support social change.

He explained, "the anthropology and sociology departments [partnered] to create the state's first AA degree for Modern Making. The most popular course in the suite is called 'Making for Social Change'.

Design thinking skills are gained through the entrepreneurial programs, according to the interviews. For example, Ms. Bryan described design-thinking as:

an empowering model that shows [students] what's possible in life and it alters the way that they think. They begin to realize that they actually have enormous experience, fortunately, with some of the most wicked problems that exist in communities. And that actually gives them a competitive advantage as a design thinker.

Convergent and divergent thinking skills are gained from the entrepreneurial programs, according to the participants. Dr. Brooks explained: "K-12 education develops these really intense convergent thinking skills" while design thinking exposes students to divergent thinking skills, which is "what employers desire. They want people to come up with new solutions, not pick from the normal bucket of remedies that we could use to solve a problem". The literature cites divergent and convergent thinking as two styles of critical thinking for addressing wicked problems. The literature aligns with these perspectives. According to Puccio et al. (2012), creative problem-solving instills both divergent skills, which involves connecting new and unrelated ideas, as well as convergent, which involves using analytical skills to organize ideas linearly. In sum, participants believed the program contributed to convergent and divergent skills, which increase the student's success.

Economic resilience is a benefit that students gain from the entrepreneurial programs, according to both the participants and the existing literature. For example, Ms. Parsons

explained, the tech skills gained through the program "might be the difference between being homeless or living above the poverty line" while also "making money by selling products online, such as printed t-shirts and images on mugs [which can be translated into a business]". According to Mr. Smith, the program helps regular people "sustain and support themselves through the exchange of value… and that provides much more economic resilience even if it can't be measured as economic output locally or bringing in money from outside". Some literature supports the assertion that educating for wicked problems is aligned with the mission of student success for community colleges. For example, the American Association of Community Colleges' (AACC) Center for Sustainability Education and Economic Development (SEED) noted that, "community colleges are ideally positioned to help ensure that low-income under and unemployed workers can advance into family-sustaining careers, while the communities in which they live improve resilience to climate insecurity" (White & Cohen, 2014, p. 7). The interviews and participants collectively describe economic resilience as aligned with the student's economic success.

Self-efficacy and leadership are valuable benefits infused through the programs, according to the participants. For example, Ms. Bryan mentioned, [the program] is empowering for the student" because it builds self-efficacy skills, which "you just can't teach with a book". Student success is increased through opportunities to build self-efficacy from leadership opportunities.

An internal locus of control supports the student's ability to be successful. For example, Ms. McPherson explained:

> The average graduation rate for a homeless kid or a kid that struggles with being homeless off and on is between 72 to 77% in a given year. Ours is upwards of 90% and that has to do with us creating space for them to belong and to be comfortable addressing their trauma and building resilience.   It's a formula for building the internal locus of

control and resilience in a child, which then translates practically into completing the academic pursuit ahead of them and envisioning their life as a stable adult.

In other words, the participant perceives the program is a key component of increasing the graduation rate by providing support which also increased the student's internal locus of control.

Therapeutic team-building is another benefit of the programming, according to the participants. For example, Ms. Parsons offered several examples of how the program was leveraged across different student groups. She explained, "we had a team-building program" for various student clubs supporting different issues and causes using entrepreneurial "making". The program even offered a candle-making session after the Christchurch shooting.

Self-directed learning is described as a benefit of the programs and also a key component needed for the student to be successful. While COVID has certainly dealt many challenges, Ms. Foster believed, "COVID [provides] an opportunity to become self-directed learners. This experience is almost like a living lab. The skills [from this program] are precisely the skills that are going to make you successful" [long-term].

Job opportunities and placement are described by the participants as a benefit provided by the entrepreneurial programs. The programs provided "pathways for internships and job opportunities," which supports long-term student success. Dr. Delgado asserted:

> The biggest gap I find is the failure to engage employers in a meaningful way that leads to placement [for the students]. I can engage the state and they'll give me a workforce development plan. They can tell me where the vacancies are. I can go back to the community college and build out a coursework to fill these vacancies, but we don't go the last mile and get into a formal public private partnership agreement that says, if we build this for you, you'll hire them.

However, Dr. Delgado acknowledged untapped opportunities to improve the process of connecting students to employment.

Why there aren't batches of student completions in data that you can extract without names and perhaps say, 'we have 150 graduates this year of these types of things'. Why can't there be a clearing house where employers can say, 'well I need five of this… and then we match them up? 'Here's the 10 students that meet that criteria. And in exchange, you can have contact with those students'. And maybe we have to get an agreement by the student marking a box. Yes, you can share my information with employers. There's fear of tracking, but at least give them the choice if they want it or not.

For years, community colleges have focused solely on educating the student but many question the point of education with no direct job pipeline. This is viewed by many as an opportunity to dramatically improve the community college's value proposition.

The feeling of belonging was described as an important benefit of the programs, according to the participants. McPherson pointedly explained:

If you boiled it all down to one thing, it would be the value of belonging and being surrounded by people that understand the circumstances because they're sharing them. So, they boost each other and they can talk about things comfortably. They can find and rely on each other.

College credit is described by participants as a benefit of the programs explored. Students often take workforce programming, which offers no college credit. Several program leaders interviewed collaborate with the for-credit divisions to design solutions so the students are able to receive credit for their time. Mr. Brand commented:

We grant advanced standing to students who complete the certification. They complete the manufacturing skill standards, council's certified production technician. They go through 160 hours of training and get four national certifications. And when they're done with that, if they earn their certification, they get credit for six hours, six credit hours in advanced manufacturing.

Recruitment, retention, and completion are described as a benefit of the entrepreneurial programing, according to the participants interviewed. Ms. Parsons, described the program's goal to better serve underrepresented, veterans, and first-generation college or foster children. She acknowledged that the field of STEM "can be a life-changer for students in our area," which supports the student's long-term success. Additionally, the connections developed were

"powerful for retention because students need to develop a meaningful relationship. This is the

#1 reason students drop out. They don't feel connected to anyone or anything". Yet another

participant described how the program supported recruitment:

> The mobile maker space was brought to elementary schools and high schools, using the space as a creative approach to getting students interested in science, technology, 3D printing. The moment they showed interest, they were invited to various events on campus. It was used as an outreach tool.

Ms. Massey explained that enrollment was influenced simply by the community college

marketing themselves as a "changemaker campus".

> [during the program] Admissions staff asked, 'did the fact that we're a change-maker campus influenced your decision to enroll in this institution?' They saw some significant number of students saying that it influenced their decision to enroll at [that institution] versus another institution.

CC Mission Alignment with SDG – Leadership for Equal Access. Past literature and

participants describe an alignment between the mission of community colleges for access and

addressing wicked problems of sustainability.   Traditional measures of student success relied on

retention and completion (Goldrick-Rab, 2010); many researchers believe the traditional metrics

"neglect key relationships between societal structure and stratification processes" and non-

academic barriers, such as housing insecurity, food insecurity, as well as a lack of transportation,

childcare and mental health services (Goldrick-Rab, 2010; Hearn, 2006; Walters-Bailey et al.,

2019). Therefore, increased access leads to increased success. Notably, the non-academic

barriers are also aligned with the Sustainable Development Goals (SDGs).

Additionally, researchers have determined that topics, such as poverty, homelessness and

hunger are not explicitly listed, 'socio-economic mobility, 'economically disadvantaged' and

'barriers' are mentioned in community college mission statements (Williams & Nourie-Manuele,

2018). In fact, researchers have called for including poverty more explicitly in mission

statements. [Community colleges] are open access institutions, "intended to democratize opportunities" for all students but the truth is, there is still a significant correlation between socio-economic status and completion (Goldrick-Rab, 2010). Therefore, equitable access is not the reality for many Americans, which prompts the question: Are community colleges truly open access for everyone or are they only open access for those at a certain socio-economic level?   Interviewees described the program's value as supporting the college's mission of access.

As with the previous section, the entrepreneurial programming created the value alignment through encouraging social and economic mobility, lifelong learning, empowerment, basic needs, research grant knowledge, mentor connections, subject matter connections, equity and inclusivity, interdisciplinary experiences, cutting edge curriculum, empathetic environments, and applied learning. In addition, interviewees believed that the programming provided paid internships and apprenticeships, as well as scholarships. This section will serve to summarize the literature and interviews surrounding the community college's alignment with addressing wicked problems of sustainability, specifically in terms of access.

Social and economic mobility for the students are benefits of the programs, according to the participants. Mr. Brand pointed out:

> The community college mission as a whole is to give individuals a dual pathway to social and economic success... the thought being that not all of us are destined for a four-year education that will yield what we have been told previously as the sustainable way of life.

This assertion is aligned with the literature indicating community college missions are influenced by the political, economic, and social landscape (Boone, 1992). The needs of society have shifted dramatically as a result of the coronavirus pandemic and these shifts should be

reflected within community college mission statements. Social and economic mobility, in particular, should be reexamined.

The participants expressed a belief that community college students who participated in the program enjoy increased access to opportunities for social and economic mobility, which is cited in the mission statements of community colleges. For example, an analysis of 200 community college mission and vision statements found the words "socio-economic mobility" as explicitly mentioned in the statements analyzed (Williams & Nourie-Manuele, 2018). Important to note is the fact that while post-secondary education is described by the Brookings Institute as "the gateway to the American Dream" (Reeves & Sawhill, 2021, p. 15). The same report also acknowledged the dramatic decrease in upward mobility for the middle class. For example, 90% of individuals born in 1940 are today wealthier than their parents, while 50% of Americans born in 1980 are on track to be wealthier than their parents. A vast majority of the decline in mobility (66%) is a result of increased inequality (Reeves & Sawhill, 2021). So, while the mission of the community college is firmly rooted in providing access, and mission statements affirm this intention, the reality of societal inequality is often working against the intention.

Lifelong learning is viewed as a benefit of the programs, according to the interviewees. As Dr. Taylor explained:

> Our mission is to support lifelong learners- to create students who are prepared for career and academic development. When you're looking at it through that [SDGs] lens, you can't create a lifelong learner if students can't access learning. You can't prepare students for career academic development if they can't meet the basics of Maslow's Hierarchy of Needs.

Empowerment is described as a benefit of the programs, according to the participants. Ms. Foster explained, "everything we are doing should be empowering to the students. We should be working from an empowerment model, not a deficit model". The program provides

students and communities with access to opportunities for empowerment, which they may not

have had otherwise.

Basic needs of the student are also described as a benefit of the programs, according to

the participants. For example, Mr. Nelms explained:

> The number of kids in the free and reduced lunch program in some [of our] area exceeds 50%. That's very concerning. Whatever we can do to get those, those kids into degree certificates and completion is, significant for reducing barriers. It's not only the kids, it's their parents too. We have a lot of single parents going through the technical programs. The career tech programs help lift those people out of poverty. With the huge unemployment that we saw in the early stages of COVID, our students are worried about where their meals are going to come from.   If their parents weren't working, maybe they're the ones that had had the part-time job. People had [and still have] some serious food insecurity. We talk weekly about our food pantry and keeping that stocked. [These COVID-related barriers have] impacted enrollment significantly.

Ms. Love added:

> One of our employees that works directly with students came to realize how many students actually [experienced] hunger issues. So, they just opened a food pantry, and it's not just food, it's clothing and stuff like that, too specific just for the students.

The participant's perspectives align with existing literature that describes basic needs as non-

academic barriers (Waters-Bailey et al., 2019; Goldrick-Rab, 2010).   These non-academic

barriers ultimately impact the traditional student success metrics of retention and completion

(Goldrick-Rab, 2010).   Socio-economic status is correlated with completion (Goldrick-Rab,

2010). According to Waters-Bailey et al. (2019), non-academic barriers include housing

insecurity, food insecurity, lack of transportation, dependable childcare, and robust mental health

services.   Hearn (2006) acknowledged that traditional metrics of student success often "neglect

key relationships between societal structure and stratification process, state and federal politics,

policy implementation and student outcomes" (p. 441). For this reason, researchers have called

for community colleges to include the word "poverty" more explicitly in the mission statements

of community colleges, as a response to the high rates of hunger and homelessness in community

college students (Goldrick-Rab et al., 2017). Collectively, the research and participants'

interviews suggest an alignment between the mission of community colleges and addressing

wicked problems of sustainability, such as poverty and hunger.

Research grant knowledge is viewed by participants as one of the benefits students

receive through the programs. Mr. Nelms acknowledged:

> Most of the students aren't doing research or working with a professor who's doing research [that requires] the scientific process so they can't yet necessarily apply for things like an STTR grant. However, they will be able to do that at the next level when they go on to the university level. So, this is like the groundwork for them to be able to be more successful at that higher level.

Ms. Clark explained, the early access to scientific research and grant knowledge gave

students an edge later on. She added, "As a national instructor, now I'm seeing the people who

had solid training at a foundational level succeed and do far better than those who really didn't

have that kind of training". According to Mr. Nelms:

> One of the graduates [of our program] went on to compete at a state level and won that competition, and then applied for a USDA grant, which could be STTR coming out of the university, or it could be SBIR, which is more community focused. It gives a lot of exposure and credibility to our program.

Mentor connections are also considered a benefit of the program, according to the

participants. For example, Mr. Nelms explained, "[If a student] comes up with a new glove or a

new way to fix an engine, you get to build it and be surrounded by mentors with industry

experience that that is important". Mr. Aguiar described how access to mentors in a rural

community supports equity: "We can bring technology, mentors, and resources remotely to those

rural areas and that will level the playing field for our students".

Subject-matter connections are described as a benefit of the program, according to the

participants. For example, Mr. Nelms maintained, "subject-matter expert network connections

will come in handy for them later, as they pursue at least in the educational side". He further

said that when community college students have access to professional connections, they have an

increased chance for success in their [personal and] professional lives.

Supporting equity is considered a value of the programs, according to the participants.

For example, Ms. Foster stated, "if by sustainable development goals, you mean social justice,

human development and equity… These are, of course, the major goals of the community

college system at the moment. In fact, these are very explicitly the goals". This statement

supports an assertion that the community college mission is aligned with addressing wicked

problems of sustainability. Similarly, opportunities for inclusivity are described as a benefit of

the programs, according to the interviewees. Mr. Saddle pointed out that the programs provide

opportunities for racial, cognitive, and other types of equity and inclusivity:

> Community colleges are the most radically democratic system of education in the world.
> Our bar for entry is ability to benefit, which either sounds revolutionary and democratic
> to people, or it sounds like a slight, and to me it's revolutionary and democratic. And so,
> we see the most diverse population of students…. They may be a lifelong learner,
> wanting to improve job skills, wanting to transfer, or wanting to take a class. That makes
> us an environment where lots of different ideas and different kinds of ways of knowing
> and different kinds of people.

Interdisciplinary experiences are described by the participants as value provided by the

programs. For example, Mr. Saddle accurately contended that, "wicked problems are not solved

or won't be solved by siloed, narrow, and traditional ways of thinking through problems". His

college's makerspace aims to influence:

> habits of mind and ways of thinking for different kinds of students and have them look at
> ways of solving problems. The way a musician and a theater arts person and an engineer
> are going to solve a problem in concert is different than the way an engineer might solve
> the problem alone or a group of three engineers.

He went on to say that the program's goal is to, "open up students' minds to these other

ways of thinking or other ways of attacking these challenges through interdisciplinary

conversations. I think that is the only way we, as a human race are going to really tackle" these

problems. Mr. Saddle also noted:

> [This program] is a discipline agnostic general education Makerspace. We are
> intentionally not a STEM space or an engineering space. The curriculum is an open
> invitation to hobbyists, teachers and business people wanting to start businesses. The 18-
> 24-year-old male will show up at the space anyway.

Cutting edge curriculum is a benefit of the programs, according to the participants. Mr.

Nelms expressed that the college's goal was to provide access to "the most advanced

entrepreneurial training program there is industry-wide".   He emphasized that it was important

to the community college to provide a recognized, credible, training program that could scale.

By setting the bar high for a cutting-edge curriculum, students and community members were

able to access curriculum that is usually set aside for major universities. These community

college leaders believe access should not be about the bare minimum; it should be about

providing access to the best.

Providing empathetic environments was another value provided by the programs,

according to the participants. Additionally, the programs were supporting mechanisms for that

empathy.   For example, Dr. Brooks suggested:

> Community colleges can separate themselves extensively by being an environment that is
> deeply empathetic. There's a significant amount of empathy within the community
> college system overall, but then within the classrooms, the students who are coming from
> many different life experiences are able to develop this rapport and degree of empathy
> with one another that I think really is powerful. And I think that that helps to address
> some of those wicked challenges that students face. The deep diversity, even within the
> classroom and not just racial diversity, but cognitive diversity. The demographic diversity
> from age to gender to sexual identification. I think the thing that's lacking today, because
> of the political discourse and societal wicked problems, is just a general lack of empathy
> for one another. It's not there, you know, for whatever reasons. People are angry, people
> are frustrated.

Ms. Nash mentioned a recent Ted talk:
> The speaker was [a social entrepreneur]. In the talk he said he believed strongly that
> entrepreneurship can heal the wounds of a divided nation, one social business at a time

because people may feel angry, but they can come together around making their communities better, no matter what those personal disagreements might be between each other. A great example of this is Jimmy Carter's initiative, habitat for humanity. I've worked on habitat for humanity initiatives before as a volunteer alongside people who are roofers and not even know what a roof is and there were definite political differences there. But man, where we bonding and getting together to build a home for somebody that was in need for it. So, I believe strongly that the design thinking center of practice will help to heal those wounds through different initiatives that we offer. I like that these Centers of Practice are at an educational institution and not just any, but at a community college specifically. If the same thing was at a university, my hypothesis is it wouldn't feel accessible to the community. So, I think having this rich resource available in communities to the people who will feel welcomed there, is going to be invaluable.

Nash also asserted, "I think a community college education is often a more accessible way to start the educational journey for someone who might find a four-year degree a bit intimidating" because it is so welcoming. Community colleges and these specific programs all provide access to empathetic environments not quite as common on a traditional university campus.

Applied learning opportunities was a benefit for the students provided by the programs, according to the participants. According to Dr. Brooks, "[Applied learning is] what community college is all about". This is similar to the previously mentioned pedagogy of problem-based learning.

Paid internships and apprenticeships are described as benefits of the programs, according to the interviewees. This is critical because often, community college students are at a disadvantage because while university students can often afford to accept non-paid internships, community college students often cannot, due to inequality and life circumstances. This benefit further levels the playing field for community college students. Ms. Squire explained that the Vice-Chancellor required paid student internships and work-based experience to be central to any grant proposal or project under this program umbrella. To support this mandate, "employers

were invited to the campus and to be part of curriculum" and Mr. Saddle "deputized student

internship teams and paid them through [the program]". Another participant noted:

> We had to tell a workforce story in order to, have access to the funding and it was an important part and became more so later in the grant. We used Makermatic to do that. For this event, employers came in and defined a problem and students worked on that problem. Ultimately, this led to student internships.

Scholarship opportunities are mentioned as a value of the programs, according to the

interviewees. For example, Mr. Brand described the program's,

> ....no asterisks funding, which is based on a frustration with workforce boards over the long haul, where they always say, well, we have free training available. Then there's a big asterisk at the end that says, if you're in this economic group, and if we enroll you in, if you do this, and what I wanted to say was, if we say we got free training, we better be able to turn nobody away. If you're interested in doing this and you can pass this test, then you're in, then you will get a scholarship. If you can't pass the test, we'll teach you how to pass the test. You know, so I don't want to turn anybody away. At the very bottom of that list is our sustainability fund, because those are the most flexible dollars we get from our employers that don't have any federal regulations, residency requirements, income guidelines, or anything like that. And that's a thousand dollars. That fund currently has maybe $200,000 in it to fund scholarships. We gathered up all the funds that we had at our discretion. So, the workforce development board has things like adult programs, dislocated worker, and things like that, that can fund the initial payment of the scholarship for the student but we also have funds at the college for scholarships as well. So, we put those into the mix. One of our counties gives a $100,000 a year to fund scholarships for short term workforce development or workforce training program tuition for their residents. And we have different pots of money like that. So, what we do is we stack up those funds from the most restrictive to the least restrictive. And then we just test each person against those until one sticks".

CC Mission Alignment with SDG – Convening for Local Communities. Past research

and the interviewees each describe an alignment between the mission of community colleges for

supporting local communities and addressing wicked problems of sustainability (Ayers 2015;

2017). The entrepreneurial programming created the value alignment by supporting democratic

ideals, issue convening and collaboration, community problem-solving, cross-pollination of

thought, diversity and inclusion, design-thinking workshops, civic engagement, livable wages,

infusing entrepreneurial culture, and sustainable entrepreneurial ecosystem cultivation. This

section will serve to summarize the literature and interviews surrounding the community

college's alignment with addressing wicked problems of sustainability, specifically in convening

for local communities.

Support for democratic ideals is viewed as a benefit of the programs, according to the

participants. Specifically, interviewees describe community colleges as "democracy's college".

According to Dr. Sikes:

> Community colleges are 'democracy's college' in terms of mobility… social mobility
> and financial mobility. Democracy only works when there is a middle-class. The
> biggest challenges that we face right now, politically in this country, is polarization and
> that's happening because of the haves and the have-nots. Democracy doesn't happen
> without a middle-class. We build the middle class. Without community colleges, this
> nation will not last, we will not stand the test of time.

Ms. Pascal added:

> It isn't just, 'do you have the skills and the knowledge to be effective in the workplace',
> but' do you understand the responsibility and the level of commitment you should have
> as a citizen and what it means to uphold democracy?' The connection to wicked
> problems is that sadly we are more connected than ever before because we've got fires in
> our face and the world is crushing into our classrooms. To be an active and prepared
> citizen in the workforce means to face the real social and environmental damage and
> threats that have accumulated over time. The SDGs provide ample space for us to explore
> the broad spectrum of conditions that influence and impact more fair, just, and
> prosperous communities.

These democratic ideals can only be accomplished through convening local communities

in support of addressing wicked problems related to democracy, such as disinformation, racism,

and inequality. Unfortunately, the term "democratic" was a term less prominent in 2012-2013

mission statements, compared to 2004 (Ayers, 2015). Community colleges could be a powerful

supporter of democracy nationwide if they so choose. (Theis & Forhan, 2017).

Cross pollination of thought with cognitively and demographically diverse audiences is

viewed as a value of the programming by participants. As Ms. Saddle explained:

I think that the best solutions to the world's problems, to these wicked problems you're talking about, are going to come from environments where there's cross-pollination of thought and cross-pollination of people. We're a community college but the community is often the smallest voice in the room, or it's almost an afterthought, which is a weird thing.

Diversity and inclusion are both described as a benefit of the programs, according to the interviewees. Community colleges serve a much more diverse population of students than a traditional university. Ms. Bryan believed, "We could go on a whole other tangent about that because all of this lends itself to equity, diversity and inclusion… to be able to uncover that skillset in a whole new set of potential employees or community members". Similarly, Ms. McPherson mentioned:

> Students that are traditional college age students, like 18 to 25 years old, and students that have never been to college that are 35 or 40 years old have more in common with one another other than being HCC students.

The community college's natural emphasis on diversity and inclusion will complement the institution's role as a convener locally.

Design-thinking workshops viewed as a benefit of the programs, according to the participants. Dr. Brooks explained that, "the design thinking center of practice offers design thinking to the masses for free [or a discounted price] through monthly workshops". Additionally, the center provides design-thinking services "to the business community or at a very reduced price to do work that would cost tens of thousands of dollars [if you hired a consultant]". The center has used design thinking to address wicked problems within public schools, such as student hunger when more than 90% of the student population qualifies for free or reduced lunch. They have also used design thinking as a process to address the cycle of poverty and for sustainability challenges on their own campuses.

Civic engagement is a benefit of the programs described by the interviewees. For example, according to Ms. Pascal:

> Civic engagement is critical for a functioning democracy. Considering the fact that community colleges are considered 'democracy's colleges', it was quite appropriate that civic engagement was an expected outcome of the program. Our general mission as community colleges in the higher ed space is to prepare our citizens to be exemplar in the workforce of tomorrow. Our previous college president was very vocal about this being a two-part role. We're not here just to train and prepare for the workforce of tomorrow, but we're here to prepare for the active citizenry of tomorrow.

Livable wages are described as a benefit of the program, according to interviewees. Ms. Parsons explained:

> There are so many STEM jobs. There's biotech, technology, and construction. The social justice part has always kind of been baked into this thing for me. This was more about creating a program that was inclusive to students who might not see themselves as a computer programmer or a networking technician but making a space where they could work on that identity and get some support and experience doing that. It is THE mission, right? Programs that give students the opportunity to build skills that lead to a higher wage or lead to a living wage.

Infusing an entrepreneurial culture in the community is described as the value created by the programming. According to Dr. Sikes:

> The program contributed largely to a culture of entrepreneurship within this city. From the time this program started until I left in 2013, we went from having nothing in entrepreneurship to having a full entrepreneurship month, to have a pitch competition. So, for me, it set the tone of this city as an entrepreneurial city.

The cultivation of sustainable entrepreneurial ecosystems is a value of the programs. Although the participants did not explicitly mention sustainable entrepreneurial ecosystems, the nature of multi-stakeholder initiatives for wicked problems within the context of entrepreneurial programs leads to the concept of cultivating sustainable entrepreneurial ecosystems as solution ecosystems. For this reason, the concept should also be included as a finding. Sustainable entrepreneurial ecosystems are defined as, "an interconnected group of actors in a local geographic community committed to sustainable development through the support and

facilitation of new sustainable ventures" (Cohen, 2013, p. 3). Sustainable entrepreneurial

ecosystems are comprised of the actors who often leverage multi-stakeholder initiatives (MSIs).

These MSIs provide access to tacit and competence-related knowledge, financial capital, legacy,

and non-governmental relations within communities, new funding sources and/or cost savings

through shared services. In addition, the initiatives offer intangible benefits, such as "social or

political capital; networking and connections; increased legitimacy; reputational benefits;

influence and positioning; knowledge and capacity building; innovation in thinking and

employee morale and retention" (Stibbe et al., 2019, p. 14). These ecosystems are viewed as a

tool to address wicked problems of sustainability, supporting the SDGs (Volkmann, 2019) by (a)

possessing an orientation of sustainability, (b) recognizing opportunities to address sustainability

and mobilize support for acting, (c) collaborating innovatively for sustainability, and (d) creating

or discovering markets for sustainability. According to Biscoff and Volkmann (2018), three

factors are critical for achieving success as sustainable entrepreneurship ecosystems. They

include (a) a culture regionally that supports entrepreneurs, (b) stakeholders who support

sustainable business, and (c) collaborative networking that supports sustainable entrepreneurship.

CC Mission Alignment with SDG – Partnership for Economic Development. Existing

literature and the research describe an alignment between the mission of community colleges for

supporting economic development and addressing wicked problems of sustainability (Crookston

& Hooks, 2012; Mars, 2013; Salomon-Fernandez, 2019). The entrepreneurial programming

created the value alignment by infusing employer-demanded 21st century skills and

organizational innovation, increasing small business revenue, entrepreneurial job creation,

economic success, increased tax revenue, entrepreneurial education, post-COVID small business

support, employee recruitment and screening, and employer engagement and retention. This

section will serve to summarize the literature and interviews surrounding the community

college's alignment with addressing wicked problems of sustainability, specifically in terms of

acting as an economic development partner.

Employer-demanded 21st century skills are described by participants as a benefit of the

program. For example, Dr. Delgado explained:

> the competency model that a lot of this work is based on is the 21st century skills [model].
> One of the badges and one of the sections of that training is entrepreneurial mindset. So,
> there would have been exposure in training and development on the 21st century skills
> around entrepreneurship and entrepreneurial mindset. The statewide competency model
> includes entrepreneurial mindset as a core competency for the state employers, all the
> 200,000 employees, all 200,000 but I don't think they called it out distinctively as
> entrepreneurial mindset. I think they renamed it to make it fit to the culture of the state
> agencies. They converted it to an innovative mindset.

Meanwhile, another participant explained, "[the entrepreneurial mindset curriculum] is

used in the student success courses". This influences growth mindset, persistence, problem-

solving, ambiguity, adaptability to change- All of these are aligned to the fourth industrial

revolution in a post-COVID world.

The research indicates that employer-demanded 21st century skills are developed through

entrepreneurial education. The World Economic Forum (2016) published *The Future of Work*

report, which provided insights from senior leaders with 371 major employers globally,

representing 13 million employees across 15 emerging economies throughout 9 sectors.

Entrepreneurial education instills employability skills, such as critical thinking. According to the

findings, the top skills demanded by employers include 1) complex problem-solving, 2) critical

thinking, 3) creativity, 4) people management, 5) coordinating with others, 6) emotional

intelligence, 7) judgment and decision making, 8) service orientation, 9) negotiation, and 10)

cognitive flexibility. Each of the skills demanded are also cited as entrepreneurial competencies

(Naumann, 2017). Community colleges can leverage entrepreneurial programming to satisfy

employer requests, even if re-framed. Additionally, the goals of entrepreneurial education actively support addressing wicked problems of sustainability through (a) strengthening creative awareness, (b) recognizing opportunities and taking action, (c) acting as an economic engine, and (d) educating students to use business models to address economic and social problems (Hunter, 2012). The program supports the alignment between the mission of community colleges related to economic development partnership.

Organizational innovation is one value of the programs, according to the participants. The world is experiencing a time of great change, which will require innovation and a willingness to think differently. John Chambers (2016), the Executive Chair of Cisco warned:

> If you don't reinvent yourself, change your organization structure; if you don't talk about speed of innovation—you're going to get disrupted. And it'll be a brutal disruption, where the majority of companies will not exist in a meaningful way 10 to 15 years from now.

This reality is true of institutions, organizations and private industry and has been accelerated in a post-COVID environment. Multi-stakeholder initiatives and entrepreneurialism are critical for organizational innovation during times of crisis and change.

Increasing small business revenue is viewed as a benefit of the programs, according to the participants. Dr. Mattox emphasized:

> Our goal is to help small businesses grow. If they grow, they will increase their revenues and they will increase their employees, right. Those are two benchmarks of economic development. Anytime you have a large industry or a large corporation around a city, there's always a number of small businesses that are supplying parts, services, and food. So, I think it's figuring out what's the right balance of large and small and then also having the talent, the people and the workforce to fulfill both of them.

Ms. Foster was very specific in describing the return on investment for their program. She stated, "a recent [survey by a state university indicated], for every $1 put into the program, our clients generated $97 in revenue, based on state and revenue taxes".

Entrepreneurial job creation is viewed as value created through the programs, according to the participants. For example, Ms. McDonnel described community colleges as engines of innovation research and community engagement:

> We have programs that, while we're not student facing, we are business facing. In other words, we interface with members of the business community and we help small businesses throughout the community. Through participation in this program, contribute back by growing their business, generating revenue and creating jobs. So, I think that the economic development link between academic institutions and the business community is a very strong and important one.

Existing literature confirms this perspective. For example, Crookston and Hooks (2012) examined 200 community colleges across 44 states and reported significantly higher growth rates in areas with community colleges compared to those without.

Economic success is viewed as a value created by the programs, according to the participants. As Ms. Patterson stated:

> [The program] increases the likelihood of success of these startups in their community. NSF research shows a more than 20% increase in success rates. I would say better, [it creates] more well-trained business leaders in their community as well.

Similarly, Mr. Smith stated:

> We've supported over 15,000 businesses through our programming where the launch and survival rate after two years are 83%. Not just launched, but actually launched and survived.

Increasing tax revenue is viewed by the participants as a value created by the programs. This value supports the alignment between the mission of community colleges and serving as an economic development partner. Ms. Foster mentioned how her office tracked specific numbers related to the program's impact on tax revenue:

> We capture revenue, state, and federal revenue generated from our clients [each year]. Over last year is about a 50% increase in state, revenue that was generated by our clients and that's sales and payroll tax. For example, in 2018, our clients had $5.4 million in state revenue and in 2019 it was 9.1 million. Federal payroll taxes in 2018 was 19.5 million. And, 2019 was 37.4 million.

Similarly, Mr. Nelms further articulated why the mission of community colleges is aligned with addressing wicked problems in general. His perspective is framed through an economic development and specifically, tax revenue lens:

> [Farming is] our whole economy…. If those economies are suffering, then everything about the community college suffers, from our tax base, which supports our enrollment. If those economies, the ag and the manufacturing are not doing well, our community college really almost ceases to have a mission to help train the ag workers, farmers, and production manufacturing employees to do their work.

Entrepreneurial education in the trades is viewed as a benefit of the programs, according to the participants. Mr. Smith contended:

> [Community colleges are] already building a workforce through training, which is one or two steps away from being equipped to run their own entrepreneurial ventures. For example, the students that are trained in the trades through education, apprenticeships, and journeyman could also be on a trajectory to own their own business. Community colleges are already providing programming that is an important step-in equipping people for entrepreneurial work, whether they see it or not. I think the opportunity is to fully see and embrace that and fully equip people, because for the most part, hardly anyone is actually equipping people for the activity of [launching and] running a business.

Supporting small businesses post-COVID is considered a benefit of the programs, according to the participants. For example, Mr. Flaherty explains that in a post-COVID environment, "there will be new skillsets needed that the community colleges can offer to businesses". She also provided specific ideas for how community colleges can further support the small businesses affected:

> Think about your businesses, your micro enterprise businesses, even your main street businesses that may be aren't technically savvy. They now have to quickly learn e-commerce. Local restaurants may not have been using delivery services like grub hub. There so many things that community colleges can do to help their businesses reopen or survive right now. Perhaps now those entrepreneurs would prefer to find traditional employment instead and need new training and skills to do so. We're seeing the same thing that we saw after 2008. We're seeing a lot of people start businesses out of necessity. So, what can you do as a community college to help them either quickly figure out that their idea doesn't have a solid business plan or figure out if there's a market for

their idea? How can you more quickly help them pivot or more quickly fail so that they can learn and move on?

Another participant stated, "I think [the community college] is going to be, a key catalyst for lifting us out of and onto another track".

Similarly, Ms. Patterson explained, "post-COVID, I think local businesses, retail, and restaurants, are going to have to really rethink their business models. [This program] is a tool for adaption for adapting and iterating pivoting on business model for post COVID world".

Employee recruitment and screening for employers is considered a value created by the program, as described by the participants. For example, Mr. Brand described how the community college program helped employers with employee recruiting and screening:

> The fund currently has [around] $200,000 in it to fund scholarships. That upfront money is there [for] initial screening before we grant the scholarships. The only thing that we ask is that they take the ACT work keys test. [Prospective students] have to pass the silver level certificate for the national career readiness certificate. They also have to pass a drug screen because all of our employees' drug screen. But both of those can be fixed. If you don't have the skills to pass the NCRC, we have free training available to upgrade your skills.

He went on to explain that this arrangement was designed to benefit companies of all sizes, including small businesses:

> If you are a small firm that only hires one person a year, that's fine. You pay for one person a year. If you hire 50 a year, then you pay for 50. If we don't deliver value, you don't pay us. But also, every member invests annually in our advertising fund. That is the closest thing to overhead that we have. So, regardless of their size, each firm pays thousands to help us promote education and careers in manufacturing, put on events, host the website, produce printed materials, things like that. We do everything in thousands. And so that gives us $50,000. We do billboards and digital advertising and things like that. And so that gives us a $50,000 budget every year to work with, as a group to promote manufacturing careers in the area and promote our partners. So, it's a good deal. [Employers] don't have to invest any money upfront. [They] only have to pay us when we deliver value. Now, six years later that program is still able to sustain itself completely off that business model. All of the 500 students that have completed [the program] have become certified and gotten a job. Not one of them paid a penny to get that education. And they've been placed and retained at a very high rate and [level of] satisfaction. We have milestones along the way- the number of people that we've

recruited, screened, certified, placed, and retained, [as well as] the amount of scholarship funds. So, we call it the sustainability fund. Our definition of retention is 90 days after they go to work. So, after they have been on the job on the 91ˢᵗ day, we send [employers] an invoice for a thousand dollars and they pay us gladly a thousand dollars because that's less than they would have paid to a temporary agency to get a worker. So, we have all those metrics. We have the 50 partner firms that invest in this every year. [As a benefit for the college, we also] generate FTE off this program that we get paid for.

Ms. Clark also emphasized, "if we don't [retain] younger workers here… then [community colleges] don't have [future] students".

Employer engagement and retention was described as a benefit of the programs, according to the participants. This value provides an alignment between the community college's mission of economic development partnership and addressing wicked problems. According to Mr. Nelms:

> I've always looked at [economic development] as kind of the three-legged stool. You have business recruitment- industry recruitment going out and recruiting other industries to come to our community. You have retention… working with our current employers to help them grow and then creating the next new business and industry. [This program, in partnership with the community college] works very well with the retaining, helping business and industry be innovative and grow from new products and new innovations.

Mr. Brand elaborated on this point:

> [Due to this program,] employers are more highly engaged than they were before with the community. So, they're more likely to understand that they're getting value from us and they pay us for that value, and we don't ever promote it as a donation. This is not tax deductible. They do what they do because they get value for it. This is not a gift. This is an exchange of value in the same that they would pay it up charge to a third-party staffing firm or something. This is a business expense and they can write it off that way if they want, but it's not a gift. These employers participate more highly in our advisory committees. They are involved in gift giving at a higher level, just because they're more engaged with us. We moved them from being consumers to being investors in the workforce that they tend to be more involved overall in the community. So, they get involved in the chambers workforce committee and we hook them up with lots of folks like the high school CTE advisory committees, we get them involved in all kinds of things like that. So, we want to make sure that they have a chance to not just see us as their only source for people because we're not.

Key Points for Research Findings

Point #1: CCs can be Engines of Recovery Post-COVID

The study was launched to explore the role of community colleges in addressing wicked problems of sustainability through multi-stakeholder initiatives. However, as the research progressed, it became clear: (a) the entrepreneurial programs were a critical component for community colleges addressing wicked problems, (b) wicked problems of sustainability are best described as Sustainable Development Goals (SDGs), since the framework is widely recognized, adopted in higher education globally, and is a reflection of wicked problems of sustainability, and (c) community colleges are located within a short drive of most American households, making them ideally suited to address wicked problems. This aligns with scholarly recommendations that global challenges are best addressed at local levels (Hanson, 2008). In summary, community colleges are well suited for serving as engines of recovery post-COVID through entrepreneurial programming which incorporate the SDGs.

The study's participants overwhelmingly agreed that community colleges can be engines of recovery post-COVID through entrepreneurial thinking, programs, and processes. One program leader emphasized:

> Community college systems have an opportunity to participate in the conversation [about SDGs], both as a thought leader and as a vehicle for getting their students engaged in the work that happens in the social care space, but through a recognition that whatever they're learning here and at some point in some way, should be applied to making the conditions around them better. The [colleges] have an opportunity to evolve the framework that exists around education. [Some believe] that the purpose of education is strictly to make money and become stable as an individual or a family unit. While education accomplishes those goals, it also can prepare students to contribute to solving social issues regardless of their chosen career path. [She also acknowledged, community colleges] are late to the party. Long before COVID, if a student is the first person in their family to go to college, they are significantly more likely to not finish college. And the reason for that is they had no role-model in their life. They had nobody holding them accountable for finishing school. They had a lot of other pressures on them and they are more prepared to give up because who cares? Who would notice if they did? Colleges

have known this for a long time and they also know what to do about it, but the answer to what to do about it requires a lot of infrastructure build out that doesn't usually exist already. There isn't a team of people generally in a collegiate environment that are dedicated to retaining students who are coming from a difficult environment. I think that that's starting to happen. It's certainly starting to happen here with our partners. So, we are a few years into our colleges and universities beginning to build out the social arm of their school. [In other words], how do we keep our kids coming back and believing in themselves, even when nothing around them indicates that this is necessary? That is late, it's late. And it's especially painful that it's late right now in the middle of this pandemic, because now we're talking about a double whammy. Now we're talking about a lifetime of not having examples of going on and finishing college as an expectation. There's no expectation of that. And you have the additional pressure of being isolated.

The Sustainable Development Goals (SDGs) serve as a holistic lens, which when combined with entrepreneurial programming bring significant value for these students, especially underserved students, and their local communities. In order for community colleges to act as engines of recovery post-COVID, they need access to a clear plan of action and funding to support the action.

Point #2: Addressing Wicked Problems is Aligned with the CC Mission

Findings of the study indicate that the community college mission is aligned with addressing wicked problems of sustainability (SDGs). In fact, the entrepreneurial programs created value that further strengthened the mission alignment, by providing increased access, student success, economic development partnership and support for local communities. Therefore, the community college students, institutions, and communities all benefit from the college promoting programs that address wicked problems, such as poverty, inequality, climate change and hunger.

While addressing wicked problems of sustainability may seem beyond the mission of community colleges, research indicates the opposite is true. In fact, a majority of the issues are related not only to the mission of community colleges, but also their institution's long-term viability. Delivering on these goals will require multi-stakeholder partners that clearly

understand the role(s) community colleges can play, along with an understanding of the value created by incorporating entrepreneurial programing.

Recommendations for Policy and Practice

Program and community college leaders of multi-stakeholder initiatives provided insight as to (1) the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (2) how the mission of community colleges is aligned with addressing wicked problems of sustainability. The cross-case analysis is based on three data sources: semi-structured interviews with MSI program founders and/or leaders, research articles, and program websites. The researcher recommends policymakers, funders, and community college leaders allocate pilot funding for the creation of a community college plan for SDG localization, as well as a community college systemic innovation lab (I-Lab) to further develop and execute the plan. The overarching goal of the I-Lab is to address wicked problems aligned with the community college mission through scalable, localized, complexity-informed strategies using data-driven visualization.

Strategies should take into consideration the changing geopolitical landscape. On January 20, 2021, President Joseph Biden was confirmed, dramatically changing the policy and funding landscape for the next 4-8 years. The priorities of the Biden administration became clear through the slew of executive orders during the first few days in office. The orders were notably aligned with the Sustainable Development Goals (SDGs), including climate change, racial and gender inequality, infrastructure, innovation, clean energy, democracy, poverty, hunger, economic growth, and job creation.

In recent years, rural community colleges have experienced tightening budgets due to decreased state investment and decreased student enrollment (Rush-Marlow, 2021). The

COVID-19 pandemic further devastated the institutions. According to the Association of Community College Trustees (ACCT), the COVID19 pandemic "deepened the prosperity gap between rural and non-rural communities", leaving "rural community colleges struggling to dig their students out of an ever-deepening ditch" (Rush-Marlow, 2021, p. 1). Between the scarce resources, high rates of poverty, lack of mental health resources (Campbell, Richie, & Hargrove, 2003; Wagenfield, 2003), high rates of suicide (Roberts, Battaglia, & Epstein, 1999), alcohol abuse, opioid addiction (Centers for Disease Control and Prevention, 2011), chronic illness (Wagenfield, 2003), and the stigmatization surrounding mental health issues (Larson & Corrigan, 2010; Stamm et al., 2003), an evolved approach to social justice advocacy is needed (Bradley, Werth, & Hastings, 2012).

Due to these multiple crises, rural community colleges may stand to benefit the most from issue-focused efforts toward addressing wicked problems. Each year, significant investment is committed to SDG-related funding. In 2016 alone, $84 billion was invested in SDG#4, education for sustainability (see Appendix S). As a reminder, sixteen other SDG issues exist, each tied to philanthropic funding, which can support the wicked problem being tackled.

With the appropriate funding and incentives, community colleges could be well-positioned to help the new Biden administration scalably and sustainably achieve outlined policy goals, while also supporting the college's mission. By supporting systems of education, the positive societal impact efforts will not be limited to the political cycles and, therefore, will live on beyond the administration's timeline.

Entrepreneurial SDG programming, in an open-access format, with an integration of service-learning, can support the process of rebuilding a better and more equitable post-COVID America. As an added bonus, educating students about the SDGs informs them about the

broader issues in society, instilling a culture of empathy for others. Finally, integrating the global goals in community colleges across the nation would send a message to our global partners that the new administration supports global issues. This section will serve to outline related recommendations for policy and practice.

Recommendation #1: Create a CC SDG Localization Plan for CC Leaders

America's community colleges have an opportunity to be engines of recovery post-COVID. In order to streamline and scale this vision, community college leaders will need a clear plan of action well-aligned with their roles and institutional missions. As a reminder, a review of 200 community college mission statements revealed a strong preference for supporting the local community, rather than society globally (Williams & Nourie-Manuele, 2018). Similarly, researchers believe community colleges best serve the public's interest by tackling problems within their local community (Hanson, 2008). However, community colleges, as an honest broker, can localize the Sustainable Development Goals framework through entrepreneurial programs and focus on issues unique to each local community.

The Sustainable Development Goals (SDGs) provide a framework for generating awareness and taking action to address global challenges at a local level for positive societal change.   In order to accomplish this goal, college administrators and policymakers will need a clear plan of action to holistically and scalably incorporate the SDGs across academia.

By supporting efforts to localize the Sustainable Development Goals, broader global goals are also supported. Research indicates that addressing wicked problems, such as hunger climate change, and economic growth requires coordinated action and partnership between multiple stakeholders (Williams & Nourie-Manuele, 2018). Therefore, the localized plan would

need to follow processes, frameworks and other models suitable for multi-stakeholder initiatives collectively tackling wicked problems.

The current study indicates that community colleges play five key roles, including educator, local convener, strategic leader, and economic development partner when addressing wicked problems of sustainability. The entrepreneurial ecosystems, programming, and leadership strategies are also key to localizing positive societal impact. Collectively, these are critical components for rebuilding better and more equitable post-COVID communities.

To support this vision, the researcher recommends the creation of an action plan for localizing the SDGs in community colleges across America to re-build better. The recommended plan would align with the findings of the study, as well as existing local, national, and global SDG reports from partners, such as Catalyst2030 and UNA-USA (see Appendix P), as well as recent entrepreneurship policy initiatives, such as America's New Business Plan (www.startusupnow.org). Additionally, the action plan could serve as a response to the JLARC (2017) recommendation to develop a strategic plan for identifying student barriers and recommending short-term and long-term actionable strategies targeted toward improving underserved student outcomes (recommendation 6).

Topics in the plan may include an overview of the role of community colleges in addressing wicked problems of sustainability, mission alignment, as well as programs and activities customized for five key stakeholder audiences:

1. **An educator's strategy –** The educator's strategy will include recommendations for open-access curriculum, outcomes, rubrics, interdisciplinary service projects, competitions, opportunities for civic engagement and participation in democracy without emphasizing any partisan outcome. The strategy will also emphasize

entrepreneurial approaches to local action for global goals in a post-COVID environment.

2. **A strategic leadership strategy** – The strategic leadership strategy will include recommendations of free or affordable professional development for faculty, tools for collaborative problem-solving, solution competitions for post-COVID issues, incentivization for faculty and staff, communication strategies, systems alignment, potential allies, networks and aligned fundraising for scalability.

3. **A convening strategy** – The convening strategy will include multi-stakeholder facilitation strategies and certification, entrepreneurial ecosystem engagement, partnering for social and economic mobility, and online collaboration tools available.

4. **An economic development strategy** – The economic development strategy should encompass topics, such as job creation, business triage support post-COVID, entrepreneurial-led economic development, increasing tax revenue, revitalizing communities, talent pipelines, attraction and retention, 21st century skills and ideas for modeling sustainability.

5. **A grants strategy** – A grants strategy will include opportunities for funding related to educational programs, leadership action, local convening and facilitation assistance, and economic development support.

Recommendation #2: Launch a CC Innovation Lab (I-Lab) to Execute the Localization Plan

America experienced a plethora of interconnected challenges in 2020, including a global pandemic, inequality, poverty, hunger, racism, climate change and economic growth, just to name a few. However, with the election of President Joseph R. Biden, community college

leaders have an opportunity to maximize pandemic recovery efforts to rebuild a more equitable America. To support this goal, a cross-reference of President Biden's priorities, Sustainable Development Goal issues, and the impact on community colleges is provided in Appendix O. Community colleges, through entrepreneurial programming, have the potential to accomplish the administration's priorities while also aligning with the mission of community colleges, essentially becoming engines of scalable post-COVID recovery. Ultimately, the I-Lab would serve to act as a solution ecosystem to address wicked problems impacting student success, open access, local communities and economic development. Addressing these challenges will require adequate funding.

However, funders will need to determine how to allocate post-COVID relief money and donations for maximum societal return on investment. The researcher recommends that pilot funding be allocated to a state community college system for building a scalable community college Innovation Lab (I-Lab) model, which after validated can expand the open-access model throughout the nation in partnership with a national community college association.   A publicly funded principal-investigator framework may prove to be an ideal model for leading the initiative. According to Cunningham et al. (2019), principal investigators (PI) are defined as "influential ecosystem agents, whose behaviors shape and influence" economic and social change through complex multi-stakeholder engagement and research projects. Cunningham et al. (2016) studied the allocation of time for publicly funded principal investigators tasked with supporting public sector entrepreneurship activities. In the study, the researcher identified ten roles and responsibilities PIs take on in academia with a focus on problem-based activities and value creation (p. 546).

By allocating funding to support community colleges acting intentionally and entrepreneurially in this capacity at a state and/or nationwide level, the funding will holistically address post-COVID challenges through open access, streamlined, scalable, and complexity-informed pathways through localization. Additionally, the funding would ensure entrepreneurship educators are trained on the ideal evidence-based programming for their local needs. Finally, the funding could prioritize both rural and urban underserved institutions, which were already stretched thin before the pandemic. Without the appropriate funding incentives, the goals are less likely to achieve wide adoption.

Recommendations for Future Research

The researcher explored two research questions: (a) How do the leaders of multi-stakeholder initiatives describe the role(s) of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability? The findings suggest that entrepreneurial programming aimed at addressing wicked problems of sustainability (i.e., SDGs), such as quality education, decent work, gender equality, and economic growth may provide significant value for students, community colleges, and society. Additionally, the value created from entrepreneurial programming is aligned with the mission of community colleges to support student success, the local community, open access, and economic development goals. Findings of the study provide the groundwork for future research, but some limitations do exist.

Limitations

The limitations of the study are based on a lack of stakeholder feedback. For example, the study did not include the perspectives of (1) funders regarding community colleges acting as engines of recovery, (2) community college leaders, faculty, and students regarding the role of community colleges in addressing wicked problems (i.e., SDGs), (3) additional entrepreneurial program leaders regarding the role of community colleges post-COVID in addressing inequality, and (4) community college leaders regarding the role of community colleges in serving the various entrepreneurial student audiences for a post-COVID recovery. Additionally, incorporating quantitative research, using the role and mission variables identified in the current study, has the potential to strengthen future findings and recommendations.

Future Research

While the findings are promising, several critical gaps still remain in understanding. Specifically, future research would benefit from understanding:

    (1) the perspectives of funders regarding how community colleges can act as engines of recovery post-COVID by localizing the global goals,

    (2) the perspectives of community college leaders, faculty, and students regarding the role of community colleges in addressing wicked problems of sustainability (i.e., SDGs),

    (3) the perspectives of entrepreneurial program leaders regarding the role of community colleges post-COVID in strengthening democracy for a post-COVID recovery,

(4) the perspectives of community college leaders regarding the role of community

colleges in serving the various entrepreneurial student audiences for a post-COVID

recovery.

Research Proposal #1: Leveraging Community Colleges as Engines of Recovery by Localizing the Sustainable Development Goals (SDGs) for a post-COVID recovery: The Funder's Perspective

The dissertation would benefit from a deeper understanding of the funder's perspective regarding how community colleges can act as engines of recovery post-COVID by localizing the Global Goals (SDGs). For the purposes of this proposal, funders may include SDG-related major donors, foundations, governmental and non-governmental organizations.

Entrepreneurial philanthropy is powerful, particularly during the pandemic. In 2020, Mackenzie Scott, the fourth richest woman in the world, donated six billion dollars to numerous causes, which was predicted by some experts to be the largest philanthropic donation of all time (Emmrich, 2020). A substantial amount was donated to community colleges and universities, which serve traditionally underserved audiences, including minorities, women, inner-city, and rural communities. In 2019, Scott signed the Giving Pledge, which was launched by Bill and Melinda Gates in 2010 with the goal of persuading other billionaires to pledge to donate half of their wealth to charity (Emmrich, 2020). As of January 2019, more than 600 billionaires exist in the U.S. and 2000 globally. Of the 2000 globally, 204 had signed on to the pledge (Piper, 2019). Non-governmental organizations (NGOs) also play a critical role in funding for SDG efforts. In 2018, the organization Sustainable Brands created a guide titled *NGOs Leading the Way on Sustainable Development Goals*, which mapped funders to specific SDGs based on prior funding (Sustainable Brands, 2018).

In the United States, more than 100,000 foundations exist, contributing over $75 billion last year alone, which is the highest donation amount on record (Heintz, 2020). Unfortunately, less than 2% of philanthropic donations over the past decade were designated to support civic engagement and democracy-related causes. The Chronicle of Philanthropy outlined 50 corporate and private foundations that have contributed significantly to COVID-related issues. For example, the Wells Fargo Foundation donated $175 million to support public-health organizations for food, shelter, small businesses, and housing. Sony donated $100 million for global health, and the Visa Foundation Pledged $70 million for frontline charitable and small business grants (Prest, 2020). More recently, the Chronicle of Philanthropy highlighted the recent emphasis on supporting democracy-related causes (Gamboa, 2021). For example, Ford Foundation donated $636 million to related causes since 2016. In October, 2020, more than 100 major philanthropists, both Republicans and Democrats, signed a bi-partisan letter stating that "repairing the fabric of our democracy will require extraordinary stewardship by leaders across society". This was followed by yet another letter after the U.S. Capitol riot with nearly 300 signatures, including the Silicon Valley Community Foundation, Open Society Foundation, and Bloomberg Philanthropies, urging elected leaders to "repair our tattered social fabric and help our democracy live up to its ideals (Gamboa, 2021). In response to the need for foundations to respond to multiple crisis during and post-pandemic, several reports were published. For example, the Center for Effective Philanthropy published a series of three reports titled, *Foundations Respond to Crisis* (Orensten, & Buteau, 2020). Additionally, a report titled, *Embracing complexity: Towards a shared understanding of funding systems change* was published by Ashoka, along with several partners (Ashoka et al., 2020). While these reports are beyond the scope of the current study, they may prove valuable for future research.

Unfortunately, non-profits, designated as hate groups by the Southern Poverty Law Center, also reportedly received $52.8 million in donations from charities and foundations over the past seven years, according to a review by the Chronicle of Philanthropy (Theis, 2021). In 2021, the Chandler Foundation published a document titled, *Systems Change Philanthropy: An Initial Landscape of Actors, Initiatives, and Resources*. The authors urge philanthropists and social investors to prioritize funding for those initiatives aiming to address root causes and build resilience through systems change (Chandler Foundation, 2021).

Federal and state funding is often influenced by legislation. For example, in February, 2021, bi-partisan legislation titled, *Enhancing Entrepreneurship for the 21st Century Act*, was re-introduced by Senators Amy Klobuchar (D-MN) and Tim Scott (R-SC). According to Senator Klobuchar, "Entrepreneurship and innovation are key to our economic prosperity and are needed more than ever as we rebuild our economy and put the pandemic behind us". Another example of bi-partisan legislation titled *The Next Generation Entrepreneurship Corps Act* was introduced by Senators Chris Coons and Tim Scott, in partnership with Representatives Jason Crow and Troy Balderson. The study would benefit from a deeper understanding of the top goals and priorities of the policymakers, how community colleges could support their goals through SDG localization, and what funding may be available to support the efforts toward aligning the two.

Using a qualitative case-study approach, a researcher could uncover the following research questions:

(1) What are the top goals and priorities of SDG-related funders? (SDG-related major donors, foundations, and non-governmental organizations, as well as federal and state policymakers) post-COVID?

(2) How can community colleges support those goals and priorities by localizing the SDGs?

(3) What funding (philanthropic, government, or non-governmental organization) is available to support the community college's efforts to rebuild America post-COVID while localizing Global Goals (SDGs)?

Secondary interview questions will aim to outline the funding requirements, amount available, timeline, metrics, flexibility and desired outcomes. One benefit of the study is that it opens up the lines of communication with new funding partners for win-win outcomes benefiting community college stakeholders and students. The findings of the study will provide community college leaders and faculty with funding perspectives critical for funder engagement, including entrepreneurial philanthropy. A list of foundations that support addressing wicked problems with an emphasis on SDGs can be found in Appendix S.

Research Proposal #2: The Role of Community Colleges in Addressing Wicked Problems (i.e., SDGs) for a post-COVID recovery: The Stakeholders Perspective

The dissertation would benefit from including the perspectives of three additional stakeholder audiences, including community college presidents, faculty, and students. Additionally, the value created is in alignment with the mission of community colleges broadly. Stakeholder perspectives are critical for gaining buy-in and internal legitimacy for future action. The researcher proposes an expanded study using a qualitative case-study approach to uncover answers to the following research questions:

(1) How do stakeholders view the role(s) of community colleges in addressing wicked problems of sustainability (i.e., SDGs)?

(2) How do the stakeholder's local goals/metrics align with the   Sustainable

Development Goals (SDGs)?

(3) What barriers exist that may prevent stakeholders from embracing the adoption of

SDGs, which benefit students, society and the institutions post-COVID?

The findings of the study will provide community college leaders and faculty with stakeholder perspectives critical for buy-in and legitimacy for future action.   In addition, the findings would provide information helpful for grant applications and/or entrepreneurial philanthropy.

Research Proposal #3: The Role of Community Colleges in Strengthening Democracy for a post-COVID recovery: An Entrepreneurial Perspective

The findings of this dissertation provide some evidence that entrepreneurial programs yield considerable value for community college stakeholders, especially students, policymakers, and the local community. Additionally, the value created is in alignment with the mission of community colleges broadly. While the findings are valuable, the study would benefit from a deeper understanding of how the entrepreneurial programs could help strengthen democracy through civic engagement and service-learning.   Interestingly, recent articles indicate that financial insecurity impacts democracy.   An example of this is the recent capital insurrection.

On January 6, 2021, insurrectionists stormed the U.S. Capitol in Washington DC to attempt to stop the certification vote for Joseph Biden's Presidency (Mallin & Barr, 2021). During sworn testimony on March 2, 2021, FBI Director Christopher Wray called the insurrectionists 'militia violent extremists' (para. 10). He explained to lawmakers that 270 suspects, have since been involved, 300 face federal charges, and a total of 270,000 digital tips were submitted on the FBI's website. Additionally, the bureau currently has 2,000 domestic terrorism investigations open, compared to 1,000 in 2017.

According to Forensic psychiatrist, Bandy X. Lee, the insurrectionists may, at least partially, have been driven by followership (Lewis, 2021).   She explains, followership and violence are often caused by societal stress and socioeconomic deprivation. She also calls for a deeper focus on fixing the socioeconomic conditions that contributed to poor mental health in the first place. Additionally, she explains that future insurrection attempts can be avoided through a focus on prevention because "structural violence, or inequality, is the most potent stimulant of behavioral violence. She also explained that reducing inequality in all forms – economic, social, and gender – will help toward preventing violence" (Lewis, 2021, para 13).

Similarly, a Washington Post analysis of public records of 125 insurrectionists from the Capitol attack, showed that approximately 60% have a documented record of financial issues, including bankruptcy, eviction or foreclosure, bad debt, or unpaid taxes during the past 20 years. Collectively, the group's rate of bankruptcy is twice as high as the average American, 25% were sued by a creditor, and 20% faced losing their home. The insurrection and issues of income insecurity are examples of multiple wicked problems being interconnected with one another (Frankel, 2021).

In 2021, a report by McKinsey Global Institute examined the economy post-pandemic. In the report, researchers warned over 100 million workers across eight countries will need to be re-skilled by 2030, due to an unavoidable occupational switch (McKinsey & Company, 2020c).   According to the study, workers most impacted will be those without a college degree, women, minorities, and younger individuals. In the U.S. alone, researchers estimate a 28% increase in occupational transition pre-pandemic versus post-pandemic by 2030, with 17 million workers needed in new occupations. Without providing American workers with programmatic alternatives to their current occupation, inequality will continue to increase, which will likely increase threats to democracy.

The researcher proposes an expanded study using a qualitative case-study approach to uncover answers to the following research questions:

(1) How do leaders of the entrepreneurial programs describe the role of community colleges in strengthening democracy post-COVID in America?

(2) How do community college leaders associate with the entrepreneurial programs describe additional value created for community college stakeholders, including society, academic institutions, policymakers, and other students?

The findings of the study will provide community college faculty and foundations with additional evidence to support grant applications and/or entrepreneurial philanthropy.

Research Proposal #4: The Role of Community Colleges in Serving the Various Entrepreneurial Student Audiences for a post-COVID Recovery: A Community College Leader's Perspective

The findings of this dissertation offer some evidence that entrepreneurial programs yield considerable value for community college stakeholders, especially students, policymakers, and the local community. Additionally, the value created is in alignment with the mission of community colleges broadly. However, the study does not take into consideration how various types of entrepreneurial student audiences can contribute to a post-COVID recovery through targeted entrepreneurial programming. Many different types of entrepreneurs exist and often coincide with the under-served audiences that community colleges already engage with, including immigrants, especially Hispanic entrepreneurs, senior entrepreneurs, rural entrepreneurs, minority entrepreneurs, recently-incarcerated entrepreneurs, and veteran entrepreneurs. Additionally, mom-preneurs, gig-preneurs, tourism entrepreneurs, entrepreneurial exporters, and life-science entrepreneurs. Many of these entrepreneurs are suffering post-COVID (see Appendix R).

Let's consider just one audience: recently incarcerated entrepreneurs. According to Couloute and Kopf (2018) the unemployment rate of formerly incarcerated individuals was 27% on average before the pandemic, which was already five times the average rate of unemployment for the average population in America. Notably, the unemployment rate varies by race and gender. For example, the post-incarceration unemployment rate is 43.6% for black women, 35.2% for black men, 23.2% for white women, and 18.4% for white men.

In 2021, the Kauffman Foundation hosted a webinar series about the topic of recently incarcerated entrepreneurs and prison entrepreneurship education (PEP). During the event, the speakers informed the audience about outcomes resulting from the programs, as documented by scholars. According to Johnson (2013), an examination of 94 graduates who completed the Prison Entrepreneurship Program (PEP) in Texas revealed a 6.9% recidivism rate, compared to the control group's recidivism rate of 24%. This saved the state $447,621 in incarceration costs in the first year, with $343,823 annually in the following years. Additionally, the graduates contributed more than $9,000 each year in tax revenue, with an annual tax contribution of $441,908 and $72,601 in annual child support payments. The traditional employment rate of the program is 100%. Total projected positive impact annually was estimated at over a million dollars. Common industries for formerly incarcerated individuals include transportation, facilities, construction, retail trade, and landscaping.

Similarly, Michael Porter's Harvard University Initiative for a Competitive Inner City (ICIC) published a report on the outcomes of the Prison Entrepreneurship Program (Nijhuis & Eberhardt, 2021). According to the report, PEP resulted in the following economic impacts on the participant graduates, the State of Texas, and the federal government: 7% three-year recidivism rate, 100% were employed in 90 days, 361 businesses were started (now over 500), a

$17.17 - $21.19 in average hourly wage for graduates, $46.3M in total annual income, $67.1M in total annual value added, $122.5M in total annual economic output, $4.3M in savings to the state and federal government in 2017 alone, an return on investment (ROI) of 159% over one year, and an ROI of 754% over 5 years.

By partnering with the outcomes-based entrepreneurial programs targeted toward key underserved audience segments, community colleges can better accomplish their own mission. The researcher proposes an expanded study using a qualitative case-study approach to uncover answers to the following research questions:

(1) How do community college leaders describe the role of community colleges in serving underserved entrepreneurial student audiences for a post-COVID recovery?

(2) How do community college leaders associated with the entrepreneurial programs describe additional value created for community college stakeholders, including society, academic institutions, policymakers, and other students not previously mentioned.

The findings of the study will provide community college leaders with additional evidence to support grant applications and/or entrepreneurial philanthropy. A list of entrepreneurial programs can be found in Appendix Q.

Concluding Thoughts

Policy experts, scientists, entrepreneurs, and business leaders have warned of global social, economic, and environmental risks for years (World Economic Forum, 2020). Specific risks include poverty, inequality, climate change, and infectious disease, to name a few (Deming, 1994). While academic researchers have debated the role of universities in addressing wicked problems through multi-stakeholder initiatives (Dentoni & Bitzer, 2015), the role of community colleges was largely unknown due to a gap in the research. With over 1,100 community colleges

across America, the institutions are well-suited to serve as incubators of post-COVID recovery to help communities build back better and more equitable.

Based on the current study's findings, recommendations were designed to support this vision becoming a reality. Through semi-structured interviews, multi-stakeholder leaders of programs and colleges provided insights as to (1) the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability, as well as (2) the alignment between the mission of community colleges and addressing wicked problems of sustainability. My hope is that policymakers, funders, and community college leaders will allocate funding to support the creation of a community college plan for SDG localization through entrepreneurial programming, as well as a community college innovation lab (I-Lab) to execute the plan. The purpose of the I-Lab is to build an open-access, scalable model for addressing local wicked problems aligned with the mission of community colleges. Once the model is validated, partnership with a national association could help to scale the efforts to rebuild a better and more equitable post-COVID America. In addition, entrepreneurial faculty could leverage this study to better communicate the value created by entrepreneurial programming and problem-solving on their individual campuses, along with the community college mission alignment that exists.

References

AACSB International. (2020a). *Connected for better: Exploring the positive societal impact of business schools*. https://www.aacsb.edu/-/media/a34c23171bcb477b893408ccc690d956.ashx

AACSB International. (2020b, July 28). *2020 guiding principles and standards for AACSB business accreditation.* https://www.aacsb.edu/-/media/aacsb/docs/accreditation/business/standards-and-tables/2020%20interpretive%20guidance%20-%20final%20draft%20-%20july%2023%202020.ashx?la=en&hash=DF488410CBEFBECACD0DB061B226335EDC133D53

Addy, N., & Dubé, L. (2018). Addressing complex societal problems: Enabling multiple dimensions of proximity to sustain partnerships for collective impact in Quebec. *Sustainability*, *10*(4), 980. https://doi.org/10.3390/su10040980

Adomßent, M. (2013). Exploring universities' transformative potential for sustainability-bound learning in changing landscapes of knowledge communication. *Journal of Cleaner Production*, *49*, 11–24. https://doi.org/10.1016/j.jclepro.2012.08.021

Adomßent, M., Godemann, J., & Michelsen, G. (2007). Transferability of approaches to sustainable development at universities as a challenge. *International Journal of Sustainability in Higher Education*, *8*(4), 385–402. https://doi.org/10.1108/14676370710823564

Aha! Process. (2021). https://www.ahaprocess.com/about/

Albrecht, P., Burandt, S., & Schaltegger, S. (2007). Do sustainability projects stimulate organizational learning in universities? *International Journal of Sustainability in Higher Education*, *8*(4), 403–415. https://doi.org/10.1108/14676370710823573

American Association of Community Colleges [AACC]. (2020a). *Fast facts 2020*. https://www.aacc.nche.edu/research-trends/fast-facts/

American Association of Community Colleges [AACC]. (2020b). Unpublished data from Survey of AACC CEOs. https://www.ccdaily.com/2020/09/covid-19-crisis-in-community-colleges-what-does-the-data-say/

American Association of Community Colleges. (2011). *Community colleges in the emerging green economy: Charting a course and leadership role*. AACC.

America's New Business Plan (2021). www.startusupnow.org

Association of American Colleges and Universities [AACU]. (2020). Global Issues, Local Concerns: A Community College Educates for Democracy. https://www.aacu.org/diversitydemocracy/2020/summer/probinson

Anderson, M. & Horrigan, J. B. (2017). Americans have mixed views on policies encouraging broadband adoption. Pew Research Center. https://www.pewresearch.org/fact-tank/2017/04/10/americans-have-mixed-views-on-policies-encouraging-broadband-adoption/

Anderson, S. (2019). Immigrants and billion – dollar companies. National Foundation for American Policy. https://nfap.com/wp-content/uploads/2019/03/2018-BILLION-DOLLAR-STARTUPS.NFAP-Policy-Brief.2018.pdf

Andonova, L. B., Betsill, M. M., & Bulkeley, H. (2009). Transnational climate governance. *Global Environmental Politics*, *9*(2), 52–73. https://doi.org/10.1162/glep.2009.9.2.52

Ansell, C., & Torfing, J. (Eds.). (2016). *Handbook on theories of governance*. Edward Elgar Publishing.

Anti-Defamation League (2020). ADL Debunk: Disinformation and the BLM Protests. https://www.adl.org/node/15566/resource-pdf

Arbo, P., & Bennworth, P. (2007). *Understanding the regional contribution of higher education institutions: A literature review* (Education Working Paper 9). OECD Publishing.

Armed Conflict Location & Event Data Project (ACLED, 2021), 93% of the Black Lives Matter protests were peaceful. https://acleddata.com/2020/09/03/demonstrations-political-violence-in-america-new-data-for-summer-2020/

Ashoka. (2016). More than Simply "Doing Good": A Definition of Changemaker. https://issuu.com/ashokachangemakers/docs/more_than_simply_doing_good_definin

Ashoka, McKinsey & Company, Catalyst 2030, Co-Impact, Echoing Green, Schwab, & Skoll and SystemIQ. (2020, January). *Embracing complexity: Towards a shared understanding of funding systems change.* https://catalyst2030.net/resources/embracing-complexity-report/

Asia School of Business [ASB] (2021). *Center for Innovation and Entrepreneurship: Converting Problems Into Opportunities.* https://asb.edu.my/innovation-and-entrepreneurship

Aspen Institute. (2021). *Report launch: Unleashing Latino-owned business potential.* https://www.aspeninstitute.org/events/report-launch-unleashing-latino-owned-business-potential/

Austin, A. (2016). The Color of Entrepreneurship: Why the Racial Gap among Firms Costs the U.S. Billions. *The Center for Global Policy Solutions*.

http://globalpolicysolutions.org/wp-content/uploads/2016/04/Color-of-Entrepreneurship-report-final.pdf

Austin, J. E., & Seitanidi, M. M., (2012). Collaborative value creation. *Nonprofit and Voluntary Sector Quarterly, 41*(5), 726–758. https://doi.org/10.1177/0899764012450777

Austin, J. E. (2000). Strategic collaboration between nonprofits and businesses. *Nonprofit and Voluntary Sector Quarterly*, *29*(1_suppl), 69–97. https://doi.org/10.1177/0899764000291S004

Australian Public Service Commission. (2007). *Addressing wicked problems: A public policy perspective*. APSC.

Authenticated US Government Information. (2006). *In the House of Representatives, U.S. (H. Res. 699)*. https://www.congress.gov/109/bills/hres699/BILLS-109hres699eh.pdf

Ayers, D. F. (2015). Credentialing structures, pedagogies, practices, and curriculum goals. *Community College Review*, *43*(2), 191–214. https://doi.org/10.1177/0091552115569847

Ayers, D. F. (2017). Three functions of the community college mission statement. *New Directions for Community Colleges*, *2017*(180), 9–17. https://doi.org/10.1002/cc.20276

Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). EntreComp: The entrepreneurship competence framework. *Luxembourg: Publication Office of the European Union, 10*, 593884. http://doi.org/10.2791/593884

Bäckstrand, K. (2006). Multi-stakeholder partnerships for sustainable development: Rethinking legitimacy, accountability and effectiveness. *European Environment*, *16*(5), 290–306. https://doi.org/10.1002/eet.425

Badal, S. B., & Ott, B. (2015, January 29). A very fast-growing group of entrepreneurs: people over 50. *Gallup*. https://news.gallup.com/businessjournal/181352/fast-growing-group-entrepreneurs-people.aspx

Baker, M. (2020, May 15). When did the coronavirus arrive in the U.S.? Here's a review of the evidence. *New York Times*. https://www.nytimes.com/2020/05/15/us/coronavirus-first-case-snohomish-antibodies.html

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Bassey, M. (1999). *Case study research in educational settings*. Open University Press

Batie, S. S. (2008). Wicked problems and applied economics. *American Journal of Agricultural Economics*, *90*(5), 1176–1191. https://doi.org/10.1111/j.1467-8276.2008.01202.x

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, *13*(4), 544-559. https://doi.org/10.46743/2160-3715/2008.1573

Beer, M., Eisenstat, R., & Spector, B. (1990). Why change programs don't produce change. *Harvard Business Review*, *68*(6), 158–66. PMID: 10107960.

Belfield, C., & Brock, T. (2020, November 19). Behind the enrollment numbers: how COVID has changed students' plans for community college. *Community College Research Center*. https://ccrc.tc.columbia.edu/easyblog/covid-enrollment-community-college-plans.html

Bobo, L., Kluegal, J.R., & Smith, R. (1997). Laissez faire racism: The crystallization of "kinder, gentler" anti-black ideology. In S. A. Tuch & Martin (Eds.), *Racial attitudes in the 1990's: Continuity and change* (pp. 15-44). Westport, CT: Praeger.

Bell, D. (1992). *Faces at the bottom of the well: the permanence of racism*. New York, NY: BasicBooks.

Bentley, T., & Wilsdon, J. (2003). Introduction: The adaptive state. In T. Bentley & J. Wilsdon (Eds.), *The adaptive state: Strategies for personalizing the public realm*. Demos.

Biden, J. (2021). *2021 Joe Biden executive orders*. https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

Bischoff, K., & Volkmann, C. K. (2018). Stakeholder support for sustainable entrepreneurship – a framework of sustainable entrepreneurial ecosystems. *International Journal of Entrepreneurial Venturing, 10*(2), 172. https://doi. Org/10.1504/IJEV.2018.092714.

Blank, S. [Blank Steve]. (2020, December 19). *Lee Bollinger – Columbia – The fourth purpose* [Video]. You Tube. https://www.youtube.com/watch?v=mfEsY7C4pss

Blank, S. (2005). The four steps to the epiphany, *Cafepress.com.*

Bloomberg Cities Network. (n.d.). *Mayors challenge*. https://bloombergcities.jhu.edu/mayors-challenge

Board of Governors of the Federal Reserve System. (2019). *Report on the economic well-being of U.S. Households In 2018*. https://www.federalreserve.gov/publications/files/2018-report-economic-well-being-us-households-201905.pdf

Boblin, S. L., Ireland, S., Kirkpatrick, H., & Robertson, K. (2013). Using stake's qualitative case study approach to explore implementation of evidence-based practice. *Qualitative Health Research, 23*, 1267–1275. https://doi.org/10.1177/1049732313502128

Bobrowsky, D. (2000). *Creating a global public policy network in the apparel industry: The apparel industry partnership*. Global Public Policy Institute.

Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, *65*, 42–56. https://doi.org/10.1016/j.jclepro.2013.11.039

Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Pearson Education.

Boni, A. A., Weingart, L. R., & Evenson, S. (2009). Innovation in an academic setting: Designing and leading a business through market-focused, interdisciplinary teams. T*he Academy of Management Learning and Education*, *8*, 407-417.

Boone, E. J. (1992). Community-based programming: An opportunity and imperative for the community college. *Community College Review*, *20*(3), 8–20. https://doi.org/10.1177/009155219202000303

Bornstein, D. (2004). *How to change the world: Social entrepreneurs and the power of new ideas.* Oxford University Press. https://doi.org/10.1080/19420676.2018.1541010

Boyon, N., & Silverstein, K. (2020, December 20). Anxiety, stress and loneliness: COVID's toll on the lives of workers. *IPSOS*. https://www.ipsos.com/en-us/news-polls/covid-19-pandemics-impact-workers-lives

Bradley, J. M., Werth, J. L., & Hastings, S. L. (2012). Social justice advocacy in rural vommunities: Practical issues and implications. *The Counseling Psychologist*, *40*(3), 363–384. https://doi.org/10.1177/0011000011415697

Bramson, R. A., & Buss, T. (2002). Methods for whole system change in public organizations and communities: An overview of the issues. *Public Organization Review*, *2*(3), 211–221. https://doi.org/10.1023/A:1020232112577

Brett, A. M. (2019). Admired disorder: A guide to building innovation ecosystems, complex

systems, innovation, entrepreneurship, and economic development. In *Admired disorder: A guide to building innovation ecosystems, complex systems, innovation, entrepreneurship, and economic development* (p. 19).

Bridge, S. (2017). Is "entrepreneurship" the problem in entrepreneurship education? *Education + Training*, *59*(7/8), 740–750. https://doi.org/10.1108/ET-02-2016-0037

Brookings Institute. (2021b). *Future of the middle class.* https://www.brookings.edu/interactives/future-of-the-middle-class/

Brookings Institute. (2020). *Examining the Black-White Wealth Gap.* https://www.brookings.edu/blog/up-front/2020/02/27/examining-the-black-white-wealth-gap/

Brookings Institute & UN Foundation. (2020, September 16). *American leadership in advancing the sustainable development goals.* https://www.brookings.edu/events/american-leadership-in-advancing-the-sustainable-development-goals-2/

Bromley, P. (1990). Academic contributions to psychological counseling. 1. A philosophy of science for the study of individual cases. *Counseling Psychology Quarterly*, *3*(3), 299–307.

Brouwer, J. H., Woodhill, A. J., Hemmati, M., Verhoosel, K. S., & van Vugt, S. M. (2015). *The MSP guide: How to design and facilitate multi-stakeholder partnerships.* Centre for Development Innovation Wageningen UR.

Brundtland Commission. (1987). *Report of the world commission on environment and development: Our common future* (United Nations General Assembly Document A/42/427). United Nations.

Bui, Q., & Badger, E. (2020, May 22). The coronavirus quieted city noise. Listen to What's Left.

The New York Times.

Bunker, B. B., & Alban, B. T. (1997). *Large group interventions: Engaging the whole system for rapid change*. Jossey-Bass.

Burchell, J., & Cook, J. (2006). It's good to talk? Examining attitudes towards corporate social responsibility dialogue and engagement processes. *Business Ethics: A European Review*, *15*(2), 154–170. https://doi.org/10.1111/j.1467-8608.2006.00439.x

Bureau of Labor Statistics [BLS]. (2021, February 5). *The employment situation — January 2021*. https://www.bls.gov/news.release/pdf/empsit.pdf

Burns, D. (2020, June 4). U.S. Chapter 11 bankruptcy filings surge in May. *Reuters.* https://www.reuters.com/article/us-health-coronavirus-bankruptcy/u-s-chapter-11-bankruptcy-filings-surge-in-may-idUKKBN23B2K3

Burritt, R. L., & Tingey-Holyoak, J. (2012). Forging cleaner production: The importance of academic-practitioner links for successful sustainability embedded carbon accounting. *Journal of Cleaner Production*, *36*, 39–47. https://doi.org/10.1016/j.jclepro.2012.02.001

Bushe, G. R., & Kassam, A. F. (2005). When is appreciative inquiry transformational? A meta-case analysis. *The Journal of Applied Behavioral Science*, *41*, 161-181. https://doi.org/10.1177/0021886304270337

Calder, W., & Clugston, R. M. (2003). International efforts to promote higher education for sustainable development. *Planning for Higher Education*, *31*, 30–44.

Calton, J. M., & Payne, S. L. (2003). Coping with paradox. *Business & Society*, *42*(1), 7–42. https://doi.org/10.1177/0007650302250505

Cambell, C., Richie, S. D., & Hargrove, D. S. (2003). Poverty and rural mental health. In B. H. Stamm (Ed.), *Rural behavioral health care: An interdisciplinary guide* (pp. 41-51). https://doi.org/10.1177/0011000011415697

Carcasson, M. (2013). Rethinking civic engagement on campus: The overarching potential of deliberative practice. In D. W. Brown & D. Witte (Eds.), *Higher Education Exchange* (pp. 37–48). Kettering Foundation

Carroll, A. B. (1989). *Business and society. Ethics and stakeholder management*. South-Western College Publishing.

Carrismo, J. (2021, January 22). 38 Capitol Police officers and 150 National Guard members have tested positive for COVID-19 since Capitol attack. *CBS News*. https://www.cbsnews.com/news/38-capitol-police-officers-and-150-national-guard-members-test-positive-since-capitol-attack/

Catalyst 2030. (2020a, July 8). *Getting from crisis to systems change: Advice for leaders in the time of COVID*. https://catalyst2030.net/resources/getting-from-crisis-to-systems-change-report/

Catalyst 2030. (2020b, September 19). *COVID-19 action agenda leaders on the front line: why social entrepreneurs are needed now more than ever.* https://catalyst2030.net/resources/covid-19-action-agenda-leaders-on-the-front-line/

CBS News. (2021, January 19). *Most Americans don't know what's in the Constitution: "A crisis of civic education.* https://www.cbsnews.com/news/constitution-americans-civics-test/

Center for American Entrepreneurship. (2021). https://startupsusa.org

Center for Cooperative Problem-Solving [CPS]. (2021). https://www.alce.vt.edu/signature-programs/problem-solving/kai-certification.html

Center of Disease Control and Prevention [CDC]. (2021, January 21). *Essential services and critical infrastructure; plan, prepare, and respond.* https://www.cdc.gov/coronavirus/2019-ncov/community/workplaces-businesses/essential-services.html

Center of Disease Control and Prevention [CDC]. (2020, December 17). *Overdose Deaths Accelerating During COVID-19.* *https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html*

Centers for Disease Control and Prevention [CDC]. (2011). Vital signs: Overdoses of prescription opioid pain relievers—United States, 1999-2008. Morbidity and Mortality Weekly Report, 60(43):1487-1492

Center on Budget and Policy Priorities [CBPP]. (2020, November). States Grappling with Hit to Tax Collections. https://www.cbpp.org/sites/default/files/atoms/files/4-2-20sfp.pdf

Chandler Foundation. (2021). Systems Change: An Initial Landscape of Actors, Initiatives, and Resources. https://assets.website-files.com/5ed9601e4ab04f00c016af46/60058162d9c4da3bfe6c92c9_Systems-Change-Philanthropy-Landscape%202021.01.14_v_15.1.pdf

Chatterton, P., & Goddard, J. (2000). The response of higher education institutions to regional needs. *European Journal of Education*, *35*(4), 475–496. https://doi.org/10.1111/1467-3435.00041

Civics Project Guide Book 2018. https://www.doe.mass.edu/instruction/hss/civics-project-guidebook/index.html#/

Clancy, T. R., Effken, J. A., & Pesut, D. (2008). Applications of complex systems theory in nursing education, research, and practice. *Nursing Outlook*, *56*(5), 248-256. https://doi.org/10.1016/j.outlook.2008.06.010

Clifford, T. (2020, June 4). Jim Cramer: The pandemic led to 'one of the greatest wealth transfers in history'. *CNBC*. https://www.cnbc.com/2020/06/04/cramer-the-pandemic-led-to-a-great-wealth-transfer.html

Cohen, S. (2013). What do accelerators do? Insights from incubators and angels. *Innovations, 8*, 19–25.

Cohen, B., & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. *Journal of Business Venturing*, *22*(1), 29–49. https://doi.org/10.1016/j.jbusvent.2004.12.001

Cohen, J., & Stewart, I. (1994). *The collapse of chaos: Discovering simplicity in a complex world*. Viking.

Collaboration for Impact. (2021). *We are building an influential movement of people able to change systems.* https://collaborationforimpact.com/

College Board's National Commission on Community Colleges (2008). Winning the Skills Race and Strengthening America's Middle Class: An Agenda for Community Colleges, New York. https://secure-media.collegeboard.org/digitalServices/pdf/professionals/winning-the-skills-race-action-agenda-community-colleges.pdf

Collins, C. (2021). Updates: Billionaire Wealth, U.S. Job Losses and Pandemic Profiteers. Inequality.org. https://inequality.org/great-divide/updates-billionaire-pandemic/

Congressional Budget Office [CBO]. (2019). *The effects on employment and family income of increasing the federal minimum wage*. https://www.cbo.gov/publication/55410

Conklin, J. (2006). *Wicked problems & social complexity*. CogNexus Institute. https://doi.org/10.18411/a-2017-023

Cooper, H. (1984). The integrative research review: A systematic approach. Sage.

Cooper, S., Bottomley, C., & Gordon, J. (2004). Stepping out of the classroom and up the ladder

    of learning: An experiential learning approach to entrepreneurship education. *Industry*

    and Higher Education, 18(1), 11-22.

Couloute, L., & Kopf, D. (2018). *Out of prison & out of work: Unemployment among formerly*

    incarcerated people. Prison Policy Initiative.

    https://www.prisonpolicy.org/reports/outofwork.html

Cowan, G. A., Pines, D., & Meltzer, D. E. (1994). *Complexity: Metaphors, models, and reality*.

    Addison-Wesley.

Creswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative*

    and qualitative research (4th ed.). Pearson/Merrill Prentice Hall.

Creswell, J. (2013). *Qualitative inquiry and research design: Choose among five approaches*

    (3th ed.). Sage.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into*

    Practice, *39*(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2

Crookston, A., & Hooks, G. (2012). Community colleges, budget cuts, and jobs: The impact of

    community colleges on employment growth in rural U.S. counties, 1976– 2004.

    Sociology of Education, *85*(4), 350–372.

Crotty, M. (1998). *The foundations of social research*. Sage.

Cunningham, J. A., Mentor, M., & Wirsching, K. (2019). Entrepreneurial ecosystem

    governance: a principal investigator-centered governance framework. *Small Business*

    Economics, 52(2), 545-562.

Cunningham, J. A., O'Reilly, P., Dolan, B., O'Kane, C, & Mangematin, V. (2016). Publicly

    funded principal investigators allocation of time for public sector entrepreneurship

    activities. *Economia E Politica Industriale, 43*(4), 383-408.

Cunningham, J. B., Gerrard, P., Schoch, H., & Lai Hong, C. (2002). An entrepreneurial logic for

    the new economy. *Management Decision, 40,* 734–744.

Dahan, N. M., Doh, J., & Teegen, H. (2010). Role of nongovernmental organizations in the

    business-government-society interface: Introductory essay by guest editors. *Business &*

    Society, *49*(4), 567–569. https://doi.org/10.1177/0007650310378705

Daniel, A. D., Costa, R. A., Pita, M., & Costa, C. (2017). Tourism education: What about

    entrepreneurial skills? *Journal of Hospitality and Tourism Management, 30*, 65-72.

    https://doi.org/10.1016/j.jhtm.2017.01.002

Davies, A., Mulgan, G., Norman, W., Pulford, L., Patrick, R., & Simon, J. (2012). *Systemic*

    innovation. Social Innovation Europe. doi: 10.2777/12639

Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship:

    Reducing environmental degradation through entrepreneurial action. *Journal of Business*

    Venturing, *22*(1), 50–76. https://doi.org/10.1016/j.jbusvent.2005.09.003

Dearie, J. (2021). The Entrepreneur's Advocate. The Entrepreneur Ethos. February 1, 2021

    https://podcasts.google.com/feed/aHR0cHM6Ly9mZWVkcy5zaW1wbGVjYXN0LmNvb

    S9OMFRIWVg5ZQ/episode/NmEwMzRkMDMtOTA3OS00M2YwLThhNWEtODkzZ

    GNjYjY2N2Ux?hl=en&ved=2ahUKEwiv3IjJ5NDuAhXjElkFHbmEDY4QieUEegQIBx

    AI&ep=6

DeBaun, B. (2020, May 6). New data: Nearly 250,000 fewer low-income FAFSA renewals this

    cycle nationally. *National College Attainment Network.*

https://www.ncan.org/news/505741/New-Data-Nearly-250000-Fewer-Low-Income-FAFSA-Renewals-This-Cycle-Nationally.htm

Decker, R. A., Haltiwanger, J. C., Jarmin, R & Miranda, J. (2015). Where has all the skewness gone? The decline in high-growth (young) firms in the U.S. National Bureau of Economic Research- Working Paper Series. https://doi.org/10.3386/w21776

Dees, G. J. (2001). *The meaning of social entrepreneurship.* Center for the Advancement of Social Entrepreneurship. https://doi.org/10.4324/9781351278560-5

Dees, G. J. (2003). New definitions of social entrepreneurship: Free eye exams and wheelchair drivers. *Knowledge@Wharton Newsletter, 12*(10), 3–16.

Dees, J. (2012). A tale of two cultures: Charity, problem solving, and the future of social entrepreneurship. *Journal of Business Ethics, 111*(3), 321–334.

Delgado, G. (2005). Zeroing in: Choices and challenges for the National Rural Funders Collaborative. Oakland, CA; Applied Research Center.

Deming, W. E. (1994). *The new economics for industry, government, education* (2nd ed.). Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Dentoni, D., & Bitzer, V. (2015). The role(s) of universities in dealing with global wicked problems through multi-stakeholder initiatives. *Journal of Cleaner Production*, *106*, 68–78. https://doi.org/10.1016/j.jclepro.2014.09.050

Dentoni, D., Bitzer, V., & Pascucci, S. (2016). Cross-sector partnerships and the co-creation of dynamic capabilities for stakeholder orientation. *Journal of Business Ethics*, *135*(1), 35–53. https://doi.org/10.1007/s10551-015-2728-8

Denzin, N., & Lincoln, Y. (2002). *Strategies of qualitative inquiry*. Sage.

Determination Incorporated. (2021). *Home page*. https://determinationincorporated.com/

Devine-Wright, P., Fleming, P. D., & Chadwick, H. (2001). Role of social capital in advancing regional sustainable development. *Impact Assessment and Project Appraisal*, *19*(2), 161–167. https://doi.org/10.3152/147154601781767096

Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, *35*(12), 1504–1511. https://doi.org/10.1287/mnsc.35.12.1504

Dörner, D., & Funke, J. (2017). Complex problem solving: What it is and what it is not. *Frontiers in Psychology*, *8*, 1153. https://doi.org/10.3389/fpsyg.2017.01153

Drucker, P. F. (1985). *Innovation and entrepreneurship*. Harper & Row.

Duncan, C. (1999). Worlds apart: Why poverty persists in rural America. New Haven and London: Yale University Press (1999). Reviewed by William W. Dressler. *Journal of Political Ecology*, 8(1), 95-97.

Duke University. (n.d.). Fuqua School of Business and the Center for Advancement of Social Entrepreneurship. https://centers.fuqua.duke.edu/case/about/what-is-social-entrepreneurship/

Dukes, F. (1996). *Resolving public conflict: Transforming community and governance*. St. Martin's Press.

EdSource. (2020). *Coronavirus: Highlighting strategies for student success*. https://edsource.org/topic/coronavirus

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, *14*(4), 532-550. https://doi.org/10.5465/amr.1989.4308385

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and

challenges. *Academy of Management Journal*, *50*(1), 25–32.

https://doi.org/10.5465/amj.2007.24160888

Elia, G., & Margherita, A. (2018). Can we solve wicked problems? A conceptual framework and

a collective intelligence system to support problem analysis and solution design for

complex social issues. *Technological Forecasting and Social Change*, *133*, 279–286.

https://doi.org/10.1016/j.techfore.2018.03.010

Elkington, J. (1997). *Cannibals with forks: The triple bottom line of twenty-first century

business*. Capstone.

Elkington, R., & Upward, A. (2016). Leadership as enabling function for flourishing by design.

Journal of Global Responsibility, *7*(1), 126–144. https://doi.org/10.1108/JGR-01-2016-

0002

Emmrich, S. (2020, December 21). 7 Things to Know About MacKenzie Scott, the Woman

Who Has Donated 6 Billion Dollars in 2020. *Vogue.* https://www.vogue.com/article/7-

things-to-know-about-philanthropist-mackenzie-scott

Entre Ed. (2021). *National scope of America's entrepreneurial schools.* https://www.entre-

ed.org/impact

Entrepreneurial Learning Initiative. (2021). *The Entrepreneurial Imperative.*

https://elimindset.com/wp-content/uploads/2021/03/The-Entrepreneurial-Mindset-

Imperative.pdf

EXEC. (2021). *Experimental entrepreneurship curriculum.*

https://teachingentrepreneurship.org/exec/

ExpertInnengruppe LA21. (2010). *Dezentrale nachhaltigkeitsstrategien e 262mpere agenda 21, LA21e basisqualitäten 3.0 Positionspapier.* http://wasser.lebensministerium.at/article/articleview/69141/1/25710/

Fain, P. (2020). *Higher education and work amid crisis*. Inside Higher Ed. https://www.insidehighered.com/news/2020/06/17/pandemic-has-worsened-equity-gaps-higher-education-and-work

Fairlie, R. W., Couch, K., & Xu, H. (2020). *The impacts of COVID-19 on minority unemployment: First evidence from April 2020 CPS microdata (No. w27246)*. National Bureau of Economic Research.

Federal Reserve System. (2019). *Report on the economic well-being of U.S. households in 2018 – May 2019*. https://www.federalreserve.gov/publications/2019-economic-well-being-of-us-households-in-2018-dealing-with-unexpected-expenses.htm

Feeding America. (2021). *Hunger in America*. https://www.feedingamerica.org/hunger-in-america

Feld, B., & Hathaway, I. (2020). The Startup Way Evolving an Entrepreneurial Ecosystem.

Fellnhofer, K., Kraus, S., & Bouncken, R. (2014). Sustainable entrepreneurship: A current review of literature. *International Journal of Business Research*, *14*(3), 163–172. https://doi.org/10.18374/IJBR-14-3.11

Ferrer-Balas, D., Lozano, R., Huisingh, D., Buckland, H., Ysern, P., & Zilahy, G. (2010). Going beyond the rhetoric: System-wide changes in universities for sustainable societies. *Journal of Cleaner Production*, *18*(7), 607–610. https://doi.org/10.1016/j.jclepro.2009.12.009

Ferretti, C. (2020). Duggan's deficit plan: Tap surplus, trim pay, cut jobs. *The Detroit News*. https://www.detroitnews.com/story/news/local/263mpere263-city/2020/04/14/duggan-detail-cuts-combat-300-m-deficit-due-funding-losses-amid-pandemic/2988214001/

Fiet, J. O. (2002). *The systematic search for entrepreneurial discoveries*. Quorum Books.

Fitchen, J. (1980). *Poverty in rural America: A case study.* Boulder, Co: Westview Press.

Forester, J. (1999). *The deliberative practitioner: Encouraging participatory planning processes*. The MIT Press.

Foster, R., & Mundell, E. J. (2020). New analysis shows 21 states with spikes in covid-19 infections. *US News & World Report, Health News.* https://www.usnews.com/news/health-news/articles/2020-06-12/new-analysis-shows-21-states-with-spikes-in-covid-19-infections

Foundation for Economic Education. (1985). Competition in the prison business. *FEE.* https://fee.org/articles/competition-in-the-prison-business/

Fowler, A. (2014). *Innovation in institutional collaboration: The role of interlocutors* (Working Paper 584). International Institute of Social Studies, Erasmus University.

Fowler, A., & Biekart, K. (2016a). *Comparative studies of multi-stakeholder initiatives: Volume II scaling up (SUN) as a multi-stakeholder initiative-making ownership real.* International Institute of Social Studies, Erasmus University.

Fowler, A., & Biekart, K. (2016b). *Comparative studies of multi-stakeholder initiatives: Volume III country comparison reports-multi-stakeholder initiatives and contextual conditions.* International Institute of Social Studies. The Hague.

Fowler, A., & Biekart, K. (2017). Multi-stakeholder initiatives for sustainable development goals: The importance of interlocutors. *Public Administration and Development*, *37*(2), 81–93. https://doi.org/10.1002/pad.1795

Frank, R. (2020, May 21). American billionaires got $434 billion richer during the pandemic. *CNBC*. https://www.cnbc.com/2020/05/21/american-billionaires-got-434-billion-richer-during-the-pandemic.html

Frankel, T. (2021, February 10). A majority of the people arrested for Capitol Riot had a history of financial trouble. *The Washington Post*. https://www.washingtonpost.com/business/2021/02/10/capitol-insurrectionists-jenna-ryan-financial-problems/

Freeman, R. E. (1984). *Strategic management. A stakeholder approach*. Pitman Publishing.

Freeman, R. E. (1999). Divergent stakeholder theory. *Academy of Management Review*, *24*(2), 233–236. https://doi.org/10.5465/amr.1999.1893932

Friedmann, J. (2003). Why do planning theory? *Planning Theory*, *2*(1), 7–10. https://doi.org/10.1177/1473095203002001002

Fuessel, A. K. (2021). *Becoming a changemaker institution.* Ashoka U.

Gamboa, G. (2021, January 28). Foundations Focus Their Attentions on Saving Democracy. *The Chronicle of Philanthropy*. https://www.philanthropy.com/article/foundations-focus-their-attentions-on-saving-democracy

Garber, J., & O'Halloran, S. (2020, March 16). Dow drops 2,997 points on word coronavirus crisis could extend until August. *Fox News*. https://www.foxbusiness.com/markets/us-stocks-march-16-2020

Gell-Mann, M., & Tsallis, C. (2004). *Nonextensive entropy: Interdisciplinary applications.*

    Interdisciplinary applications. Oxford University Press.

Generation Hope. (2020). National Student Parent Survey Results & Recommendations:

    Uncovering the Student Parent Experience and its Impact on College Success.

    https://www.generationhope.org/student-parents-report-2020

Gibbons, T. (2020). *Eerie drone videos show desolate U.S. cities during coronavirus pandemic*.

    Radio.com. https://www.radio.com/news/gallery/coronavirus-eerie-drone-videos-show-

    empty-u-s-cities

Gines, D. & Sampson, R. (2019). Building Inclusive Entrepreneurship Ecosystems in

    Communities of Color. *Federal Reserve Bank of Kansas City.*

    https://www.kansascityfed.org/~/media/files/publicat/community/smallbusiness/ecosystem

    %20building%20in%20communities%20of%20color%20web.pdf

Global Strategy Group. (2020). Higher Ed Survey Highlights the Academic, Financial, and

    Emotional Toll of Coronavirus on Students. https://s3-us-east-

    2.amazonaws.com/edtrustmain/wp-content/uploads/sites/3/2017/11/27120859/Higher-

    Ed-Nationwide-CA-Memo-F05.27.20.pdf

Global Taskforce, UN Habitat, & UNDP. (2015). *Roadmap for localizing the SDGs:*

    implementation and monitoring at subnational level.

    https://sustainabledevelopment.un.org/content/documents/commitments/818_11195_com

    mitment_ROADMAP%20LOCALIZING%20SDGS.pdf

Goldrick-Rab, S., & Han, S. (2010). The class gap in the "gap year": Academic course- taking,

    family formation, and socioeconomic differences in delaying the transition to college.

    Review of Higher Education.

Goldrick-Rab, S., Coca, V., Kienzl, G., Welton, C. R., Dahl, S., & Magnelia, S. (2020). *New evidence on basic needs insecurity and student well-being*. Hope Center. https://hope4college.com/wp-content/uploads/2020/06/Hopecenter_RealCollegeDuringthePandemic.pdf

Goldrick-Rab, S., Richardson, J., & Hernandez, A. (2017). *Hunger and homelessness in college: Results from a national study of basic needs insecurity in higher education*. Wisconsin HOPE Lab. https://www.wihopelab.com/publications/Hungry-and-Homeless-in-College-Report.pdf

Goldstein, J. (1994). *The unshackled organization: Facing the challenge of unpredictability through spontaneous reorganization*. Productivity Press.

González-Rodríguez, M. R., Díaz-Fernández, M. C., & Simonetti, B. (2015). The social, economic and environmental dimensions of corporate social responsibility: The role played by consumers and potential entrepreneurs. *International Business Review*, *24*(5), 836–848.

The Governance Lab [GovLab]. (2021). https://www.thegovlab.org/about.html

Great Schools Partnership. (2014). *The glossary of education reform.* http://edglossary.org/stakeholder/

Greco, A., & De Jong, G. (2017). Sustainable entrepreneurship: definitions, themes and research gaps. *Centre for Sustainable Entrepreneurship, Working paper 1706.* http://doi.org/10.13140/RG.2.2.16751.12968

Greenwood, R., Raynard, M., Kodeih, F., Micelotta, E. R., & Lounsbury, M. (2011). Institutional complexity and organizational responses. *The Academy of Management Annals, 5*, 317–371.

Guba, E., & Lincoln, Y. (1981). *Effective evaluation improving the usefulness of evaluation results through responsive and naturalistic approaches*. Jossey-Bass.

Guba, E., & Lincoln, Y. (1989). *Fourth generation evaluation*. Sage.

Guidant Financial. (2021). *Small business trends: 2021*. www.guidantfinancial.com/small-business-trends/

Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal*, *20*(5), 397–420. https://doi.org/10.1002/(SICI)1097-0266(199905)20:5<397::AID-SMJ35>3.0.CO;2-K

Gulati, R., Puranam, P., & Tushman, M. L. (2012). Meta-organization design: Rethinking design in interorganizational and community contexts. *Strategic Management Journal, 33*(6), 571–586.

Gumport, P. (2003). The demand-response scenario: Perspectives of community college presidents. *The ANNALS of the American Academy of Political and Social Science*, *586*(1), 38–61.

Habermas, J. (1998). Faktizitaẗ und geltung. In *Beitra ̈ge zur Diskurstheorie des Rechts und des demokratischen Rechtsstaats*. Suhrkamp.

Habermas, J. (1999). *Theorie des kommunikativen handelns. Band 1: Handlungsrationalitaẗ und gesellschaftliche rationalisierung* (3rd ed.). Suhrkamp.

Haines, S. G. (1998). *The manager's pocket guide to systems thinking & learning*. Human Resource Development.

Hajer, M. A., & Wagenaar, H. (2009). *Deliberative policy analysis. Understanding governance in the network society*. Cambridge University Press.

Haltiwanger, J. C., Jarmin, R., & Miranda, J. (2010) Who creates jobs? Small vs. Young.

    National Bureau of Economic Research. Working Paper Series.

    https://www.nber.org/system/files/working_papers/w16300/revisions/w16300.rev0.pdf

Haney, A. B., & Drobac, P. (2020, May 4). Businesses, take note – coronavirus is worsened by

    the same systems that caused the climate crisis. *The Independent.*

    https://www.independent.co.uk/voices/coronavirus-pandemic-health-climate-emergency-

    crisis-business-government-a9497496.html

Hanson, C. (2008). Putting community back in the community college: The case for a

    localized and problem-based curriculum. *Community College Journal of Research and*

    Practice, *32*, 999–1007.

Hardy, D. E., & Katsinas, S., G. (2007). Classifying community colleges: How rural community

    colleges fit. *New Directions for Community Colleges,* (137), 5–17.

    https://doi.org/10.1002/cc.265

Hatch, J. (2002). *Doing qualitative research in education settings*. State University of New York

    Press.

Hautz, J., Seidl, D., & Whittington, R. (2017). Open strategy: Dimensions, dilemmas, dynamics.

    Long Range Planning, *50*(3), 298–309. https://doi.org/10.1016/j.lrp.2016.12.001

Hays, D., & Singh, A. (2012). *Qualitative inquiry in clinical and educational settings (old*

    dominion university faculty author: Counseling). Guilford Press.

Hazy, J. K., Goldstein, J., & Lichtenstein, B. (2007). Complex systems leadership theory: An

    introduction. In J. K. Hazy, J. Goldstein, & B. Lichtenstein (Eds.), *Complex systems*

    leadership theory: New perspectives from complexity science on social and

    organizational effectiveness. ISCE Publishers.

Healey, P. (1997). *Collaborative planning: Shaping places in fragmented societies.* UBC Press.

Healey, P., Magalhaes, C., Madanipour, A., & Pendlebury, J. (2009). Place, identity and local politics: Analysing initiatives in deliberative governance. In M. A. Hajer & H. Wagenaar (Eds.), *Deliberative Policy Analysis* (pp. 60–87). Cambridge University Press.

Hearn, J. (2006). *Student success: What research suggests for policy and practice*. Washington DC: National Postsecondary Education Cooperative.

Heelan, C., & Mellow, G. (2017). Social justice and the Community College Mission. New *Directions for Community Colleges* (180), 19-25. https://doi.org/10.1002/cc.20277

Heintz, S. (2020, July 30). For Philanthropy to Achieve Its Goals, Democracy Must Work. *The Chronicle of Philanthropy*. https://www.philanthropy.com/article/for-philanthropy-to-achieve-its-goals-democracy-must-work

Hemmati, M. (2002). *Multi-stakeholder processes for governance and sustainability: Beyond deadlock and conflict*. Earthscan Publications Ltd.

Hertel, N. G. (2020, June 3). 'All from a counterfeit bill': What we know about fake currency and George Floyd's death. *SC Times*. https://www.sctimes.com/story/news/2020/06/03/what-we-know-fake-currency-and-george-floyds-death-minneapolis-counterfeit-police/5310999002/

Hess, A. J. (2020, June 12). How student debt became a $1.6 trillion crisis. *CNBC Make It*. https://www.cnbc.com/2020/06/12/how-student-debt-became-a-1point6-trillion-crisis.html

Hockerts, K., & Wüstenhagen, R. (2010). Greening Goliaths versus emerging Davids — theorizing about the role of incumbents and new entrants in sustainable entrepreneurship.

Journal of Business Venturing, *25*(5), 481–492.

https://doi.org/10.1016/j.jbusvent.2009.07.005

Holland, J. H. (1995). *Hidden order; how adaptation builds complexity*. Addison-Wesley.

Horn, A. (2017). EshipSeries: So You Think You're an Ecosystem Builder…

A Job Description and Training Curriculum for Ecosystem Builders of the Future.

https://bthechange.com/so-you-think-youre-an-ecosystem-builder-63c8f2ab9fde

Hospes, O. (2008). Evaluation evolution? Three approaches to evaluation. *The Broker* (8):24-26.

https://doi.org/10.1177/1356389015607712

Hope Center for College, Community, and Justice. (2021). https://hope4college.com/about-the-

hope-center/

Hunter, M. (2012). Creative intelligence and its application to entrepreneurial opportunity and

ethics. *Contemporary Readings in Law and Social Justice*, *4*(1), 69–149.

Huutoniemi, K., & Tapio, P. (Eds.). (2014). *Heuristics for transdisciplinary sustainability*

studies: Solution-oriented approaches to complex problems. Routledge.

Hutcheson, S., & Morrison, E. (2012). Transforming regions through Strategic DOING. *Choices,*

27(2). 1–6.

Hwang, V. W. (2020). We are all starters.

https://static1.squarespace.com/static/5ed13f0ca194c46631e28de6/t/5ed947986673ef77c

8aea623/1591297955535/We+Are+All+Starters+Manifesto.pdf

Hymes, H., McDonald, C., & Watson, E. (2021, March 5). Over 300 charged from more than 40

states: What we know about the "unprecedented" Capitol riot arrests. *CBS News*.

https://www.cbsnews.com/news/capitol-riot-arrests-2021-03-05/

Innes, J. E. (1996). Planning through consensus building: A new view of the comprehensive

 planning ideal. *Journal of the American Planning Association*, *62*(4), 460–472.

 https://doi.org/10.1080/01944369608975712

Innes, J. E. (1999). Evaluating consensus building. In L. Susskind, S. McKeaman, & J. T.-

 Larmer (Eds.), *The consensus building handbook: A comprehensive guide to reaching

 agreement* (pp. 631–676). Sage.

Innes, J. E., & Booher, D. E. (2016). Collaborative rationality as a strategy for working with

 wicked problems. *Landscape and Urban Planning*, *154*, 8–10.

 https://doi.org/10.1016/j.landurbplan.2016.03.016

Institute for Innovation and Public Purpose [IIPP]. (2021). https://www.ucl.ac.uk/bartlett/public-

 purpose/sites/public-purpose/files/190304_iipp_brochure_web_8_oct_2019_final_0.pdf

Institute for Women Policy Research [IWPR]. (2017, September). *Single mothers in college:

 growing enrollment, financial challenges, and the benefits of attainment.*

 https://iwpr.org/wp-content/uploads/2020/08/C460_Single-Mothers-Briefing-Paper-

 8.21.17-final.pdf

International Economic Development Council [IEDC]. (2021). Online Training Course-

 Introduction to Entrepreneurship-Led Economic Development.

 https://www.iedconline.org/events/2021/04/20/training-course/online-training-course-

 introduction-to-entrepreneurship-led-economic-development/

International Economic Development Council [IEDC]. (2017). *Economic Diversification: How

 Community Colleges Prepare the Workforce.*

 https://www.iedconline.org/clientuploads/Downloads/Economic_Diversification_Paper_1

 .pdf

International Council for Small Business [ICSB]. (2021, February 9). *GWSB course spotlight: entrepreneurship ecosystems and the unsustainable development goals* [Video]. Youtube. https://www.youtube.com/watch?v=Vnidf6hO71M&feature=share&fbclid=IwAR3zfhQf HUrCDG40B7vuQ_kGUoQDSXgOiDhqf0khA5p4u3CgeA6oatLsfjk

International Sustainable Campus Network [ISCN]. (2019, October 14). *2018 WEF-ISCN Report: Educating with purpose.* https://international-sustainable-campus-network.org/best_practices/2018-wef-gulf-iscn-report-educating-with-purpose/

Isele, E., & Rogoff, E. G. (2014). Senior entrepreneurship: the new normal. *Public Policy & Aging Report, 24*(4), 141-147. https://doi.org/10.1093/ppar/pru043

Isenman, P., Bezanson, K., & Gostelow, L. (2011). *Stewardship of the SUN movement; taking SUN to the next level*. SUN Secretariat.

Jameson, J., & O'Donnell, P. (2015). The Entrepreneurial University: a Unifying Theme for TU4Dublin. Stream 1: Enterprise and Engagement. Dublin Institute of Technology-Higher Education in Transformation Conference. https://arrow.tudublin.ie/st1/6/.

Jentoft, S., & Chuenpagdee, R. (2009). Fisheries and coastal governance as a wicked problem. *Marine Policy*, *33*(4), 553–560. https://doi.org/10.1016/j.marpol.2008.12.002

Jiao, H. (2011). A conceptual model for social entrepreneurship directed toward social impact on society. *Social Enterprise Journal, 7*(2), 130-149. http://dx.doi.org.proxy.lib.odu.edu/10.1108/17508611111156600

Johansen, V. (2010). Entrepreneurship education and entrepreneurial activity. *International Journal of Entrepreneurship and Small Business*, *9*(1), 74. https://doi.org/10.1504/IJESB.2010.029507

Johansen, V. (2009). Entrepreneurship education and entrepreneurial activity. *International*

Journal of Entrepreneurship and Small Business, 9(1), 74-85.

Johansson-Sköldberg, U., Woodilla, J. & Çetinkaya, M. (2013). Design thinking: past, present and possible futures. *Creativity and Innovation Management*, 22, 121–146. https://doi.org/10.1111/caim.12023

Johnson, B. (2013). Baylor study. *PEP*. https://www.pep.org/baylor-study/

Johnson, R. (1997). Examining the validity structure of qualitative research. *Education*, *118*(2), 282–292.

John's Hopkins University (2021). Coronavirus Resource Center. https://coronavirus.jhu.edu/map.html

Joint Legislative Audit and Review Commission. (2017). *Report to the governor and general assembly of Virginia: Operations and performance of the Virginia community college system* (JLARC Report No. 495). Richmond, VA: Joint Legislative Audit and Review Commission.

Jones, P. H. (2014), "Systemic design principles for complex social systems", in Metcalf, G. (Ed.), Social Systems and Design, Volume 1 of the Translational Systems Science Series, Springer, Tokyo, pp. 91-128.

Jones, T. M., Felps, W., & Bigley, G. A. (2007). Ethical theory and stakeholder-related decisions: The role of stakeholder culture. *Academy of Management Review*, *32*(1), 137–155. https://doi.org/10.5465/amr.2007.23463924

Josephsen, L. (2017). *Approaches to the implementation of the sustainable development goals: Some considerations on the theoretical underpinnings of the 2030 agenda* (Economics Discussion Papers, No. 2017-60). Kiel Institute for the World Economy.

Kagan, R. A. (1991). Adversarial legalism and American government. *Journal of Policy Analysis and Management*, *10*(3), 369–406.

Kania, J., & Kramer, M. (2013). Embracing emergence: How collective impact addresses complexity. *Stanford Social Innovation Review 11,* 1–7.

Kanter, M., & Ochoa, E. (2012). *Foreword to crucible moment: College learning and democracy's future.* Washington, DC: American Association of American Colleges and Universities.

Kashen, J., Glynn, S. J., & Novello, A. (2020, October 30). How COVID-19 sent women's workforce progress backward. *Center for American Progress.* https://www.americanprogress.org/issues/women/reports/2020/10/30/492582/covid-19-sent-womens-workforce-progress-backward/

Kauffman Foundation. (2021). Entrepreneurial Ecosystem Building 3.0. https://www.kauffman.org/ecosystem-playbook-draft-3/

Kaufmann Foundation. (2020). *The 2020 ESHIP Summit: Building inclusive entrepreneurial communities; September 15-16 and 29.* https://www.kauffman.org/eship-summit/

Kaufmann Foundation. (2017). *State of entrepreneurship 2017, zero barriers: Three mega trends shaping, the future of entrepreneurship.* https://www.kauffman.org/wp-content/uploads/2020/04/state_of_entrepreneurship_address_report_2017.pdf

Kauffman Foundation. (2005). *Entrepreneurship education comes of age on campus: The challenges and rewards of bringing entrepreneurship to higher education.* http://www.kauffman.org/ /media/274mpere274s_org/research reports and covers/ Orensten, & Buteau, 2020).

Kauffman, S. A. (1993). *Origins of order: Self organization and selection in evolution*. Oxford University Press.

Kauffman, S. A. (1995). *At home in the universe: The search for laws of self-organization and complexity*. Viking.

Kauffman, S. A. (2007). Beyond reductionism: Reinventing the sacred. *Zygon®*, *42*(4), 903–914. https://doi.org/10.1111/j.1467-9744.2007.00879.x

Kelly, K. (1994). *Out of control: The new biology of machines, social systems and the economic world*. Addison-Wesley.

Kenworthy-U'ren, A., Taylor, M., & Petri, A. (2006). Components of successful service-learning programs: Notes from Barbara Holland, Director of the US National Service-Learning Clearinghouse. *International Journal of Case Method Research and Application*, *18*, 120–129.

Klein, J. T. (2008). Evaluation of interdisciplinary and transdisciplinary research: A literature review. *American Journal of Preventive Medicine*, *35*(2 Suppl), S116-23. https://doi.org/10.1016/j.amepre.2008.05.010

Klewes, P. K. (2004). *Geheime Mission? Deutsche Unternehmen im Dialog mit kritischen Stakeholdern. Eine Umfrage unter den 150 gro¨ßten Unternehmen*. Bonn und Berlin.

Koliba, C., Gerrits, L., Rhodes, M., & Meek, J. (2014). Complexity theory, networks and system analysis. In C. Ansell & J. Torfing (Eds.), *Handbook on theories of governance* (pp. 364–379). Edward Elgar Publishing.

Kommission der Europäischen Gemeinschaft. (2001). Nachhaltige Entwicklung in Europa für eine Bessere Welt. In *Strategie der Europäischen Union für die nachhaltige Entwicklung. Mitteilung der Kommission 264*.

Kramer, M., Pfitzer, M., & Mahne, H. (2020). How global leaders should think about solving our biggest problems. *Harvard Business Review*, *16*. https://hbr.org/2020/01/how-global-leaders-should-think-about-solving-our-biggest-problems

Krueger, N., (2015) *Entrepreneurial Education in Practice: Part 1 – The Entrepreneurial Mindset.* OECD.   http://www.oecd.org/cfe/leed/Entrepreneurial-Education-Practice-pt1.pdf

Küttim, M., Kallaste, M., Venesaar, U., & Kiis, A. (2014). Entrepreneurship education at university level and students' entrepreneurial intentions. *Procedia – Social and Behavioral Sciences*, *110*, 658–668. https://doi.org/10.1016/j.sbspro.2013.12.910

Labov, J. (2012). Changing and evolving relationships between two and four-year colleges and universities: They're not your parents' community colleges anymore. *CBE Life Sciences Education,11*(2), 121-128.

Labuschagne, A. (2003). Qualitative research: Airy fairy or fundamental? *The Qualitative Report*, *8*(1), 7. https://doi.org/10.46743/2160-3715/2003.1901

Lackéus, M., (2015). *Entrepreneurship in Education: What, Why, When, How*. OECD. https://www.oecd.org/cfe/leed/BGP_Entrepreneurship-in-Education.pdf

Lakoff, G. (2010). Why it matters how we frame the environment. *Environmental Communication*, *4*(1), 70–81. https://doi.org/10.1080/17524030903529749

Lakoff, G. P. (2006). *Whose freedom?* Farrar, Straus, and Giroux.

Lans, T., Blok, V., & Wesselink, R. (2014). Learning apart and together: Towards an integrated competence framework for sustainable entrepreneurship in higher education. *Journal of Cleaner Production*, *62*, 37–47. https://doi.org/10.1016/j.jclepro.2013.03.036

Larson, J. E., Corrigan, P., & Rainer, J. P. (2010). Psychotherapy for self-stigma among rural clients. *Journal of Clinical Psychology*, 66(5), 524-536. https://doi.org/10.1002/jclp.20676

Lewis, T. (2021, January 11). The 'Shared Psychosis' of Donald Trump and his loyalists. *Scientific American.* https://www.scientificamerican.com/article/the-shared-psychosis-of-donald-trump-and-his-loyalists/

Lawrence, S., Hogan, M., & Brown, E. (2020). *Venture catalyst network impact study and evaluation*. RTI International. https://www.oregonrain.org/wp-content/uploads/2020/08/VCN-Impact-Study-and-Evaluation-Compressed.pdf

Lazarus, R. (2009). Super wicked problems and climate change: Restraining the present to liberate the future. *Cornell Law Rev*, *94*, 1234–1153.

Leedy, P., & Ormrod, J. (2016). *Practical research planning and design* (10th ed.). Merrill.

Lehmann, M., Christensen, P., Thrane, M., & Jørgensen, T. H. (2009). University engagement and regional sustainability initiatives: Some Danish experiences. *Journal of Cleaner Production*, *17*(12), 1067–1074. https://doi.org/10.1016/j.jclepro.2009.03.013

Levin, K., Cashore, B., Bernstein, S., & Auld, G. (2012). Overcoming the tragedy of super wicked problems: Constraining our future selves to ameliorate global climate change. *Policy Sciences*, *45*(2), 123–152. https://doi.org/10.1007/s11077-012-9151-0

Levinson, Meira. (2010). The Civic Empowerment Gap: Defining the Problem and Locating Solutions. In *Handbook of Research on Civic Engagement in Youth* (pp. 331-361). Hoboken, NJ, USA: John Wiley & Sons.

Lewis, H. (2007), A systems approach to the complexity of entrepreneurship education. Paper presented at the 30th ISBA National Small Firms Conference, Glasgow.

Lichtenstein, B. B., & Plowman, D. A. (2009). The leadership of emergence: A complex systems leadership theory of emergence at successive organizational levels. *The Leadership Quarterly*, *20*(4), 617–630. https://doi.org/10.1016/j.leaqua.2009.04.006

Lin, J., & Nabergoj, A. S. (2014). A resource-based view of entrepreneurial creativity and its implication in entrepreneurship education. *Proceedings of the 2nd International Conference on Innovation and Entrepreneurship: ICIE 2014*, 307.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Sage.

Listen First Project. (2021). *#First project*. http://www.listenfirstproject.org/

Lorenz, E. N. (1995). *The essence of chaos*. University of Washington Press.

Local 2030. (2020). *Localizing the SDGS*. https://www.local2030.org/

Long, H. (2020, December 16). Nearly 8 million Americans have fallen into poverty since the summer. *The Washington Post.* https://www.washingtonpost.com/business/2020/12/16/poverty-rising/

Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D., & Lambrechts, W. (2013). Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system. *Journal of Cleaner Production*, *48*, 10–19. https://doi.org/10.1016/j.jclepro.2011.10.006

Luntz, F. (2003). The environment: A cleaner, safer, healthier America. In *The Luntz Research Companies*straight talk* (pp. 131–146).

Mallin, A. & Barr, L. (2021). FBI director says Capitol assault 'domestic terrorism,' no evidence of antifa. ABCNews. https://abcnews.go.com/Politics/fbi-director-testifies-time-capitol-assault/story?id=76187365

Manring, S. L. (2014). The role of universities in developing interdisciplinary action research collaborations to understand and manage resilient social-ecological systems. *Journal of Cleaner Production*, *64*, 125–135. https://doi.org/10.1016/j.jclepro.2013.07.010

Mansharamani, V. (2020, June 15). *Harvard lecturer: 'No specific skill will get you ahead in the future'—but this 'way of thinking' will.* CNBC. https://www.cnbc.com/2020/06/15/279mpere279-yale-researcher-future-success-is-not-a-specific-skill-its-a-type-of-thinking.html

Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly*, *48*(2), 268. https://doi.org/10.2307/3556659

Marquis, C., Lounsbury, M., & Greenwood, R. (2011). Introduction: Community as an institutional order and a type of organizing. In *Communities and organizations*. Emerald Group Publishing Limited.

Mars, M. M. (2013). Community college economic and workforce development education in the neoliberal and academic capitalist contexts. In J. S. Levin & S. T. Kater (Eds.), *Understanding community colleges* (pp. 217–230). New York: Routledge.

Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research* (4th ed.). Sage.

Marshall, M. N. (1996). The key informant technique. *Family Practice*, *13*(1), 92–97. https://doi.org/10.1093/fampra/13.1.92

Martin, R. L., & Osberg, S. (2007). Social entrepreneurship: The case for definition. *Stanford Social Innovation Review, 5*(2), 28-39. https://ssir.org/articles/entry/social_entrepreneurship_the_case_for_definition

Mathema, S. (2017, January 9). Ending DACA will cost states billions of dollars. *Center for*

American Progress.

https://www.americanprogress.org/issues/immigration/news/2017/01/09/296125/ending-daca-will-cost-states-billions-of-dollars/

Maxwell, J. (2013). *Qualitative research design an interactive approach* (3rd ed.). Sage.

Mazzucato, M. (2020, April 2). Coronavirus and capitalism: How will the virus change the way the world works? *World Economic Forum.*

https://www.weforum.org/agenda/2020/04/coronavirus-covid19-business-economics-society-economics-change

McFarland, C., Gleeson, M., & Pine, J. (2021, February 8). The danger of conflating state and local pandemic relief. *National League of Cities.*

https://www.nlc.org/article/2021/02/08/the-danger-of-conflating-state-and-local-pandemic-relief/

McGhee, P., & Grant, P. (2016). Teaching the virtues of sustainability as flourishing to undergraduate business students. *Global Virtue Ethics Review*, *7*(2), 73–117.

McGrath, R. G., & MacMillan, I. C. (2000). *The entrepreneurial mindset: Strategies for continuously creating opportunity in an age of uncertainty* (Vol. 284). Harvard Business School Press.

McKelvey, B., & Lichtenstein, B. (2007). Leadership in the four stages of emergence. In J. Hazy, J. Goldstein, & B. Lichtenstein (Eds.), *Complex systems leadership theory* (pp. 94–107). ISCE Press.

McKinsey & Company. (2020a). *The near-term impact of coronavirus on workers.*

https://www.mckinsey.com/industries/public-sector/our-insights/lives-and-livelihoods-assessing-the-near-term-impact-of-covid-19-on-us-workers?

McKinsey & Company. (2020b). *COVID-19 and Advancing Asian American Recovery..*

> https://www.mckinsey.com/industries/public-sector/our-insights/lives-and-livelihoods-

> assessing-the-near-term-impact-of-covid-19-on-us-workers?

McKinsey & Company. (2020c). *The Future of Work After COVID-19.*

> https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-

> covid-19

McKinsey & Company, Ashoka, Catalyst 2030, Echoing Green, Schwab Foundation & the Skoll

> Foundation. (2021, January 19). New Allies: How governments can unlock the potential

> of social entrepreneurs for the common good. *Catalyst 2030.*

> https://catalyst2030.net/resources/new-allies-report/

Meadows, D., H. (2008). *Thinking in systems: A primer*. Chelsea green publishing.

Melguizo, T., & Whitham, K. (2018, June). Funding community colleges for equity, efficiency,

> and student success. Washington, DC: The Century Foundation. Retrieved from

> https://tcf.org/content/report/funding-community-colleges-equity-efficiency-student-

> success-examination-evidence-california/?agreed=1

Mena, S., & Palazzo, G. (2012). Input and output legitimacy of multi-stakeholder initiatives.

> *Business Ethics Quarterly*, *22*(3), 527–556. https://doi.org/10.5840/beq201222333

Menendian, S., Watt, C., & Grant-Thomas, A. (2008). *Systems Primer*, Kirwan Institute for the

> Study of Race and Ethnicity. Ohio State University, Columbus.

Merali, Y. (2006). Complexity and information systems: The emergent domain. *Journal of*

> *Information Technology*, *21*(4), 216–228. https://doi.org/10.1057/palgrave.jit.2000081

Merriam, S. (1988). *Case study research in education: A qualitative approach.* Josey Bass.

Merriam, S., & Tisdell, E. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.

Miotto, G., Blanco-González, A., & Díez-Martín, F. (2020). Top business school's legitimacy quest through the sustainable development goals. *Heliyon, 6*(11), e05395. https://doi.org/10.1016/j.heliyon.2020.e05395

Mishra, C. S., & Zachary, R. K. (2015). The Theory of Entrepreneurship. *Entrepreneurship Research Journal, 5*(4), 251-268. Doi:http://dx.doi.org.proxy.lib.odu.edu/10.1515/erj-2015-0042

Mishra, C. S., & Zachary, R. K. (2014). *The theory of entrepreneurship.* New York, NY: Palgrave Macmillan.

Mitchell, M. (2009). *Complexity: A guided tour*. Oxford University Press.

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and What really counts. *Academy of Management Review*, *22*(4), 853–886. https://doi.org/10.5465/amr.1997.9711022105

Moore, R. (2014). Uncertainty and the entrepreneurial mindset. *EFMD Global Focus*, *8*(2), 28–32.

Morgan, A., & Drury, V. (2003). Legitimizing the subjectivity of human reality through qualitative research method. *The Qualitative Report*, *8*(1), 70–80.

Moriano, J., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development, 39*(2), 162-185. https://doi.org/10.1177/0894845310384481.

Morrison, E., Barrett, J. D., & Fadden, J. B. (2019). Shoals shift project: An ecosystem transformation success story. *Journal of Entrepreneurship and Public Policy*, *8*(3), 339–358. https://doi.org/10.1108/JEPP-04-2019-0033

Mumford, M. D., Connelly, S., & Gaddis, B. (2003). How creative leaders think: Experimental findings and cases. *The Leadership Quarterly*, *14*(4–5), 411–432. https://doi.org/10.1016/S1048-9843(03)00045-6

Mumford, M. D., Mobley, M. I., Reiter-Palmon, R., Uhlman, C. E., & Doares, L. M. (1991). Process analytic models of creative capacities. *Creativity Research Journal*, *4*(2), 91–122. https://doi.org/10.1080/10400419109534380

Munhall, P. (2001). *Nursing research: A qualitative perspective*. Jones & Barlett.

Murphy, M., Perrot, F., & Rivera-Santos, M. (2012). New perspectives on learning and innovation in cross-sector collaborations. *Journal of Business Research*, *65*(12), 1700–1709. https://doi.org/10.1016/j.jbusres.2012.02.011

Murphy, T. (2006). The rural challenge. (Unpublished Research by L&M Associates Using Data on the Top 1,000 Foundations as Provided by the Foundation Center). In possession of the primary author.

Nasr, K. B., & Boujelbene, Y. (2014). Assessing the impact of entrepreneurship education. *Procedia-Social and Behavioral Sciences, 109*, 712-715.

National Association of Community College Entrepreneurship [NACCE]. (2020). *Global entrepreneurship center of practice*. https://www.nacce.com/global-entrepreneurship-center-of-practice

National Association of Community College Entrepreneurship [NACCE]. (2021). *Makerspace Guide: The Power of Making*. https://www.nacce.com/makerspace-guide

National Commission on Community Colleges. (2008). *Winning the skills race and*

    strengthening America's middle class: An action agenda for community colleges. College

    Board.

National Commission on Community Colleges. (2008). Winning the skills race and

    strengthening America's middle class: An agenda for community colleges. College

    Board.

    www.collegeboard.com/prod_downloads/prof/community/winning_the_skills_race.pdf.

National Entrepreneurship Week. (2021). *About National Entrepreneurship Week; February 12-*

    19, 2022. https://www.natleshipweek.org/about

National Oceanic and Atmospheric Administration. (2021). Billion-Dollar Weather and Climate

    Disasters: Overview. https://www.ncdc.noaa.gov/billions/

National Student Clearinghouse Research Center. (2020). Current Term Enrollment Estimates.

    https://nscresearchcenter.org/wp-content/uploads/CTEE_Report_Fall_2020.pdf

NBC Nightly News. (2021, February 2). *NBC Nightly News Broadcast (Full)* [Video]. You

    Tube. https://www.youtube.com/watch?v=3cua6XG3WWc

NBC News. (2021, January 21). *NBC Nightly News Broadcast (Full) – January 26th, 2021 | NBC*

    Nightly News [Video]. You Tube. https://www.youtube.com/watch?v=Psn0GrHzBa4

NC State University. (2020). *NC State civic action plan*. https://oe.ncsu.edu/wp-

    content/uploads/2020/08/NC-State-Civic-Action-Plan-Summer-2020.pdf

Neck, H., Greene, P., & Brush, C. (Eds.). (2014). *Teaching entrepreneurship: A practice-based*

    approach. Edward Elgar Publishing.

Nelson, H.G, & Stolterman, E. (2012), The Design Way: Intentional Change in an

    Unpredictable World, The MIT Press, Cambridge, MA.

Newport, F. (2016). Gallup Poll. Fewer Americans identify as middle class in recent

years. Retrieved from http://www.gallup.com/poll/182918/fewer-americans-identify -

middle-class-recent-years.aspx

Nicholls-Nixon, C. L., Cooper, A. C., & Woo, C. Y. (2000). Strategic experimentation. *Journal

of Business Venturing*, *15*(5–6), 493–521. https://doi.org/10.1016/S0883-9026(98)00018-

4

Nijhuis, A., & Eberhardt. P. (2021). Innovative prison entrepreneurship program is creating

wealth & reducing recidivism among formerly incarcerated. *ICIC*.

https://icic.org/blog/innovative-prison-entrepreneurship-program-creating-wealth-

reducing-recidivism-among-formerly-incarcerated/

Nolan, M., & Behi, R. (1995). Alternative approaches to establishing reliability and validity.

British Journal of Nursing (Mark Allen Publishing), *4*(10), 587–590.

https://doi.org/10.12968/bjon.1995.4.10.587

Norris, P. E., O'Rourke, M., Mayer, A. S., & Halvorsen, K. E. (2016). Managing the wicked

problem of transdisciplinary team formation in socio-ecological systems. *Landscape and

Urban Planning*, *154*, 115–122. https://doi.org/10.1016/j.landurbplan.2016.01.008

O'Rourke, D. (2006). Multi-stakeholder regulation: Privatizing or socializing global labor

standards? *World Development*, *34*(5), 899–918.

https://doi.org/10.1016/j.worlddev.2005.04.020

Ocasio, W., & Thornton, P. H. (1999). Institutional logics and the historical contingency of

Power in organizations: Executive succession in the higher education publishing industry,

1958-1990. *American Journal of Sociology, 105*, 801–843.

OpenIDEO. (2021). *Home page.* https://www.openideo.com/

Opportunity America. (2020). *The indispensable institution: Reimagining community colleges.* https://opportunityamericaonline.org/indispensable/

ÖROK. (2002). *Das österreichische raumentwicklungskonzept ÖREK 2001*. Eigenverlag.

O'Reilly, C. & Tushman, M. L. (2004). The ambidextrous organization. *Harvard Business Review, 82*(4), 74-140.

Orensten, N. & Buteau, E. (2020). Foundations Respond to Crisis. *Center for Effective Philanthropy.* https://cep.org/foundations-respond-to-crisis/

Organization for Economic Co-Operation and Development [OECD]. (2021). http://www.oecd.org/cfe/leed/reports-skills-entrepreneurship.htm

Organization for Economic Co-Operation and Development [OECD]. (2012). A Guiding Framework for Entrepreneurial Universities. https://www.oecd.org/site/cfecpr/EC-OECD%20Entrepreneurial%20Universities%20Framework.pdf

Osborne, M. (2020, June 1). 8,000+ community college students share their COVID-19 stories. *EdNC.* https://www.ednc.org/nc-community-college-students-share-covid-19-impact/

Osterwalder, A., & Pigneur, Y. (2010). Business model generation: a handbook for visionaries, game changers, and challengers, John Wiley & Sons.

Otani, A. (2015, January 5). *These are the skills you need if you want to be headhunted: Good old-fashioned communications skills go a long way with recruiters*. Bloomberg Business/ Fast Company. http://www.bloomberg.com/news/articles/2015-01-

Pacheco, D. F., Dean, T. J., & Payne, D. S. (2010). Escaping the green prison: Entrepreneurship and the creation of opportunities for sustainable development. *Journal of Business Venturing*, *25*(5), 464–480. https://doi.org/10.1016/j.jbusvent.2009.07.006

Palazzo, G. (2002). *Die mitte der demokratie. U¨ber die theorie deliberativer demokratie von ju¨rgen 287mpere287s*. Nomos.

Palazzo, G., & Scherer, A. G. (2008). Corporate social responsibility, democracy, and the politicization of the corporation. *Academy of Management Review*, *33*(3), 773–775. https://doi.org/10.5465/amr.2008.32465775

Parham, M. (2020). *AACC provides insights to Biden transition team.* Association of American Colleges & Universities. https://www.ccdaily.com/2020/12/aacc-provides-insights-to-biden-transition-team/

Patel, S., & Mehta, K. (2017). Systems, design, and entrepreneurial thinking: Comparative frameworks. *Systemic Practice and Action Research, 30*(5), 515-533. https://doi.org/10.1007/s11213-016-9404-5

Peer, V., & Stoeglehner, G. (2013). Universities as change agents for sustainability – framing the role of knowledge transfer and generation in regional development processes. *Journal of Cleaner Production*, *44*, 85–95. https://doi.org/10.1016/j.jclepro.2012.12.003

Pfeffer, J. (1992). *Managing with power politics and influence in organizations*. Harvard Business School Press.

Peitgen, H.-O., Jürgens, H., & Saupe, D. (2004). *Chaos and fractals: New frontiers of science*. Springer.

Penrose, E. (1959). *The theory of the growth of the firm*. Wiley.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, *14*(3), 179–191. https://doi.org/10.1002/smj.4250140303

Phelan, S. E. (2001). What is complexity science, really? *Emergence*, *3*(1), 120–136. https://doi.org/10.1207/S15327000EM0301_08

Philliber, S., Schwab, M., & Samsloss, G. (1980). *Social research: Guides to a decision-making process*. Peacock.

Phillips, R. (2003). Stakeholder legitimacy. *Business Ethics Quarterly*, *13*(1), 25–41. https://doi.org/10.5840/beq20031312

Pincus, F. (1996). Discrimination comes in many forms: Individual, instrumental, and structural. *American Behavioral Scientist,* 40(2), 186-194.

Pipa, A. F., Bouchet, M., & Rasmussen, K. (2020, November 12). *American leadership in advancing the SDGs to achieve equity and sustainability.* https://www.brookings.edu/blog/up-front/2020/11/12/american-leadership-in-advancing-the-sdgs-to-achieve-equity-and-sustainability/

Piper, K. (2019, July 10). The Giving Pledge, the campaign to change billionaire philanthropy, explained. *Vox.* https://www.vox.com/future-perfect/2019/7/10/18693578/gates-buffett-giving-pledge-billionaire-philanthropy

Plat Form C. (2019). *Home page.* https://platformc.org/

Ploum, L., Blok, V., Lans, T., & Omta, O. (2018). Toward a validated competence framework for sustainable entrepreneurship. *Organization & Environment*, *31*(2), 113–132. https://doi.org/10.1177/1086026617697039

Pohl, C., & Hirsch Hadorn, G. (2007). Systems, targets and transformation knowledge. In A. B. Zimmerman (Ed.), *Principles for designing transdisciplinafractals ry research*. Oekom Verlag.

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology, 52*(2). 126-136.

Porter, M., & Kramer, M. (2011). Creating shared value. *Harvard Business Review*, *89*(1–2), 62–77.

Postsecondary National Policy Institute. (2020). Women in Higher Education. https://pnpi.org/women-in-higher-education/

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creating unique value with customers. *Strategy & Leadership*, *32*(3), 4–9. https://doi.org/10.1108/10878570410699249

Prest, M., J. (2020, April 7). Foundations and Corporate Funds Announce a New Wave of COVID-19 Grants (Coronavirus Grants Roundup). *The Chronicle of Philanthropy*. https://www.philanthropy.com/article/foundations-and-corporate-funds-announce-new-wave-of-covid-19-grants-coronavirus-grants-roundup/

Price Waterhouse Cooper. (2020). *Technology for Societal Impact*. https://www.pwc.com/gx/en/services/sustainability/publications/accelerating-sustainable-development.html

Prigogine, I. (1997). *The end of certainty: Time, chaos and the new laws of nature*. The Free Press.

Prison Entrepreneurship Program. (2012). Home page. www.pep.org

Pruitt, B., Waddell, S., Kaeufer, K., & Parrot, K. (2005). *Dialogic approaches to global challenges: Moving from "dialogue fatigue" to dialogic change processes*. Generative Dialogue Project.

Puccio, G. J., Mance, M., Barbero Switalski, L., & Reali, P. D. (2012). Creativity rising. In *Creative Thinking and Problem Solving in the 21st Century*. ICSC Press.

QAA. (2018, January). *Enterprise and entrepreneurship education: guidance for UK higher education providers.* https://www.qaa.ac.uk/docs/qaas/enhancement-and-development/enterprise-and-entrpreneurship-education-2018.pdf?sfvrsn=15f1f981_8

RAIN Oregon. (2019). *Entrepreneurial ecosystem impact report*. https://www.oregonrain.org/wp-content/uploads/2020/07/RAIN-Impact-Report-Web-Single-Pages-1.pdf

Rasche, A. (2012). Global policies and local practice: Loose and tight couplings in multi-stakeholder initiatives. *Business Ethics Quarterly*, *22*(4), 679–708. https://doi.org/10.5840/beq201222444

Read, S., Sarasvathy, S., Dew, N., Wiltbank, R. & Ohlsson, A. (2011). Effectual entrepreneurship. Abingdon, UK: Routledge. https://doi.org/10.4324/9780203836903

Reay, T., Jaskiewicz, P., & Hinings, C. (2015). How family, business, and community logics shape family firm behavior and Brules of the game^ in an organizational field. *Family Business Review, 28*, 292–311.

Reeves, R. V. & Sawhill, I. V. (2021). Future of the Middle Class. Brookings Institute. P. 15 https://www.brookings.edu/essay/a-new-contract-with-the-middle-class-money/

Rhodes, R. A. W. (2000). Governance and Public Administration. In J. Pierre (Ed.), *Debating governance. Authority, steering, and democracy* (pp. 55–90). Oxford University Press.

Ries, E. (2010). Lean startup. New York: Random House Digital.

Right to Start. (2020). *Field guide for policymakers*. https://www.righttostart.org/field-guide-for-policymakers

Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, *4*(2), 155–169. https://doi.org/10.1007/BF01405730

Rivera-Santos, M., & Rufin, C. R. (2011). Odd couples: Understanding the governance of firm-NGO alliances. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1885393

Roberts, D., & Woods, C. (2005). Changing the world on a shoestring: The concept of social entrepreneurship. *University of Auckland Business Review, 19*(1), 45-51.

Roberts, L. W., Battaglia, J., & Epstein, R. S. (1999). Frontier ethics: Mental health care needs and ethical dilemmas in rural communities. *Psychiatric Services*, *50*, 497-503. https://doi.org/ 10.1176/ps.50.4.497.

Roberts, N. C. (2000). Wicked problems and network approaches to resolution. *International Public Management Review*, *1*(1), 1–19. http://hdl.handle.net/10945/55330

Robinson, L. W., & Berkes, F. (2011). Multi-level participation for building adaptive capacity: Formal agency-community interactions in northern Kenya. *Global Environmental Change*, *21*(4), 1185–1194. https://doi.org/10.1016/j.gloenvcha.2011.07.012

Roloff, J. (2008). Learning from multi-stakeholder networks: Issue-focused stakeholder management. *Journal of Business Ethics*, *82*(1), 233–250. https://doi.org/10.1007/s10551-007-9573-3

Rondinelli, D. A., & London, T. (2003). How corporations and environmental groups cooperate: Assessing cross-sector alliances and collaborations. *Academy of Management Perspectives*, *17*(1), 61–76. https://doi.org/10.5465/ame.2003.9474812

Roundy, P. (2017). Hybrid organizations and the logics of entrepreneurial ecosystems. *International Entrepreneurship and Management Journal, 13*(4), 1221-1237.

Rural Rise. (2021). *Home page.* www.ruralrise.org

Rural Rise. (2018). *The rise of rural entrepreneurship.* https://costarters.co/wp-content/uploads/2018/07/RuralRISE-Insights-Report-2018.pdf

Rush-Marlow, R. (2021). Strengthening rural community colleges: Innovations and

opportunity. Washington, D.C. Association of Community College Trustees.

Ruskovaara, E., Holmgren, C., Nehez, J. and Randma, T. (2012). Lost in translation:

Entrepreneurship education from policy into practice. Paper presented at the 35th ISBE

Conference, Dublin, November.

Ryan, M., Gambrell, D., & Noveck, B. S. (2020, October 20). Using collective intelligence to

solve public problems. *Nesta.* https://www.nesta.org.uk/report/using-collective-

intelligence-solve-public-problems/

SBA Office of Advocacy. (2016). FAQs. https://www.sba.gov/sites/default/files/advocacy/SB-

FAQ-2016_WEB.pdf

Saldaňa, J. (2012). The coding manual for qualitative researchers (2nd ed.). Thousand Oaks, CA:

Sage.

Salomon-Fernández, Y. (2019). Evolving Rural Community Colleges With Innovation and

Agility. *New Directions for Community Colleges, 2019*(187), 95-106

Sandler, R. (2021, January 27). Bill Gates: Future pandemics must be taken as seriously as 'The

Threat of War'. *Forbes*. https://www.forbes.com/sites/rachelsandler/2021/01/27/bill-

gates-future-pandemics-must-be-taken-as-seriously-as-the-threat-of-

war/?sh=252602073871

Sarango-Lalangui, P., Santos, J., & Hormiga, E. (2018). The development of sustainable

entrepreneurship research field. *Sustainability*, *10*(6), 2005.

https://doi.org/10.3390/su10062005

Sarasvathy, S., D. (2001). Causation and effectuation: Toward a theoretical shift from economic

inevitability to entrepreneurial contingency. *Academy of Management Review*, *26*, 243-263. https://doi.org/10.2307/259121

Sardeshmukh, S. R., & Smith-Nelson, R. M. (2011). Educating for an entrepreneurial career: Developing opportunity-recognition ability. *Australian Journal of Career Development*, *20*(3), 47–55. https://doi.org/10.1177/103841621102000308

Sawhill, J., & Williamson, D. (2001). Mission Impossible? Measuring Success in Nonprofit Organizations. *Nonprofit Management and Leadership, 11*(3), 371-386.

SBA Office of Advocacy. (2016). *FAQs.* https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf

Scheiber, N., Schwartz, N., & Hsu, T. (2020, March 30). White-collar quarantine. Over virus spotlights class divide. *The New York Times*, March, 30.

Scherer, A. G., & Palazzo, G. (2011). The new political role of business in a globalized world: A review of a new perspective on CSR and its implications for the firm, governance, and democracy. *Journal of management studies*, *48*(4), 899–931.

Scherer, A. G., Palazzo, G., & Seidl, D. (2013). Managing legitimacy in complex and heterogeneous environments: Sustainable development in a globalized world. *Journal of Management Studies*, *50*(2), 259–284. https://doi.org/10.1111/joms.12014

Schiavone, J., & Lynch, J. (2017, April 12). Less than half of non-retired Americans confident they'll reach financial goals by retirement: AICPA survey. *AICPA*. https://www.aicpa.org/press/pressreleases/2017/less-than-half-of-non-retired-americans-confident-I-reach-financial-goals-by-retirement-aicpa-survey.html

Schiller, C., Winters, M., Hanson, H. M., & Ashe, M. C. (2013). A framework for stakeholder identification in concept mapping and health research: A novel process and its application to older adult mobility and the built environment. BMC Public Health, 13(1), 428.

Shilts, R. (1987). *And the band played on: Politics, people, and the AIDS epidemic.* St. Martin's Press. http://doi.org/ 10.1002/cc.20188

Schnell, K., & Held, T. (2005). *Wissensmanagement regionalentwicklung schweiz. Machbarkeitsstudie.* Insitut für öffentliche Dienstleistungen und Tourismus der Universität St. Gallen, St. Gallen.

Schouten, G., & Glasbergen, P. (2011). Creating legitimacy in global private governance: The case of the Roundtable on sustainable palm oil. *Ecological Economics*, *70*(11), 1891–1899. https://doi.org/10.1016/j.ecolecon.2011.03.012

Schön, D. (1983). *The reflective practitioner how professionals think in action*. Basic Books.

Schuppisser, S. W. (2002). *Stakeholder Management. Beziehungen zwischen Unternehmungen und nicht-marktlichen Stakeholder-Organisationen – Entwicklung und Einflussfaktoren*. Haupt.

Schusler, T. M., Decker, D. J., & Pfeffer, M. J. (2003). Social learning for collaborative natural resource management. *Society & Natural Resources*, *16*(4), 309–326. https://doi.org/10.1080/08941920390178874

SDGFunders. Who's Funding the SDGs. https://sdgfunders.org/sdgs/

Seawright, J., & Gerring, J. (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political Research Quarterly*, *61*(2), 294–308.

Sedmak, T. (2020, December 10). High School Class of 2020 College Enrollments Decline 22% Compared to 2019 Class. National Student Clearing House.

https://www.studentclearinghouse.org/blog/high-school-class-of-2020-college-enrollments-decline-22-compared-to-2019-class/

Seemiller, C., & Grace, M. (2018). *Generation Z: A Century in the Making* (1st ed.). Milton: Routledge.

Selsky, J. W., & Parker, B. (2005). Cross-sector partnerships to address social issues: Challenges to theory and practice. *Journal of Management*, *31*(6), 849–873. https://doi.org/10.1177/0149206305279601

Senge, P. (2006). *The fifth discipline. The art and practice of the learning organization*. Currency Doubleday.

Shapiro, H. T. (2005). *A larger sense of purpose: Higher education and society*. Princeton University Press.

Shepherd, D. A., & Patzelt, H. (2011). The new field of sustainable entrepreneurship: Studying entrepreneurial action linking "what is to be sustained" with "what is to be developed". *Entrepreneurship Theory and Practice*, *35*(1), 137–163. https://doi.org/10.1111/j.1540-6520.2010.00426.x

Shrivastava, P. (1983). A typology of organizational learning systems. *Journal of Management Studies*, *20*(1), 7-28. https://doi.org/10.1111/j.1467-6486.1983.tb00195.x

Schwab Foundation for Social Entrepreneurship. (2020) Two Decades of Impact: 2020 Impact Report. (2020). http://www3.weforum.org/docs/WEF_Schwab_Foundation_2020_Impact_Report.pdf

Sjoberg, G., & Nett, R. (1968). *A methodology for social research*. Harper and Row.

Smith, M. R., & Forster, N. (2020, June 2). Protests in top 25 virus hot sp. *AP News*. https://apnews.com/article/e85ddae4d8d97a644be6ca71b5070bd5

Smith, W. K., Gonin, M., & Besharov, M. L. (2013). Managing social-business tensions: A review and research agenda for social enterprise. *Business Ethics Quarterly, 23*, 407–442.

Snipp, C. (1986). The changing political and economic status of the American Indians. American Journal of Economics and Sociology, 45(2), 145-158. https://doi.org/10.1111/j.1536-7150.1986.tb01915.x

Solow, Robert M. (1988). Growth Theory and After. *The American Economic Review, 78*(3), 307-317.

Somers, M. (2018, July 21). *Intrapreneurship, explained*. MIT Management Sloan School. https://mitsloan.mit.edu/ideas-made-to-matter/intrapreneurship-explained?utm_source=mitsloanlinkedin&utm_medium=social&utm_campaign=intrapreneurship

Spigel, B. (2016). Developing and governing entrepreneurial ecosystems: The structure of entrepreneurial support programs in Edinburgh, Scotland. *International Journal of Innovation and Regional Development, 7*, 141–160.

SSIR Editors. (2020, December 3). SSIR guide to design thinking, 10 years later. *Stanford Social Innovation Review.* https://ssir.org/articles/entry/ssir_guide_to_design_thinking_10_years_later

Stake, R. E. (1995). *The art of case study research*. Sage.

Stamm, B., Metrick, S., Kenkel, M., Davenport, J., & Hudnall, A. (2003). Rural behavioral health care an interdisciplinary guide (1st ed). Washington, DC: American Psychological Association. https://doi.org/10.1037/10489-000

Stanford Graduate School of Business, & Latino Business Action Network. (2019). *State of Latino entrepreneurship.* https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/report-slei-state-latino-entrepreneurship-2019.pdf

Stanford Graduate School of Business, & Latino Business Action Network. (2020). *The impact of covid-19 on Latino-owned businesses.* https://www.gsb.stanford.edu/sites/gsb/files/2020_slei_first_covid_survey_results.pdf

Startup Champions. (2020). *Vision*. http://www.startupchampions.co/#vision

Start Us Up. (2020). *Rebuilding better activating the start us up coalition in response to COVID-19.* https://www.startusupnow.org/wp-content/uploads/sites/12/2020/04/Americas-New-Business-Plan-Rebuilding-Better.pdf

Start Us Up. (2019). *America's new business plan*. https://www.startusupnow.org/wp-content/uploads/sites/12/2019/10/Kauffman_AmericasNewBusinessPlanWhitepaper_October2019.pdf

Steinke, P. & Fitch, P. (2007). Assessing service-learning. *Research & Practice in Assessment, 1*, 1-8.

Stephens, J., Hernandez, M., Román, M., Graham, A., & Scholz, R. (2008). Higher education as a change agent for sustainability in different cultures and contexts. *International Journal of Sustainability in Higher Education, 9*(3), 317–338.

Stern, A., Kingston, D., & Ke, A. (2015). *More than the sum of its parts: Making multi-stakeholder initiatives work.* Global Development Indicator.

Sternberg, R. J. (2010). Teaching for creativity. In R. A. Beghetto & J. C. Kaufman (Eds.), *Nurturing creativity in the classroom* (pp. 394–414). Cambridge University Press. https://doi.org/10.1017/CBO9780511781629.020.

Sternberg, R. J., & Lubart, T. I. (1991). An investment theory of creativity and its development. *Human Development*, *34*(1), 1–31. https://doi.org/10.1159/000277029

Sternberg, R. J., & Lubart, T. I. (1992). Buy low and sell high: An investment approach to creativity. *Current Directions in Psychological Science*, *1*(1), 1–5.

Steurer, R. (2006). Mapping stakeholder theory anew: From the 'stakeholder theory of the firm' to three perspectives on business-society relations. *Business Strategy and the Environment*, *15*(1), 55–69. https://doi.org/10.1002/bse.467

Stewart, I. (1989). *Does god play dice? The new mathematics of chaos*. Blackwell.

Stibbe, D., Reid, S., & Gilbert, J. (2019). *Maximising the impact of partnerships for the SDGs; the partnering initiative and UN DESA*. Sustainable Development. https://sustainabledevelopment.un.org/content/documents/2564Partnerships_for_the_SDGs_Maximising_Value_Guidebook_Final.pdf

Stoeglehner, G., Brown, A. L., & Kørnøv, L. B. (2009). SEA and planning: 'ownership' of strategic environmental assessment by the planners is the key to its effectiveness. *Impact Assessment and Project Appraisal*, *27*(2), 111–120. https://doi.org/10.3152/146155109X438742

Stokols, D., Hall, K. L., Taylor, B. K., & Moser, R. P. (2008). The science of team science: Overview of the field and introduction to the supplement. *American Journal of Preventive Medicine*, *35*(2 Suppl), S77-89. https://doi.org/10.1016/j.amepre.2008.05.002

Streich, B. (2005). *Stadtplanung in der Wissensgesellschaft. Ein Handbuch*. Verlag für Sozialwissenschaften.

Stroh, D. P. (2015). *Systems thinking for social change: A practical guide to solving complex problems, avoiding unintended consequences and achieving lasting results*. White River Junction, VT: Chelsea Green.

Sturmberg, J. P., Martin, C. M., & Katerndahl, D. A. (2014). Systems and complexity thinking in the general practice literature: An integrative, historical narrative review. *Annals of Family Medicine*, *12*(1), 66–74. https://doi.org/10.1370/afm.1593

Surie, G., & Hazy, J.K. (2006), "Generative leadership: nurturing innovation in complex systems", Emergence: Complexity and Organization, Vol. 8 No. 4, pp. 13-26.

Sustainable Development Goals. (2020). *American College & University Presidents' Climate Commitment*. https://sustainabledevelopment.un.org/partnership/?p=2375

Sustainable Brands. (2018). *NGOs Leading the Way on Sustainable Development Goals*. https://www.sustainablesids.org/wp-content/uploads/2018/08/NGOs-leading-SDGs-Sustainable-Brands.pdf

Svyantek, D. J., & Brown, L. L. (2000). A complex-systems approach to organizations. *Current Directions in Psychological Science*, *9*(2), 69–74. https://doi.org/10.1111/1467-8721.00063

Taeuscher, K., & Abdelkafi, N. (2017). Visual tools for business model innovation: Recommendations from a cognitive perspective. *Creativity and Innovation Management*, *26*(2), 160-174. https://doi.org/10.1111/caim.12208

Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research*, *1*(1), 77–100.

Teegen, H., Doh, J. P., & Vachani, S. (2004). The importance of nongovernmental organizations (NGOs) in global governance and value creation: An international business research

agenda. *Journal of International Business Studies*, *35*(6), 463–483.

https://doi.org/10.1057/palgrave.jibs.8400112

The Civic Learning and Democratic Engagement National Task Force. (2012). *A Crucible*

Moment: College Learning and Democracy's Future, a Report to the Nation.

https://www.aacu.org/sites/default/files/files/crucible/Crucible_508F.pdf

The 17 Rooms Secretariat. (2020). *Great transitions: Doubling down on the sustainable*

development goals. https://www.brookings.edu/research/great-transitions-doubling-

down-on-the-sustainable-development-goals/

The Hope Center. (2020a). *#RealCollege during the pandemic.*

https://hope4college.com/realcollege-during-the-pandemic/

The Hope Center. (2020b). *#RealCollege during the pandemic Institutional responses.*

https://hope4college.com/realcollege-during-the-pandemic-institutional-responses/

The Office of Policy Analysis at Arrowhead Center, & New Mexico State University. (2016).

The economic base of the state of New Mexico. https://arrowheadcenter.nmsu.edu/wp-

content/uploads/sites/19/2016/08/New-Mexico-State-Economic-Base-Study-2016.pdf

The Next Generation Entrepreneurship Corps Act 2021.

https://www.coons.senate.gov/imo/media/doc/2.23.21%20-

%20Next%20Generation%20Entrepreneur%20Corps%20PILOT%20One%20Pager%20a

nd%20QA%20117%5B2%5D.pdf

Theis, J. J. (2016). Political science, civic engagement, and the wicked problems of

democracy. *New Directions for Community Colleges, 2016*(173), 41–49,

https://doi.org/10.1002/cc.20188

Theis, J. J., & Forhan, F. (2017). *Addressing wicked problems through deliberative dialogue. Diversity & Democracy.* Association of American Colleges & Universities. https://www.aacu.org/diversitydemocracy/2017/winter/theis

Theis, M. (2021). 'Hate Groups' Received Millions From 351 Charities and Foundations, Chronicle Review Finds. *The Chronicle of Philanthropy*. https://www.philanthropy.com/article/351-charities-and-foundations-directed-millions-to-hate-groups-chronicle-review-finds

Thorbecke, C. (2020, June 4). 1.9 million more Americans filed for unemployment, bringing pandemic total to over 42 million. *ABC News*. https://abcnews.go.com/Business/19-million-americans-filed-unemployment-bringing-pandemic-total/story?id=71063691

Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure and process*. OUP Oxford.

Torrance, E. P. (1972). Can we teach children to think creatively? *The Journal of Creative Behavior*, *6*(2), 114–143. https://doi.org/10.1002/j.2162-6057.1972.tb00923.x

Torrance, E. P. (1978). Developing creativity instructional material according to the Osborn-Parnes creative problem-solving model. *Creative Child and Adult Quarterly*, *3*(2), 80–91.

Torrance, E. P. (1988). The nature of creativity as manifest in its testing. In R. J. Sternberg (Ed.), *The nature of creativity* (pp. 43–75). Cambridge University Press.

Traver, A., & Katz, Z. (2014). *Service-learning at the American community college theoretical and empirical* perspectives. Palgrave Macmillan.

Treffinger, D. J., & Isaksen, S. G. (2005). Creative problem solving: The history, development, and implications for gifted education and talent development. *Gifted Child Quarterly*, *49*(4), 342–353. https://doi.org/10.1177/001698620504900407

Trencher, G., Yarime, M., McCormick, K. B., Doll, C. N. H., & Kraines, S. B. (2014). Beyond the third mission: Exploring the emerging university function of co-creation for sustainability. *Science and Public Policy*, *41*(2), 151–179. https://doi.org/10.1093/scipol/sct044

Trist, E. (1983). Referent organizations and the development of inter-organizational domains. *Human Relations*, *36*(3), 269–284. https://doi.org/10.1177/001872678303600304

Trujillo, D. (2018). Multiparty alliances and systemic change: The role of beneficiaries and their capacity for collective action. *Journal of Business Ethics*, *150*(2), 425–449. https://doi.org/10.1007/s10551-018-3855-9

Turner, A. (2018). *The business case for racial equity.* http://www.nationalcivicleague.org/wp-content/uploads/2018/04/RacialEquityNationalReport-kellogg.pdf

Turner, S., Merchant, K., Kania, J., & Martin, E. (2012). *Understanding the value of backbone organizations in collective impact*. Foundation Strategy Group.

Turton, N. (2021, February 9). Stop AAPI hate: New data on anti-Asian hate incidents against elderly and total national incidents in 2020. *Secure Server CDN.* https://bit.ly/2RJV7zM

UN Association. (2019). *Advancing the sustainable development goals.* https://unausa.org/global-goals/

UNCTAD. (2017). *Promoting entrepreneurship for sustainable development: A selection of business cases from the Empretec Network.* https://unctad.org/en/PublicationsLibrary/diaeed2017d6_en.pdf

UN Department of Economic and Social Affairs. (2020). *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.* https://sdgs.un.org/goals/goal4

UNDESA. (2020). *Maximizing the impact of partnerships for the SDGs.*

https://sustainabledevelopment.un.org/partnerships/guidebook

UNESCO. (2019). *Sustainable development goals – resources for educators.*

https://en.unesco.org/themes/education/sdgs/material

UNESCO. (2020). *Education for sustainable development: a roadmap*. UNESCO.

UNESCO Bangkok. (2017). *Education for sustainable development goals – learning objectives.*

https://bit.ly/3swG0q1

UNESCO, UNESCO Institute for Statistics, Technical Cooperation Group, & Sustainable

Development Goals. (2019). *SDG indicator 4.7.1: Proposal for a measurement strategy.*

Uhl-Bien, M., Marion, R., & McKelvey, B. (2008). Complexity leadership theory: Shifting

leadership from the industrial age to the knowledge era. In M.

Uhl-Bien & R. Marion (Eds.), *Complexity leadership: Part 1: Conceptual foundations* (pp. 185–

224). Information Age Publishing.

United Nations. N.d. "About the Sustainable Development Goals".

https://www.un.org/sustainabledevelopment/sustainable-development-goals/.

United Nations Assembly. (2015). *Transforming our world: The 2030 agenda for sustainable*

development. A report of the secretary-general. United Nations.

http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

United Nations Association of the USA (2020). UN75: American Voices.

https://unausa.org/un75-report

United States Hispanic Chamber of Commerce [USHCC]. (2021). *About USHCC*.

https://ushcc.com/about/

United States Association for Small Business and Entrepreneurship [USASBE]. (2021). *Social Entrepreneurship SIG Resources.* https://bit.ly/3eeJmst

US C_TEC, & Amazon. (2019). *Unlocking the digital potential of rural America.* https://americaninnovators.com/wp-content/uploads/2019/03/Unlocking-the-Digital-Potential-of-Rural-America.pdf

Unruh, G. C. (2000). Understanding carbon lock-in. *Energy Policy*, *28*(12), 817–830. https://doi.org/10.1016/S0301-4215(00)00070-7

van Bueren, E. M. (2003). Dealing with wicked problems in networks: Analyzing an environmental debate from a network perspective. *Journal of Public Administration Research and Theory*, *13*(2), 193–212. https://doi.org/10.1093/jopart/mug017

Van Wezemael, J. E. (2012). Transformative practice as an exploration of possibility spaces. In G. De Roo, J. Hillier, & J. Van Wezemael (Eds.), *Complexity & planning: Systems, assemblages and simulations* (pp. 93–113). Ashgate.

Vasseur, L., Horning, D., Thornbush, M., Cohen-Shacham, E., Andrade, A., Barrow, E., Edwards, S. R., Wit, P., & Jones, M. (2017). Complex problems and unchallenged solutions: Bringing ecosystem governance to the forefront of the UN sustainable development goals. *Ambio*, *46*(7), 731–742. https://doi.org/10.1007/s13280-017-0918-6

Vaughan, G. B. (1997). The community college's mission and milieu: Institutionalizing community-based programming. In E. J. Boone (Ed.), *Community leadership through community-based programming: The role of the community college* (pp. 21–58). Community College Press.

Venture Well. (2021). *I-corps™.* https://venturewell.org/i-corps/ http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2019/08/TCG6-REF-4-4.7.1-Proposal-for-measurement-strategy.pdf

Vergés, A. (2010). Integrating contextual issues in ethical decision-making. *Ethics & Behavior*, 20, 497-507. https://doi.org/10.1080/10508422.2010.521451

Volkmann, C., Fichter, K., Klofsten, M., & Audretsch, D. (2019). Sustainable entrepreneurial ecosystems: An emerging field of research. *Small Business Economics,* 1-9.

Von Geibler, J. (2013). Market-based governance for sustainability in value chains: Conditions for successful standard setting in the palm oil sector. *Journal of Cleaner Production*, *56*, 39–53. https://doi.org/10.1016/j.jclepro.2012.08.027

Waddell, S. (2000). Complementary resources: The win-win rationale for partnerships with NGOs. In J. Bendell (Ed.), *Terms for endearment: Business, NGOs and sustainable development* (pp. 193–206). Greenleaf Publishing.

Waddell, S. (2002). Core competences. *Journal of Corporate Citizenship*, *2002*(7), 43–56. https://doi.org/10.9774/GLEAF.4700.2002.au.00006

Waddock, S. (2013). The wicked problems of global sustainability need wicked (good) leaders and wicked (good) collaborative solutions. *Journal of Management for Global Sustainability*, *1*(1), 91–111. https://doi.org/10.13185/JM2013.01106

Wagenfield, M. (2003). A snapshot of rural and frontier America. In B.H. Stamm (Ed), *Rural behavioral health care: An interdisciplinary guide* (pp. 33-40). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/10489-002

Waldrop, M. M. (1992). *Complexity: The emerging science at the edge of order and chaos.* Simon and Schuster.

Warner, M., & Sullivan, R. (2004). *Putting partnerships to work: Strategic alliances for development between government, the private sector and civil society*. Greenleaf Publishing.

Waters-Bailey, Stacy, McGraw, Matthew S, & Barr, J. (2019). Serving the Whole Student: Addressing Nonacademic Barriers Facing Rural Community College Students. *New Directions for Community Colleges, 2019*(187), 83-93.

We Forum. (2021). *Up Link*. https://www.weforum.org/uplink

Waxenberger, B., & Spence, L. J. (2003). Reinterpretation of a metaphor: From stakes to claims. *Strategic Change*, *12*(5), 239–249. https://doi.org/10.1002/jsc.638

Weber, E. P., & Khademian, A. M. (2008). Wicked problems, knowledge challenges, and collaborative capacity builders in network settings. *Public Administration Review*, *68*(2), 334–349. https://doi.org/10.1111/j.1540-6210.2007.00866.x

Weinberger, C. J. (2014). The increasing complementarity between cognitive and social skills. *Review of Economics and Statistics*, *96*(5), 849–861. https://doi.org/10.1162/REST_a_00449

Weidinger, C. (2014). Business success through sustainability. In C. Weidinger, F. Fischler, & R. Schmidpeter (Eds.), *Sustainable entrepreneurship* (pp. 287–301). Springer Berlin Heidelberg.

Weinberg, A. (2020). We need a new framework to solve wicked problems in the wake of COVID-19. *The Hill*. https://doi.org/https://thehill.com/opinion/healthcare/500679-we-need-a-new-framework-to-solve-problems-in-the-wake-of-covid-19

Weisbord, M. (1992). *Discovering common ground: How future search conferences bring people*

together to achieve breakthrough innovation, empowerment, shared vision, and collaborative action. Berrett-Koehler Publishers.

Weiss, J. W. (1994). *Business Ethics. A Managerial, Stakeholder Approach*. Wadsworth Publishing Company.

Welter, F., Baker, T., & Wirsching, K. (2019). Three waves and counting: The rising tide of contextualization in entrepreneurship research. *Small Business Economics, 52*(2), 319–330. https://doi.org/10.1007/s11187-018-0094-5.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. https://doi.org/10.1002/smj.4250050207

Wersun, A., Klatt, J., Azmat, F., Suri, H., Hauser, C., Bogie, J., Meaney, M., & Ivanov, N. (2020). *Blueprint for SDG integration into curriculum, research and partnerships.* https://d30mzt1bxg5llt.cloudfront.net/public/uploads/PDFs/BlueprintForSDGIntegration. pdf

White House Briefing. (2021, January 22). *Fact sheet: President Biden's new executive actions deliver economic relief for American families and businesses amid the covid-19 crises.* https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/22/fact-sheet-president-bidens-new-executive-actions-deliver-economic-relief-for-american-families-and-businesses-amid-the-covid-19-crises/

White, S., & Cohen, T. (2014). *Preparing students: A guide to climate resiliency & the community college*. Center for Sustainability Education and Economic Development. https://theseedcenter.org/wp-content/uploads/2018/01/COWSSEED_ResiliencyReport_1014_web.pdf

Wicked Lab. (2021). *It's a wicked world; Let's change it.* https://www.wickedlab.com.au/

Williams, M. R., & Nourie-Manuele, M. (2018). The role of the community college in

    addressing poverty. *New Directions for Community Colleges*, *2018*(184), 17–26.

    https://doi.org/10.1002/cc.20324

Women in Workplace. (2020). *Women in the workplace study*. https://wiw-

    report.s3.amazonaws.com/Women_in_the_Workplace_2020.pdf

Wong, K. (2020, December 17). The Biden presidency and a new direction in

    education policy. Brookings Institute. https://www.brookings.edu/blog/brown-center-

    chalkboard/2020/12/17/the-biden-presidency-and-a-new-direction-in-education-policy/

World Economic Forum. (2021a). *COVID response alliance for social entrepreneurs.*

    https://www.weforum.org/covid-alliance-for-social-entrepreneurs

World Economic Forum. (2021b). *The global risks report 2021* (Insight Report). World

    Economic Forum. https://www.weforum.org/reports/the-global-risks-report-2021

World Economic Forum. (2020a). *The global risks report 2020* (Insight Report). World

    Economic Forum. http://www3.weforum.org/docs/WEF_Global_Risk_Report_2020.pdf

World Economic Forum. (2020b). *Unlocking technology for the global goals.*

    http://www3.weforum.org/docs/Unlocking_Technology_for_the_Global_Goals.pdf

World Economic Forum Reports. (2020c). *COVID-19 action agenda leaders on the front line:*

    why social entrepreneurs are needed now more than ever.

    https://www.weforum.org/reports/covid-social-entrepreneurs-alliance

World Economic Forum Reports. (2020d). *Measuring stakeholder capitalism: Towards common*

    metrics and consistent reporting of sustainable value creation.

    https://www.weforum.org/reports/measuring-stakeholder-capitalism-towards-common-

    metrics-and-consistent-reporting-of-sustainable-value-creation

World Economic Forum. (2019). *What the Fifth Industrial Revolution is and why it matters.* https://europeansting.com/2019/05/16/what-the-fifth-industrial-revolution-is-and-why-it-matters/

World Economic Forum (2016). *The Future of Work Report.* http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf

Wrigley, C., Mosely, G., & Tomitsch, M. (2018). Design thinking education: a comparison of massive open online courses. *She Ji: The Journal of Design, Economics, and Innovation, 4*(3), 275-292. https://doi.org/10.1016/j.sheji.2018.06.002

Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology & Health*, *15*(2), 215–228. https://doi.org/10.1080/08870440008400302

Yawson, R. (2013). The "wicked problem construct" as a framework for organizational development and change. *Celebrating 20 Years of Leading HRD through Research. Proceedings of the 20th Annual AHRD International Research Conference in the Americas.* https://doi.org/10.13140/2.1.2874.6569

Yin, R. K. (2003). *Application of case study research* (2nd ed.). Sage.

Yin, R. K. (2006). Case study design. In *Research design: Vol. IV*. Sage.

Yin, R. K. (2009). *Case Study Research: Design and methods* (4th ed.). Sage.

Yin, R. K. (2011). *Qualitative research from start to finish.* The Guilford Press.

Yin, R. K. (2014). *Case study research: Design & methods* (5th ed.). Sage.

York, J. G., & Venkataraman, S. (2010). The entrepreneur–environment nexus: Uncertainty, innovation, and allocation. *Journal of Business Venturing*, *25*(5), 449–463. https://doi.org/10.1016/j.jbusvent.2009.07.007

Yunus, M. (1999). *Banker to the poor: Micro-lending and the battle against world poverty.* Public Affairs.

Zahra, S. A., Gedajlovic, E., Neubaum, D. O., & Shulman, J. M. (2009). A typology of social entrepreneurs: Motives, search processes and ethical challenges. *Journal of Business Venturing, 24*(5), 519–532. https://doi.org/10.1016/j.jbusvent.2008.04.007

Zeballos-Roig. (2020). *12 charts that show how Black Americans face alarming economic inequality- and suggest it could worsen due to coronavirus pandemic*. Business Insider; Business Insider. https://www.businessinsider.com/charts-black-americans-gaping-economic-inequality-white-unemployment-earnings-financial-2020-6

Zilahy, G., & Huisingh, D. (2009). The roles of academia in Regional sustainability initiatives. *Journal of Cleaner Production*, *17*(12), 1057–1066. https://doi.org/10.1016/j.jclepro.2009.03.018

Zimmerman, B., Lindenberg, C., & Plsek, P. (1998). A Complexity Science Primer: What is Complexity Science and WHY SHOULD I LEARN ABOUT IT, Edgeware: Lessons From Complexity Science for Health Care Leaders, VHA, Dallas, TX.

Zivkovic, S. (2017). Addressing food insecurity: A systemic innovation approach. Social Enterprise Journal, 13(3), 234–250. https://doi.org/10.1108/SEJ-11-2016-0054

Zivkovic, S. (2018). Systemic innovation labs: A lab for wicked problems. *Social Enterprise Journal, 14*(3), 348-366. https://doi.org/10.1108/SEJ-04-2018-0036

Appendices

APPENDIX A: UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

Figure 1

United Nations 2030 Sustainable Development Goals & 5Ps of Sustainability

APPENDIX B: STRATEGIC DOING –PROGRAM OUTCOMES

Community Colleges in North Central Indiana

Entrepreneurship Strategy Outcomes. The outcomes for the entrepreneurial strategy goal were:
- 1,537 existing and emerging entrepreneurs trained
- 708 new business/growth ideas developed
- 145 individuals in 11 companies using entrepreneurship to increase top-line growth
- 18 new business plans created
- 17 new products or services developed
- 1.2 million in sales growth
- 12 new startup companies
- $1.2 million in sales growth
- 45 new jobs created
- 52 new jobs retained, $510,000 in cost savings
- 47 school corporations offering new entrepreneurship programs
- 166 teachers trained to teach entrepreneurship
- 4,918 school-aged students trained in entrepreneurship
- 22 entrepreneurship curriculum programs developed
- 10 angel investors engaged (Hutcheson & Morrison, 2012, p. 2-4)

21st Century Skill Outcomes. The outcomes associated with the 21st-century skills goal were:
- 15,042 workers trained
- 1,262 degrees or certificates awarded
- 1,634 individuals trained in global commerce
- 9,534 individuals assessed for careers in advanced manufacturing
- 3,165 individuals placed in employment
- 7,593 high-school students in new STEM education programs
- 126 scholarships awarded
- 33 "stop outs" back in college
- 130 new college internships developed (Hutcheson & Morrison, 2012, p. 2-4)

Innovation Outcomes. The outcomes associated with the innovation strategy goal were:
- 500 companies engaged in supply chain training
- 23 university faculty newly engaged with industry
- 150 individuals with Nanostructured Coatings Technology certificates
- 67 individuals with Energy Efficiency certificates
- $1.4 million in energy cost savings identified as a result of the training program
- 5 new training/certificate programs developed- nanotechnology, energy efficiency, health care cost control, supply chain management, and green manufacturing (Hutcheson & Morrison, 2012, p. 2-4)

Regional Civic Leadership Outcomes. The outcomes associated with the regional civic were
- 1,304 civic leaders engaged in regional collaborations and actively engaged

- Launched a new regional leadership initiative
- created regional communication tools- newsletters, blogs, and collaborative workspaces
- 3 new ongoing regional initiative spin-offs – Clean Energy Forum, the Indiana Energy Systems Network, and the North Central Indiana IHIP Asset-Inventory Group (Hutcheson & Morrison, 2012, p. 2-4)

APPENDIX C: RESEARCH SUPPORT REQUEST CORRESPONDENCE

October 1, 2020

Dear _____,

I am a doctoral candidate in the community college leadership program at Old Dominion University completing my dissertation under the supervision of Dr. Chris Glass. The qualitative case study is aims to explore (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

Research findings will lead to a deeper understanding of how community colleges can play a role in addressing wicked problems, such as homelessness, climate change and poverty. According to the literature, these global challenges are best addressed at a local level. With community colleges located 50 miles from any American city, these institutions are an ideal platform for systemic change. Often, the change occurs through multi-stakeholder initiatives, which lead to positive economic, environmental and societal impact. The time commitment for participation is as follows:

(a) a Zoom interview (45 minutes – 1 hour), and
(b) suggestions for online artifacts and future interviewees are also appreciated.

This research will serve to inform community college leaders and policymakers as to the contribution community colleges are capable of in building a more equitable Post-COVID society. I believe working toward this goal will seamlessly align with the mission of community colleges. In addition, the relationship between entrepreneurship, economic development and wicked problems of sustainability may uncover novel opportunities for community colleges to secure additional support for continuing this work.

Findings from this research will provide your program with insights for future collaborative opportunities nationwide. In addition, the study will aim to capture the impact and value created by your program, which can be leveraged for future promotion and research. Finally, combining the collaborative opportunities with potential impact may lead to corporate, government and philanthropic grant funding opportunities for all parties involved. It is the goal of this study to promote a win-win mindset for mutual benefit for all participants and corresponding organizations.

If you have questions about this study, feel free to contact me through email at sstei@odu.edu or text/call at 540-397-4372. In advance, thank you for your support of this study. I look forward to your response regarding this request.

Sincerely,
Samantha Steidle
Doctoral Candidate, Old Dominion University
College of Higher Education

Data Collection Research Timeline

August 15, 2020	Submit for IRB Approval
October 1, 2020	Defend proposal
October 15, 2020	Send introduction email to participants & follow-up (upon defense approval)
October 26, 2020	Secure informed consent & schedule meetings
October 20, 2020	Submit pre-interview program research
October 20, 2020	Semi-structured interviews- 1st phase
October 30, 2020	Send introduction email to 2nd participants & follow-up
November 1, 2020	Semi-structured interviews – 2nd phase
November 15, 2020	Researcher confirms accuracy of data with participants
November 30, 2020	Researcher analyzes and synthesizes data collection
December 1, 2020	Researcher writes up findings
January 10, 2020	Researcher submits report to committee
January 15, 2020	Defend dissertation

Reminder Email for Participate Recruitment

Dear _____,

I am writing to follow-up regarding an email sent earlier this week inviting you to participate in my dissertation research. The purpose of the research is to explore (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

I understand you are busy. If you are unable to participate but are willing to forward this request to someone else in your office, that would be greatly appreciated. I look forward to your response.

Sincerely,
Samantha Steidle

APPENDIX D: PRE-INTERVIEW RESEARCH

Interviewee
Organization
Program Name
Position
Length of Time
Interviewer Samantha Steidle, Doctoral Candidate at Old Dominion University
Date   TBD

1. Organization's Mission & Goals

2. Organization's Description

3. Program Process

4. Interviewee's Background

5. Interaction between Community Colleges and the Organization

6. Interaction between Wicked Problems of Sustainability and the Organization

7. Organization's Recent News/Coronavirus

APPENDIX E: INTERVIEW PROTOCOL

Interviewee:
Interviewer: Samantha Steidle, Doctoral Candidate
Date: June 20, 2020
Location: Zoom

Thank you for your willingness to participate in this study. The study aims to explore (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?

The study will involve:
(a) a Zoom interview (45 minutes – 1 hour), and
(b) suggestions for online artifacts and future interviewees are also appreciated.

Your feedback is important. In order to ensure accuracy, I plan to record the interview today. Do I have your consent to record the conversation? [PAUSE for response]. Thank you. I will ask for your consent one more time on the record when the recording starts. The recording will start now.

Responses will be confidential when quoting comments. The participant may request some comments be made "off the record" during the conversation. Upon this request, the researcher will pause the recording and only resume only once the interviewee agrees. For this study, (1) participation is voluntary, (2) responses are confidential, (3) there is no plan to cause harm, (4) you are free to skip any questions you would like. Do you have any questions about the study? PAUSE for response].

Upon agreement, would you mind signing the informed consent form I've provided to you. Again, I plan to record the interview today. Do I have your consent to record the conversation? [PAUSE for response]. Thank you.

I have scheduled 45 minutes – 1 hour for this interview. If we are running short on time, would you be okay if I interrupt you to move on to additional questions?

APPENDIX F: INFORMED CONSENT

Dear Participant,

Thank you for agreeing to participate in this research study for my dissertation. A summary of study details is attached for your review.

Thank you for your participation!

I voluntarily and with understanding consent to be interviewed by <u>Samantha Steidle</u> as a participant in her doctoral dissertation research. I understand that I am free to not answer any specific question(s), and may terminate the interview and/or withdraw from the research project at any time. I understand that the reporting of my participation in this study will be entirely anonymous and confidential.

_____ I consent to the tape recording of my interview

Please sign here _____ Date _____

APPENDIX G: DISSERTATION SUMMARY

**EXPLORING THE ROLE(S) OF COMMUNITY COLLEGES IN ADDRESSING
WICKED PROBLEMS THROUGH MULTI-STAKEHOLDER COLLABORATION:
AN ENTREPRENEURIAL APPROACH TO SUSTAINABILITY**

INTRODUCTION: For years, scientists, policymakers, business leaders, and entrepreneurs have warned of social, environmental, and economic risks throughout society. In fact, the World Economic Forum (WEF) has been sounding the alarm for years, warning of increased poverty, economic inequality, infectious disease, climate change, and many other wicked problems despite efforts to mitigate their effects. In recent years, experts in academia and throughout society have debated the role of academic institutions in addressing these wicked problems through multi-stakeholder initiatives for sustainability). For example, Dentoni and Bitzer (2015) sought to analyze the role that university academics play in dealing with global wicked problems. With over 1,200 community colleges across the country, these institutions are well-positioned to serve as incubators of innovation for complex social, economic, and environmental challenges. After all, student success often hinges on overcoming barriers associated with wicked problems, such as hunger, homelessness, and unemployment.

PURPOSE: The purpose of this qualitative interview-based case study is to explore:
  (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and
  (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability.

RESEARCH QUESTIONS: This study aims to explore the potential of community colleges in addressing wicked problems of sustainability, such as poverty, hunger, good health, quality education, gender equality, clean water, clean energy, economic growth, infrastructure, inequality, climate action, peace and infectious disease through an entrepreneurial lens.

  The primary research questions are:
  1. How do leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability?
  2. How do community college leaders in multi-stakeholder initiatives describe how the mission of community colleges aligned with addressing wicked problems of sustainability?
  The secondary questions will focus on the multi-stakeholder initiative's
  3. What were the multi-stakeholder's goals, processes, software, and value created for the students, organization and society?
  4. Who were the funders, recipients, and participating employees?

PROGRAM INCLUSION: MSIs selected to participate (a) have addressed wicked problems, (b) have included community colleges or trade schools as stakeholders during the program, (c) have yielded impressive measurable outcomes in a completed initiative that are documented, and (d) incorporate entrepreneurialism and/or entrepreneurial problem-solving.

APPENDIX H: KEY DEFINITIONS

*1. **Wicked Problems of Sustainability.*** Complex, unstructured, cross-cutting, and relentless problems involving the long-term viability of organizations, societies, or human civilization (Weber & Khademian, 2008; Batie, 2008). Examples of wicked problems of sustainability include poverty, hunger, good health, quality education, gender equality, clean water, clean energy, infrastructure, inequality, climate action, peace, and infectious disease.

2. ***Sustainable Development*** – Development that meets the needs of the present without compromising the ability of future generations to meet their own. This definition emphasizes social justice and human development for social and intergenerational equity, especially for equitable distribution of resources.

3. ***Multi-stakeholder Initiatives*** - Voluntary and self-regulated groups of stakeholders from a variety of sectors in society, including government, business, civil society, international organizations and academia to address common issues.

4. ***Entrepreneurship.*** The self-directed pursuit of opportunities to create value for others. By creating value for others, we empower ourselves (G. Schoeniger, personal communication, July 15, 2020).

5. ***Entrepreneurial.*** An individual or organization who makes a unique, innovative and creative contribution to the world through an opportunity identification and/or value-creation mindset, whether as an employee or entrepreneur, regardless of the financial resources available (Bridge, 2017; Fiet, 2002).

6. ***Entrepreneurship Education.*** Education designed to enable an individual to make a unique, innovative and creative contribution to the world through a value-creation mindset, whether as an employee or entrepreneur, regardless of the financial resources available (Bridge, 2017; Fiet, 2002).

7. ***Ecosystem Builders.*** Individuals who drive long-term and system-wide change by supporting innovation and entrepreneurship in their region or community through (a) leading recognized startup ecosystem building initiatives, (b) running entrepreneurial centers and coworking spaces, (3) managing accelerators, incubators or startup school programs, (4) serving in professional economic development or government roles, or (5) investors and serial entrepreneurs investing in building their local ecosystem" (Startup Champions, 2020).

APPENDIX I: INTERVIEW QUESTIONS

Theme 1: Role of Community Colleges in Addressing Wicked Problems of Sustainability

1. Which initiatives have you worked on that (a) have addressed <u>wicked problems of sustainability</u>, (b) involving community colleges or trade schools, (c) have yielded impressive measurable outcomes documented, <u>and</u> (d) incorporate entrepreneurialism and/or entrepreneurial problem-solving?

    a. **In relation to the initiatives identified above, what was the initial goal for the initiative** in terms of impact and/or value creation?

    b. **What role** did the community college play (for the students and the community)?

    c. **How is this initiative tied to entrepreneurship** and economic development?

    d. **What was the impact demonstrated or value created** for students, the academic institution and/or society?

    e. **What is the process** used for collaboration (with community partners)?

    f. **What were the technology platforms** used for collaboration?

    g. **Who were the initiative's funders, grant recipients and participating employees from the community college?**

Theme #2: Mission of Community Colleges Alignment with Wicked Problems

Your community college was identified as (a) having addressed <u>wicked problems of sustainability</u>, (b) involving community colleges or trade schools, (c) which yielded impressive measurable and documented outcomes documented, <u>and</u> (d) and incorporated entrepreneurialism and/or entrepreneurial problem-solving.

1. **In relation to the initiatives identified above, what was the initial goal for the initiative** in terms of impact and/or value creation?

2. **How is the mission of community colleges aligned with addressing wicked problems of sustainability?**

3. **Who from the college participated in the initiative- faculty, staff, leadership or students? What was the role of each participant?**

4. **How is this multi-stakeholder initiative tied to entrepreneurship** and economic development?

5. **Is there a link between addressing wicked problems of sustainability and institutional advancement?**

<u>**Key Definitions**</u>
Wicked Problems of Sustainability are defined as **c**omplex, unstructured, cross-cutting, and relentless problems involving the long-term viability of organizations, societies, or human civilization.). Examples include: poverty, homelessness, climate change, civic engagement, climate change, economic development, equality, clean water quality education, and hunger (SDGs).

Multi-stakeholder Initiatives (MSIs) are defined as voluntary and self-regulated groups of stakeholders from a variety of sectors in society, including government, business, civil society, international organizations and academia to address common issues. MSIs go by many different names, including cross-sector partnerships, multi-stakeholder collaboration, community collaborations, transdisciplinary collaborations, multi-stakeholder platforms, interorganizational collaboration, and collaborative planning.

APPENDIX J: FIELD NOTES

Researcher: Samantha Steidle
Date:
Time:
Location:
Type/Setting
Data Collection Experience:

Interpretations   Observations

General Notes

Interpretations   Observations

General Notes

APPENDIX K: OBSERVATIONAL PROTOCOL

Researcher: Samantha Steidle
Date:
Time:
Location:
Type/Setting
Data Collection Experience:

Descriptive Notes   Reflective Notes

APPENDIX L: ADDITIONAL EXPERT INTERVIEW OUTREACH

October 1, 2020

_____,

It was so nice speaking with you today. As mentioned, I'm seeking help in recruiting leaders of multi-stakeholder initiatives as participants for my dissertation research. Would you mind sharing this recruitment request with professionals in your network that may be a good fit to participate? I really appreciate your help!

Sincerely,
Sam Steidle

Dear Changemaker,

My name is Samantha Steidle and I'm a doctoral candidate in the community college leadership program at Old Dominion University completing my dissertation under the supervision of Dr. Chris Glass. **The purpose of the study is to explore (a) how leaders of multi-stakeholder initiatives describe the role of community colleges in entrepreneurship, economic development, and addressing wicked problems of sustainability and (b) how community college leaders in multi-stakeholder initiatives describe how the mission of community colleges is aligned with addressing wicked problems of sustainability?**

I am recruiting participants for the interview-based case study who are leaders of multi-stakeholder programs that:
(a) have addressed wicked problems of sustainability,
(b) involving community colleges or trade schools,
I have yielded impressive measurable outcomes documented, and
(d) incorporate entrepreneurialism and/or entrepreneurial problem-solving

The research process will consist of
(a) a Zoom interview (45 minutes – 1 hour), and
(b) suggestions for online artifacts and future interviewees are also appreciated.

The research findings will lead to a deeper understanding of how community colleges can play a role in addressing wicked problems, such as homelessness, hunger, climate change and poverty through multi-stakeholder collaborations. According to the literature, these global challenges are best addressed at a local level. With community colleges located 50 miles from any American city, these institutions are an ideal platform for systemic change. Often, the change occurs through multi-stakeholder initiatives, leading to positive economic, environmental and societal impact.

This research will also serve to inform community college leaders and policymakers as to the contribution community colleges are capable of in building a more equitable post-COVID society. In addition, the relationship between entrepreneurship, economic development and wicked problems of sustainability may uncover novel opportunities for community colleges to secure additional support for collaboratively pursuing this work.

Findings from this research will provide participating programs with insights for future collaborative opportunities nationwide. In addition, the study will aim to capture the impact and value created by the program, which can be leveraged for future promotion and research. Finally, combining the collaborative opportunities with potential impact may lead to corporate, government and philanthropic grant funding opportunities for all parties involved. It is the goal of this study to promote a win-win mindset for mutual benefit for all participants and corresponding organizations. **The interview timeframe is October 6, 2020 – November 15, 2020.**

Interested in participating? Please contact me through email at sstei@odu.edu or text/call at 540-397-4372. In advance, thank you for your support of this study. I look forward to your response regarding this request.

Sincerely,
Samantha Steidle
Doctoral Candidate, Old Dominion University
College of Higher Education
LinkedIn Profile

APPENDIX M: IRB FORM

OLD DOMINION UNIVERSITY
HUMAN SUBJECTS RESEARCH EXEMPT APPLICATION FORM

Study Title
Exploring the Role(s) of Community Colleges in Addressing   **Wicked Problems through Multi-Stakeholder Collaboration:**   **An Entrepreneurial Approach to Sustainability**

Principal Investigator (PI)		
The PI must be an ODU faculty or staff member who will serve as the project supervisor and be held accountable for all aspects of the project. Students cannot be listed as the PI.		
First Name: Christopher R.		**Last Name: Glass**
Telephone: 757-683-4118		**E-mail: crglass@odu.edu**
Office Address: Darden College of Education & Professional Studies, 2309 Education Building		
City: Norfolk	**State: Va**	**Zip: 23529**
Department: Educational Foundations & Leadership	**College: Darden College of Education & Professional Studies**	
CITI Completion Date: 4/5/2019		

Investigators		
Investigator(s): Individuals who are directly responsible for any of the following: the project's design, implementation, consent process, data collection, and/or data analysis. **Investigators must complete the CITI Basic Human Subjects Protection Training.**		
First Name: Samantha		**Last Name:Steidle**
Telephone: 540-397-4372		**Email: Samanthasteidle@gmail.com**
Office Address: 5151 Canter Dr		
City: Roanoke	**State: Va**	**Zip: 24018**
Department: Educational Foundations & Leadership	**College:Darden College of Education & Professional Studies**	
Affiliation: ☐ Faculty ☒ Graduate Student ☐ Undergraduate Student ☐ Staff ☐ Other:		
CITI Completion Date: 6/29/2018		
First Name:		**Last Name:**
Telephone:		**Email:**
Office Address:		
City:	**State:**	**Zip:**
Department:	**College:**	
Affiliation: ☐ Faculty ☐ Graduate Student ☐ Undergraduate Student ☐ Staff ☐ Other:		
CITI Completion Date:		

Upload a copy of the Additional Investigators form if more rows are needed.

Type of Research

2. This study is being conducted as part of (check all that apply):

- ☐ Faculty Research
- ☒ Doctoral Dissertation
- ☐ Masters Thesis
- ☐ Non-Thesis Graduate Student Research
- ☐ Honors or Individual Problems Project
- ☐ Other:

Funding

2. Funding Status:
- ☒ Research is **not funded (go to 3)**
- ☐ Research is **funded (go to 2a)**
- ☐ **Funding decision is pending** (funding decision has not been made) **(go to 2a)**

2a. Type of funding source: (Check all that apply)
- ☐ Federal Grant or Contract **(Must submit to IRB for review)**
- ☐ State or Municipal Grant or Contract
- ☐ Private Foundation
- ☐ Corporate contract
- ☐ Other (specify):

Funding Agency Name:	
Agency Proposal Number:	
Grant Start Date (MM/DD/YY):	
Grant End Date (MM/DD/YY):	

2b. List the point of contact at the funding source:

Name:	
Mailing Address:	
Telephone:	
Email:	

Research Dates

3a. Date you wish to start research (MM/DD/YY): **8/1/2020**

Research Location

4. Where will the experiment be conducted? (Check all that apply)

☐ On Campus	Building and Room Number:
☒ Off-Campus	Site Name and Street Address: Online- Zoom

Human Subjects Review

5.Has this project been reviewed by any other committee (university, governmental, private sector) for the protection of human research subjects?

☐ Yes
☒ No **(If no, go to 6)**

5a. List the other committee(s) that have reviewed this project and indicate which IRB is serving as the primary IRB.

Exempt Categories

**NOTE: IRB Review is required for Categories 2, 3, and 4 if your research
involves sensitive and identifiable information.
IRB Review is also required for Categories 7 and 8.**

☐ **Category 1**

Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

☒ **Category 2**

Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

    i.   The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

    ii.   Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

    iii.   The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by § .111(a)(7).

☐ **Category 3**

i.   Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection and at least one of the following criteria is met:

▪   The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

▪   Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

▪   The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §__.111(a)(7).

ii. For the purpose of this provision, benign behavioral interventions are brief in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on the subjects, and the investigator has no reason to think the subjects will find the interventions offensive or embarrassing. Provided all such criteria are met, examples of such benign behavioral interventions would include having the subjects play an online game, having them solve puzzles under various noise conditions, or having them decide how to allocate a nominal amount of received cash between themselves and someone else.

iii. If the research involves deceiving the subjects regarding the nature or purposes of the research, this exemption is not applicable unless the subject authorizes the deception through a prospective agreement to participate in research in circumstances in which the subject is informed that he or she will be unaware of or misled regarding the nature or purposes of the research.

☐ **Category 4**

Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met:

i.   The identifiable private information or identifiable biospecimens are publicly available;

ii.   Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects;

iii.   The research involves only information collection and analysis involving the investigator's use of identifiable health information when that use is regulated under 45 CFR parts 160 and 164, subparts A and E, for the purposes of "health care operations" or "research" as those terms are defined at 45 CFR 164.501 or for "public health activities and purposes" as described under 45 CFR 164.512(b); or

iv.   The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.

☐ **Category 5**

Research and demonstration projects that are conducted or supported by a Federal department or agency…
(Not common at ODU)

☐ **Category 6**

Taste and food quality evaluation and consumer acceptance studies
(Not common at ODU)

☐ **Category 7**

Storage or maintenance for secondary research for which broad consent is required: Storage or maintenance of identifiable private information or identifiable biospecimens for potential secondary research use if an IRB conducts a limited IRB review and makes the determinations required by § .111(a)(8).

☐ **Category 8**

Secondary research for which broad consent is required: Research involving the use of identifiable private information or identifiable biospecimens for secondary research use, if the following criteria are met:

i. Broad consent for the storage, maintenance, and secondary research use of the identifiable private information or identifiable biospecimens was obtained in accordance with §__.116(a)(1) through (4), (a)(6), and (d);

ii. Documentation of informed consent or waiver of documentation of consent was obtained in accordance with §__.117;

iii. An IRB conducts a limited IRB review and makes the determination required by §__.111(a)(7) and makes the determination that the research to be conducted is within the scope of the broad consent referenced in paragraph (d)(8)(i) of this section; and

iv. The investigator does not include returning individual research results to subjects as part of the study plan. This provision does not prevent an investigator from abiding by any legal requirements to return individual research results.

Study Purpose

6. Describe the rationale for the research project:

RATIONALE: The purpose of this qualitative interview-based case study is to explore (a) role of community colleges in addressing wicked problems of sustainability, (b) alignment between the mission of community colleges and addressing wicked problems of sustainability and (b) the relationships between entrepreneurship, economic development and tackling wicked problems of sustainability.

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RESEARCH QUESTIONS: The researcher will seek to answer the following research questions: (a) How do leaders of multi-stakeholder initiatives describe the role of community colleges in tackling wicked problems of sustainability? (b) How do leaders of multi-stakeholder initiatives describe how the mission of community colleges aligned with tackling wicked problems of sustainability? (c) How do leaders of multi-stakeholder initiatives view the relationships between entrepreneurship, economic development and tackling wicked problems of sustainability?

Subjects		
7. What will be the maximum number of subjects in the study?	30	
7a. Indicate the approximate number of	Males:20	Females:10

7b. What is the age of subjects? (Check all that apply)

☐ Children (Birth-17 years old) ☒ Adults (18-89 years old) ☐ Elderly (90+ years and older)

7c. Will students be enrolled in the study? (Check all that apply)
*If students are under 18 years old, parental consent must be obtained

☐ Undergraduate students	Department:	☐ Advanced students	Department:

7d. Provide rationale for the choice of subjects. Enumerate any additional defining characteristics, including age, of the subject population. (e.g., symptomatology, history, socio-economic status).

SUBJECTS: The study emphasizes the unit of analysis at the level of the multi-stakeholder initiatives. The initial population will include leaders of thirteen multi-stakeholder initiative programs (gatekeepers): Stanford Rebuild, Strategic Doing, Map the System, 10,000 Small Businesses, Deshpande Foundation, Spring Impact, Venture Well's I-Corps program, ASHOKAs Changemaker Program, NACCE Centers of Practice, Wicked Labs, Collaboration for Impact and TechStars.

Answering the research questions will require a top-down approach, leveraging the initial multi-stakeholder leaders as gatekeepers. Multi-stakeholder leaders typically hold the systemic knowledge about the efforts and impact generated through their programs. This level provides visibility, knowledge and awareness about the initiatives that have been most successful with addressing wicked problems of sustainability through multi-stakeholder initiatives. The gatekeepers will be asked to identify the multi-stakeholder initiatives that possess four traits, including: (1) higher education administration faculty or staff actively participated or (2) wicked problems of sustainability were central to the initiative and (3) measurable results were achieved and captured in an accessible report, study, or document.

Additional interviewees will be based on the recommendations of gatekeepers informed at a national level. This best resembles a snowball strategy for interviewing additional participants. Snowball sampling is a method used in both qualitative and quantitative research (Cohen & Arieli, 2011). Using the technique, the researcher requests existing participants provide referrals for additional particpants Cohen, N., & Arieli, T. (2011). After new interviewees are identified, either the gatekeeper or the researcher will reach out to the prospective interviewee to request participation. Purposive sampling will also be utilized, as needed, for the study. Purposive sampling is often used for qualitative studies and involves selecting interviewees based on the research study's questions (Teddlie & Yu, 2007). Key definitions will be provided to all interviewees. In total, the study anticipates approximately 30 interviewed participants Individuals interviewed will not be students or individuals under the age of 18.

Vulnerable Subjects

8. Are research subjects being used whose ability to give informed voluntary consent may be in question? (e.g., children, persons with AIDS, mentally disabled, psychiatric patients, prisoners.)
☐ Yes
☒ No

8a. What type of vulnerable subjects are being enrolled? (Check all that apply)

☐ Critically Ill Patients	☐ Mentally Disabled or Cognitively Impaired Individuals
☐ Prisoners	☐ Physically Handicapped
☐ Pregnant Women	☐ Children
☐ Other (describe):	

If yes, explain the procedures to be employed to enroll them and to ensure their protection:

Recruitment
Copies of all recruitment materials must be attached to this application.

9. Check all types of recruitment that will be utilized in the study.

☒ E-mail/Social Media	☐ Letters
☐ Newspaper/Radio/Television/Website advertising	☐ Posters/Brochures

☐ Other:

9a. What methods will be used to identify and recruit prospective subjects? Specify the source of potential subjects. If an outside agency or organization will recruit subjects on the investigators behalf, a support letter must be included.
The interview process will leverage a three-stage approach. Phase 1 interviewees will focus on the thirteen multi-stakeholder program leaders, which will be recruited via email. Phase 2 interviewees will be recruited using a snowball approach, relying on recommendations by the program leaders. Phase 3 will leverage purposive sampling to fill in remaining gaps in the research.

Inclusion and Exclusion Criteria

Outline the inclusion and exclusion criteria for the study below.

Inclusion:
- Participants must be program experts and leaders of multi-stakeholder initiatives involving community and/or technical colleges.

Exclusion:
- Community college students will not be interviewed.
- Vulnerable populations will not be interviewed
- Individuals Under 18 years old will not be interviewed

11. Describe the procedures that will be followed. (Include a succinct, but comprehensive statement of the methodology relating to the human subjects. You are encouraged to include a discussion of statistical procedures used to determine the sample size.)

PROCEDURES: Most interviews will take place on a private zoom account. The researcher will reach out to the leaders of the multi-stakeholder initiatives through email. The semi-structured interview will be guided by preliminary questions, while also allowing the researcher to clarify and expand on the topic (Merriam & Tisdell, 2016). The data collected through the interviews will consist of direct quotes from leaders of the multi-stakeholder initiatives about their experiences, opinions and knowledge relating to the research questions. In a qualitative case study, data is collected in the form of words rather than numbers (Merriam & Tisdell, 2016; Labuschagne, 2003). In addition, the researcher is considered the primary tool for data collection and analysis (Creswell, 2012; Merriam & Tisdell, 2016). The interviews will consist of three phases, each with seven steps. Phase 1 will focus on the multi-stakeholder program leaders, while phase 2 will focus on the additional interviewees recommended by the program leaders. Phase 3 will use purposive sampling to fill in remaining gaps in the research by leveraging key topical experts

Program Founder Interviews. (1a) The researcher will contact the multi-stakeholder program leaders personally through email to explain the purpose and scope of the research study. (2a) Upon agreement, the researcher will email the interviewee an Informed Consent paperwork, which will include the purpose and scope of the study, any ethical issues and a confidentiality and anonymity statement (Merriam & Tisdell, 2016). The interviewee will be encouraged to share any questions or concerns about the study. (3a) Interview questions, along with pre-interview qualitative questionnaire and will be shared through survey monkey. The questionnaire will serve to clarify three questions: (i) Which UN Sustainable Goals have been addressed through their program? (ii) Which community colleges have participated in their program for the purpose of addressing wicked problems? (iii) Out of the colleges listed in #2, which initiatives ultimately yielded measurable impact captured through formal reports or other documents? Once the questionnaire has been returned, the research questions will be asked with the answers to these questions in mind. (4a) Upon agreement, the researcher will schedule all interviews through the Zoom meeting platform. (5a) In preparation for the interview, the interviewer will visit the organization's website and collect strategic plans, reports and other documents pertaining to the multi-stakeholder initiatives discussed. The researcher will also collect the mission statement of the higher education institution that participated in the initiative, as well as news articles or reports about the effort. Finally, during the document review, the researcher will attempt to collect the backgrounds of community college participants, as they may impact the strength of the initiative as a whole (Diaz-Fernandez et al., 2015; Wieserma & Bantel, 1992). (6a) Next, the researcher will host the semi-structured interviews, which will be recorded. A separate audio recording will be captured and the researcher will take detailed notes during the interview. Once the interview is complete, the Zoom recording will be transcribed verbatim using NVivo transcription software. According to Merriam and Tisdell (2016), a verbatim transcription offers the ideal format for qualitative analysis. After the interview, the program founders and executives will be asked if there are others that should be interviewed on behalf of the teams involving the community college. (7a) The researcher will then code the interviewee's answers using a thematic approach. (8a) A copy of the summary will be sent to the interviewee to ensure the accuracy of the notes. If the interviewee responds about an error, the correction will promptly be made. This step will also involve descriptive notes, which will provide information about the interview setting and experience including any disruptions or body language. In addition, the researcher will capture reflective notes felt throughout the interview. The reflective notes may include personal thoughts or intuition felt during the interview.

Follow-up Interviewees and Experts. (1b) The researcher will contact the interviewees personally through email to explain the purpose and scope of the research study. (2b) Upon agreement, the researcher will email the interviewee the Informed Consent paperwork, which will include the purpose and scope of the study, any ethical issues, and a confidentiality and anonymity statement (Merriam & Tisdell, 2016). In addition, the interviewee will be encouraged to share any questions or concerns about the study. No pre-interview questionnaire is required for follow-up interviewees. (3b) Upon agreement, the researcher will schedule all interviews through Zoom recordings. (4b) In preparation for the interview, the interviewer will visit the organization's website and collect strategic plans, reports and other documents pertaining to the multi-stakeholder initiatives discussed. Finally, during the document review, the researcher will attempt to collect the backgrounds of community college participants, as they may impact the strength of the initiative as a whole (Diaz-Fernandez et al., 2015; Wieserma & Bantel, 1992). (5b) Next, the researcher will complete the semi-structured interviews, which will be recorded. A separate audio recording will be captured and finally, the researcher will take detailed notes during the interview.

After the interview, the program founders and executives will be asked if there are others that should be interviewed on behalf of the community college, (6a) The researcher will then code the interviewee's answers using a thematic approach, (7b) A copy of the summary will be sent to the interviewee to ensure the accuracy of the notes. If the interviewee responds about an error, the correction will promptly be made. This step will also involve descriptive notes, which will provide information about the interview setting and experience including any disruptions or body language. In addition, the researcher will capture reflective notes felt throughout the interview. The reflective notes may include personal thoughts or intuition felt during the interview.

Data are collected from the participants until the data reaches a saturation point, e.g. no new information being revealed by additional participants. The researchers anticipate that data will reach the saturation point before 30 interviews are completed. This number of participants is appropriate for a single qualitative study in which semi-structured interviews are used.

ANALYSIS: According to Creswell (2012), there is no singular process for qualitative data analysis. Researchers note that data analysis should be performed shortly after the pilot study because it impacts the emergent design and structure of future data collection decisions (Lincoln & Guba, 1985).   Therefore, a pilot interview will be scheduled with the founder or executive of a multi-stakeholder program, which addresses wicked problems in partnership with community colleges. Interim analysis will be leveraged in order to discover recurring and common themes across the data (Leedy & Ormrod, 2013).   Significant words and phrases will be grouped thematically. According to Merriam and Tisdell (2016), a verbatim transcription offers the ideal format for qualitative analysis. Narratives will be used to describe both the individual cases and to compare the cases collectively through a cross-case synthesis for depth and clarity (Yin, 2014). The Zoom interviews will be transcribed verbatim and analyzed for themes using NVivo transcription software. Analyzing this data and organizing by topic will help the researcher better understand and challenge findings (Maxwell, 2013).

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11a. Will the deliberate deception of research participants be involved as part of the experimental procedure? Subjects must be prospectively informed that he or she will be unaware of or misled regarding the nature or purposes of the research.
☐ Yes **(If yes, explain the nature of the deception, why it is necessary, any possible risks that may result from the deception, and the process of prospective agreement and debriefing of the subject).**
☒ No
Comments:

Compensation

12. How much time will be required of each subject?
45 Minutes - 1 Hour

12a. Will research subjects receive course credit for participating in the study?
☐ Yes **(If yes, please explain in comments section.)**
☒ No
Comments:

12b. Are there any other forms of compensation that may be used? (e.g. Money, Gift Cards)
☐ Yes **(If yes, please explain in comments section.)**
☒ No
Comments:

13. Describe in detail the procedures for protecting the anonymity (meaning that no one will ever be able to know the names) of the research subjects. If anonymity is impossible, then describe in detail the procedures for safeguarding data and confidential records. These procedures relate to how well you reduce the risk that a subject may be exposed or associated with the data.

DATA MANAGEMENT - In an effort to ensure anonymity and confidentiality, the researcher will separate all identifier information (name, address, email and telephone number) from the interview itself when it is no longer required. Data will be stored for up to five years in a locked, private office, or alternative protected space, of the interviewers. In addition, electronic data will be stored on a password-protected computer or another computer to which only the interviewers have access. After five years, digital audio files will be destroyed. Only the researchers will have access to the data before names and personal identities have been removed.

Additional individuals, such as peer debriefers, may be involved in the analysis of the data; however, these individuals will not have access to personal identification information of the participants. Peer debriefers will only contribute to analysis because they are objective third parties whose expertise in qualitative research or cultural interpretation of data may be of benefit. After analysis is complete, only the researchers will have access to records and data. The names of individuals will not be connected to participants' identities during analysis and in the resulting paper.

RISKS AND BENEFITS FOR PARTICIPANTS- Individuals may be concerned about personal information being shared with other individuals, particularly due to the personal nature of being a member of a minority and non-citizen group in another country, such as an international student. However, the voluntary and confidential nature of participation will be thoroughly stressed, in addition to measures that will be taken to provide confidentiality. As a result, limited likelihood exists that participants would experience the above harm. Furthermore, we anticipate that participants who take part in this study will benefit from reflecting on their own experiences and gaining a better understanding of themselves and how they interact with others in their current learning environment.

No problems are anticipated, although when conducting interviews, the researchers will need to remain aware that English is unlikely the participants' primary language. As a result, the researchers may need to speak more slowly, in addition to repeating or rephrasing questions. In addition, the researchers will need to be cognizant of cultural differences in communication, such as participants' desire to maintain direct eye contact or not.

INFORMED CONSENT- All participants will be provided a letter of consent that they must sign, and the purpose of the study will be explained to them, including their rights as participants, their ability to withdraw from the study at any time, and a request for permission to be digitally-recorded. The researchers will only digitally-record interviews when consent is given. The researchers will be sensitive to the participant's level of comfort throughout the interview and will redirect the course of the interview conversation if participant shows discomfort or anxiety. During the consent process and the interview, the researchers will ensure the participant's privacy is protected. The researchers will make sure their interactions take place in private or semi-private locations where participants feel comfortable meeting. Only the researchers will be conducting interviews and interacting with participants. After IRB approval is received, the researchers will contact people they identify as individuals who come into high levels of contact with international students at Old Dominion University; this first group is referred to in the current proposal as the initial contact group. Individuals in the initial contact group may include faculty members in various disciplines, staff members in the Office of Intercultural Relations (OIR), Office of International Programs (OIP), participants in student organizations, and others. The researchers will make contact with individuals in the initial contact group in person or via phone or email to provide a general description of the study, its purpose, and the expected length of the interviews. The researchers will ask these individuals to identify best ways to disseminate the invitation to participate with potential participants who meet the specified requirements. The researchers will also ask individuals in the initial contact group to disseminate an email or in-person invitation to participate to international students. In addition to the initial email invitation, the researchers may also invite students to participate via phone, additional email messages, or in-person

Measures that protect participants' identity will be taken to the fullest extent allowed by law, keeping data in a secure place, reporting findings as themes (aggregating the data), and reporting individual responses using pseudonyms (assigning fake names). The names of individuals will not be connected to participants' identities during analysis and in the resulting paper.

To minimize any potential risks, information will be kept confidential in a space that is inaccessible to the public and is kept locked. Identifying information will be kept separate from data. Only the researchers will have access to both hard and electronic files. Names will be coded during analysis. This will effectively prevent the disclosure of personal information of

participants' responses. Furthermore, the consent letter will reference IRB as a source of information about the project and procedures (see attached consent form)

Training

14. **Briefly explain the nature of the training and supervision of anyone who is involved in the actual data collection, research design, or in conducting the research. This information should be sufficient for the IRB to determine that the RPI and investigators possess the necessary skills or qualifications to conduct the study.**

Human training certificate is attached.

PLEASE NOTE:

- You may begin research when you receive final WRITTEN notice of your projects approval through IRBnet.
- You MUST inform the committee of ANY adverse event, changes in the method, personnel, funding, or procedure.
- At any time, the committee reserves the right to re-review a research project, to request additional information, to monitor the research for compliance, to inspect the data and consent forms, to interview subjects that have participated in the research, and if necessary to terminate a research investigation.

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT – PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this <u>Requirements Report</u> reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Samantha Steidle (ID: 7263939)
- **Institution Affiliation:** Old Dominion University (ID: 1771)
- **Institution Email:** sstei003@odu.edu
- **Institution Unit:** Education
- **Phone:** 5403974372

- **Curriculum Group:** Social & Behavioral Research - Basic/Refresher
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 2 - SBR 101 refresher
- **Description:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

- **Record ID:** 36106083
- **Completion Date:** 28-Jul-2020
- **Expiration Date:** 28-Jul-2022
- **Minimum Passing:** 80
- **Reported Score*:** 95

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
SBE Refresher 1 - Instructions (ID: 943)	28-Jul-2020	No Quiz
SBE Refresher 1 – History and Ethical Principles (ID: 936)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Federal Regulations for Protecting Research Subjects (ID: 937)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Informed Consent (ID: 938)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Defining Research with Human Subjects (ID: 15029)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Privacy and Confidentiality (ID: 15035)	28-Jul-2020	4/4 (100%)
SBE Refresher 1 – Assessing Risk (ID: 15034)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Research with Prisoners (ID: 939)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Research with Children (ID: 15036)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – Research in Educational Settings (ID: 940)	28-Jul-2020	2/2 (100%)
SBE Refresher 1 – International Research (ID: 15028)	28-Jul-2020	1/2 (50%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?k7fa64bf7-5364-49d2-911b-d0332587e5af-36106083

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT – PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Chris Glass (ID: 1697819)
- **Institution Affiliation:** Old Dominion University (ID: 1771)
- **Institution Email:** crglass@odu.edu
- **Institution Unit:** Educational Foundations & Leadership
- **Phone:** 757-683-4118

- **Curriculum Group:** Social & Behavioral Research - Basic/Refresher
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 2 - SBR 101 refresher
- **Description:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

- **Record ID:** 31213806
- **Completion Date:** 05-Apr-2019
- **Expiration Date:** 04-Apr-2021
- **Minimum Passing:** 80
- **Reported Score*:** 91

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
SBE Refresher 1 - Instructions (ID: 943)	05-Apr-2019	No Quiz
SBE Refresher 1 – History and Ethical Principles (ID: 936)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Federal Regulations for Protecting Research Subjects (ID: 937)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Informed Consent (ID: 938)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Defining Research with Human Subjects (ID: 15029)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Privacy and Confidentiality (ID: 15035)	05-Apr-2019	4/4 (100%)
SBE Refresher 1 – Assessing Risk (ID: 15034)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Research with Prisoners (ID: 939)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Research with Children (ID: 15036)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – Research in Educational Settings (ID: 940)	05-Apr-2019	2/2 (100%)
SBE Refresher 1 – International Research (ID: 15028)	05-Apr-2019	0/2 (0%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?kaa5e91d3-ffd5-4f5a-87e0-37a0033cd36a-31213806

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

Completion Date 28-Jul-2020
Expiration Date 28-Jul-2022
Record ID   36106083

This is to certify that:

Samantha Steidle

Has completed the following CITI Program course:

Not valid for renewal of certification through CME. Do not use for TransCelerate mutual recognition (see Completion Report).

Social & Behavioral Research - Basic/Refresher (Curriculum Group)
Social & Behavioral Research - Basic/Refresher (Course Learner Group)
2 - SBR 101 refresher   (Stage)

Under requirements set by:

Old Dominion University

Verify at www.citiprogram.org/verify/?w2f5e12b5-070b-4883-ac1e-c5250f62cab6-36106083

APPENDIX N: MSI PROGRAM PRE-INTERVIEW RESEARCH

Program's Goal	Wicked Problems of Sustainability	Process	Value Created
Changemakers search, select and support entrepreneurs, deliver ground-breaking analysis, accelerate company intrapreneurship, and create strong partnerships that will drive the movement forward. Their systems-changing innovations aimed to address deep-rooted social problems.	Challenges nourish changemakers who enter. Challenges are framed in partnerships with the worlds' leading institutions. They are often the most visible part of a broader, multi-year, multi-million-dollar commitment to changemaking. Challenges: convene people and solutions to tackle seemingly intractable problems	Innovation Mapping Challenge competitions 3-Day Bootcamps 6-Week Courses	**23.5M Awarded** 33,450 Ideas Shared 146 NRPs 197 Countries 3,800 social entrepreneurs in than 90 countries, 302 Social Entrepreneurs in US **500 higher ed institutions in 50 countries, with 5,000 individuals engaged directly**
Leveraging entrepreneurship to improve the local economy.	Entrepreneur-led economic development for supporting main street businesses	The signature program is the 10–12-week, cohort-based, the core curriculum that equips entrepreneurs of all kinds with the insights, relationships, and tools needed to turn ideas into action	200 communities served 690 leaders trained **12,000 starters supported** **1240 businesses helped during COVID**
Leveraging entrepreneurship to improve the local economy.	Entrepreneur-led economic development for supporting main street businesses	Identify, map, connect, empower, convene, measure, and educate.	4,727 Resource Providers 130,000 Requests for Resources
The goal was to address wicked problems through entrepreneurship.	Wicked civic engagement and workforce challenges	Engaging champions and building public will, establishing and scaling education, workforce and government partnerships, changing policy and practices, and fundraising for resources to support the collaborative's work.	
The program's goal was to drive innovation in education so that students are better prepared for success in STEM/STEAM careers that demand 21st Century skills.	Engage students in high-paying STEM jobs Connecting students to funded internships Full array of SDGs	In 2016, the community college Workforce and Economic Division funded the $17 million the initiative for three years. Planning grants of $20,000 were provided to applicants. In July 2017, the program announced that 24 colleges won implementation grants ranging from $100,000 to $350,000 that are renewable for a second year.	**64,310 students engaged** 893 courses accessed **844 funded internships** 1,296 employers recruited 7.957,552 funding matched 691 faculty engaged 398 advisory meetings 1,186 professional dev activities
The program enables leaders to design and guide new networks that generate innovative solutions. It is a new strategy	Entrepreneurial Ecosystems Flint Michigan- Water crisis & teen suicide	The program workshops are between three hours and full-day session in which a group takes on four questions	

discipline that is lean, agile and fast—just what organizations, communities and regions need to survive and thrive.	Manufacturing Collaboration	about their community or organization's future. The four questions are: 1.What could we do? 2.What should we do? 3.What will we do? 4.What's our 30/30?	
The state's only college-level prototyping competition, providing the grants and guidance necessary to take a student team's idea for positive impact through all stages of prototyping. Invent Oregon helps college students at all levels take their concept from an idea to reality.		Through the program, students are empowered through mentorship and education to see themselves as innovators. Invent Oregon is supported by a large ecosystem of partners and supporters across the state who believe in the power of invention.	75% of students say they are likely to commercialize their invention.
To expand and deepen resources for the members.	Equity & Diversity Gender Equality Holistic SDGs	Various community colleges lead the effort to tackle key causes using methods of innovation, collaboration and communication.	
There are more than 1.2 million homeless students across the country and 23,000 in one county alone. Research shows homelessness contributes to a wide range of challenges including physical and psychological problems, safety fears and academic struggles. We give students the skills and tools they need to overcome these odds.	Poverty Homelessness Hunger Mental Health Education The barriers these students face hinder their ability to become contributing, successful members of their families and society and place them at a high risk of becoming tomorrow's homeless adults.	We know education is a key to success for homeless students. In order to meet our students' unique needs, the program has developed an innovative approach to learning where students gain the skills they need to improve their lives, develop awareness of their emotions and healthy coping skills, explore their passions and plan for a life of self-sufficient living. The program provides students with a safe, stable environment for learning with wraparound services to meet their basic needs.	**350 homeless students served a day**.
The program aims to create a nationwide ecosystem that helps researchers translate their promising technologies to market by teaching them how to be entrepreneurs and connecting them to each other. Additionally, they focus on developing and nurturing a	Financial Sustainability of CCs	The program is fast-paced and rigorous; teams are pushed, challenged, and questioned in the hope that they will learn quickly whether or not their ideas are worth pursuing. Teams are expected to complete at least ten customer	1,990 – Trained teams $301M – Teams fundraised 271 Colleges &Universities engaged 47 States **1,100 Start-ups created** $101M Raised funds in bio-Trained 1472 Facilitators

national innovation network to guide scientific research toward the development of solutions to benefit society.		interviews a week, which means that over the ten-week course teams have contact with 100 potential customers. The teams—composed of academic researchers, student entrepreneurs, and business mentors—participate in a rigorous and fast paced 7-week curriculum via online instruction and on-site activities	**$650M total fund raised**
The program is designed to help entrepreneurs create jobs and economic opportunity.	Financial Sustainability of CCs Economic Growth	The program partners with local colleges to provide small business owners with practical business education. Expert advice and advising is provided from an alumni network. Access to capital is part of the process.	**9,700+ SB in 50 states** 175k Employees $12B Total Revenues Job Creation: **47% Inc – 6mths after** 53% Inc – 18mths after 56%Inc – 30mths after Revenue Growth **67% Inc – 6mths after** 72% Inc – 18mths after 75%Inc – 30mths after 98% program completion +92 net promoter score **27 community colleges**

APPENDIX O: COVID'S RELEVANCE TO COMMUNITY COLLEGES

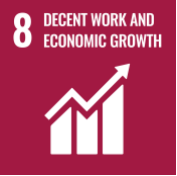| SDG Issue (Wicked Problems)	COVID's Impact on America And Globally	Relevance to Community Colleges	Current Policy of President Biden Challenges & Considerations
1 NO POVERTY	The National Bureau of Economic Research reported the United States economy entered into an economic recession in March 2020 with nearly **42.6 million individuals filing for unemployment** since (Hess, 2020). When researchers adjusted for misclassification, an alarming **31.8% of African Americans and 31.4% of Latinos were categorized as unemployed** in April, 2020 (Fairlie, Couch & Xu, 2020). Additionally, the American Bankruptcy Institute reported a **48% increase in Chapter 11 bankruptcies**, compared to the year prior (Burns, 2020). Researchers from the Brookings Institute aggregated research by MIT, Princeton University, Wake Forest University, and the Aspen Institute to better quantify the cumulative effect of COVID-19 on job loss and otherwise economic hardship. Findings of the aggregation indicate that between **29-43% of renters in the United States are at risk of eviction**, based on unemployment data, housing insecurity statistics, and eviction filings. The researchers warn of a potential for widespread evictions. Notably, **80% of those facing eviction are people of color, which corresponds with the high-levels of joblessness in minority communities.** Eviction is reportedly expensive, not only for the individual but for society as a whole. Studies show that after an eviction, individuals experience mental and physical health declines, poor	Osborne (2020) surveyed 8,756 community college students in North Carolina to better understand the impact COVID-19 had and to explore new barriers posed. Among all students surveyed, **75% indicated they lost a job, income or had their hours cut. 28% reported that they could not pay bills** (not including rent or mortgage), 17% had a family member test positive for COVID-19, 13% lost childcare and 12% could not pay their rent. Additionally, **recent high school graduate enrollment in community college as of December, 2020 was 22% less, compared to December, 2019,** according to research by the National Student Clearing House Research Center. **The largest drop was comprised of students in high-poverty, low-income high schools.** In other words, students from poorer schools were attending college less (Sedmak, 2020).	On day 3 of President Biden's presidency, he signed executive orders to guarantee unemployment insurance for workers who refuse to work due to COVID-19, assist with delivering benefits, and support the facilitation of stimulus payments. In an effort to address poverty, researchers call for an increase of the minimum wage to $15.00/hour. According to the report, this **would boost the earnings of 17 million workers, increase the wages for an additional 10 million employees, and raise an estimated 1.3 million Americans above poverty.** However, the report also warns of unintended consequences, including the possibility of 1.3 million jobs being lost (Congressional Budget Office, 2019). The White House Press Secretary acknowledged during a press briefing that as of January 22, 2021, **10 million Americans are unemployed and 14 million are behind on rent payments** (White House Briefing, 2021). https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

	overall health outcomes, problems securing employment, higher levels of depression, suicide, anxiety, and respiratory disease, in addition to negative impacts on the well-being and educational outcomes of the children involved. Additionally, the costs to society involve emergency housing and shelters, in-patient care, emergency room visits, child welfare, and increased weight on the criminal system. According to a recent study, **nearly 8 million more Americans since Summer fell into poverty** (Dec, 2020).		
2 ZERO HUNGER	In 2020, more than **50 million people experienced food insecurity**, compared to 35 million in 2019 and 14.3 million in 2018. According to Feeding America (2021), households with children experience higher levels of food insecurity. **The 50 million in 2020 includes 17 million children**, compared to 4.3 million children in 2018. **The average SNAP recipient receives $127/Month, equaling $1.40 per meal**. 43 million Americans (1 out of 8 Americans) rely on the benefit, up 6 million people since COVID hit. To qualify, families must make under $52,000/year. Although Congress approved $13 billion in additional funding in December, 2020, Americans are still going hungry, due to bureaucratic paperwork barriers (NBC Nightly News – 2/2/21).	The wicked problems faced by community college students, such as homelessness, hunger, and the ability to pay rent and utilities, often **determine whether students can afford to enroll and/or continue to take** classes (Goldrick-Rab, Richardson & Hernandez, 2017). Ultimately, the associated impact on enrollment and retention may threaten the **financial sustainability of the entire institution.** The Hope Center (2020a) surveyed 38,602 students at 54 academic institutions, consisting of 39 community colleges and 15 universities between April 20th and May 15th 2020. Findings indicated **that 3 in 5 students experienced basic needs insecurity. Of the community college students surveyed, 44% experienced food insecurity and 11% were homeless** as a result of the	On day 3 of President Biden's presidency, President Biden signed executive orders to expand food assistance programs. The White House Press Secretary acknowledged during a press briefing that as of January 22, 2021, **29 Million adults and 8 million children were considered food insecure** (White House Briefing, 2021). https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

		pandemic. Additionally, 15% of students applied for SNAP food benefits. Between September and November, the Hope Center (2020b) surveyed 195,000 students across 42 states at 202 universities and colleges, including 130 community colleges and 14 HBCUs. At community colleges, **food insecurity ranged from 42% to 56%, while housing insecurity ranged from 46% to 60% and homelessness ranged from 12% to 18%** (Goldrick-Rab et al., 2020b).	
3 GOOD HEALTH AND WELL-BEING	In 2015, Bill Gates warned that "if anything kills over 10 million people in the next few decades, it's most likely to be a highly infectious virus, rather than war" (Sandler, 2021). According to John's Hopkins, as of March 5, 2021 **there were over 116 million cases globally, with 28 Million in the U.S. and 522,610 deaths.** Additionally, new variants of the virus threaten scientific progress. (John's Hopkins University, 2021) In addition to the pandemic crisis, mental health has taken a toll in the country. According to a recent 28 country survey, which included the United States, for the World Economic Forum, **81% have increased anxiety around job security, 81% have experienced stress due to changing work routines, 78% express difficulty finding work-life balance, 76% cite reduced productivity, and 70% cite stress due to family issues.** The sample size for the survey was 12,823 (Boyon & Silverstein, 2020).	Healthcare is a luxury not afforded to many low-income students. And therefore, they were even further impacted by Covid-19. In addition to physical health, mental health is a major concern for community college students. The Hope Center (2020a) report surveyed 38,602 students and found **50% of community college students could not concentrate on school**, as a result of the pandemic. Additionally, **50% of all students reported moderate to high levels of anxiety.**	On day 2 of President Biden's presidency, President Biden signed an executive order to promote COVID-19 safety during domestic and international travel, expand access to COVID-19 treatments, strengthen public health, promote workplace safety amid the pandemic, establish a COVID-19 pandemic testing board, and support states' use of the National Guard in the COVID-19 response. https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

	According to the Trevor Project, **40% of LGBTQ young people seriously considered suicide during 2020**. Additionally, the opioid crisis is an epidemic hiding behind the pandemic. According to the CDC (2020)**, 81,000 people died from overdoses in the twelve months leading up to May, 2020. This is an increase of 38.4%, primarily as a result of synthetic opioids. In fact, 10 US states reported a 98% increase in synthetic opioid deaths.** The mortality rate nationwide was the highest in a decade. In 2021, Bill Gates suggested, "to prevent the hardship of this last year from happening again, pandemic preparedness must be taken as seriously as we take the threat of war" (Sandler, 2021).		
4 QUALITY EDUCATION "Education is the most powerful weapon which you can use to change the world" -Nelson Mandela	The mandatory quarantines due to COVID contributed to nearly **42 million Americans filing for unemployment, not including the 583,000 independent workers who filed for government assistance** (Thorbecke, 2020). The Center on Budget and Policy Priorities (November, 2020) estimated the state revenue declines in all 50 states for 2020, 2021, and 2022 as a result of the pandemic-induced unemployment and millions of business closures. **The decline as a percentage of pre-COVID revenue was as high as 31% in some states**. These closures impact quality education in several ways, including impacting the ability of student parents to access childcare and higher education budgets. →	According to the American Association of Community Colleges (2020b), **54% of colleges reported that the decrease in state and local taxes would impact their budgets significantly.** 33% of the colleges in the study said their budgets would be moderately impacted. In addition to decreased budgets, the National Student Clearinghouse **Research Center (2020) reported a 21% decrease in freshmen enrollment at community colleges in December 2020.** According to the study, the programs experiencing the steepest declines in year-to-year enrollment were remedial education (-37%),	According to an analysis by the Brookings Institute, President Biden's educational policies call for an investment in human capital in partnership with community colleges (Wong, 2020). Additionally, community colleges are acknowledged as critical pathways for economic mobility. In fact, Dr. Jill Biden has signaled an interest in leveraging her years of experience as a community college educator throughout her time as first lady.

		precision/production (-18%), culinary (-17%), and technicians (16%). Overall, **Fall, 2020 enrollment at community colleges dropped by 10% year to year** (Sedmak, 2020). The budget shortfalls, resulting from COVID, will drastically impact state budgets for higher education. California, for example, originally budgeted $18.1 billion in state funding for academic institutions but recently lowered the funding to $16.3 for California's 33 community colleges and 200 community college districts, campuses, and centers (EdSource, 2020). According to one study, **over 800 higher education institutions will experience a 20% shortfall or greater** (McKinsey & Company, 2020a).	
5 GENDER EQUALITY "Women belong in all places where decisions are being made" – Ruth Bader Ginsburg	Women have been disproportionately impacted by COVID. **66% of women have left the workforce, four times the rate of men** (Women in Workplace, 2020; Kashen, Glynn & Novello, 2020). 140,000 net jobs were lost in December (BLS, 2021). According to the National Women's Law Center, overall, women lost 156,000 jobs, while men gained 16,000 jobs (NWLC, 2021). In other words, **100% of net job losses in December were jobs held by women** (BLS, 2021). In 2020, women ended the year with 5.4 million fewer jobs, while men ended the year with 4.4 million less jobs than in February (BLS, 2020). The Brookings Institute (2021) estimates that more than 2 million women left the	According to a report by Generation Hope (2020), 20% of college students are parents, 40% of these parents felt isolated on campus, and 60% missed at least one day of class due to childcare issues. 57% of community college students were female (Postsecondary National Policy Institute, 2020).	On day 1, President Biden signed an executive order banning discrimination on the basis of gender identity or sexual orientation On day 2, President Biden signed executive orders to support the reopening and continuing operation of schools. On day 6, President Biden signed executive orders to reverse the transsexual military ban. On day 7, President Biden signed executive orders to reaffirm commitment to tribal sovereignty and denounce anti-Asian discrimination and xenophobia. Reshma Saujani, the Founder of Girls Who Code mobilized 50 prominent women leaders who proposed a "Marshall Plan for Moms", calling for the Biden Administration to create a task force to combat this issue,

		workforce since the start of the pandemic. Much of this is attributed to childcare, which is considered essential infrastructure (CDC, 2021). School closings have exacerbated these numbers (Kashen, Glynn & Novello, 2020). Additionally, women leaving the workforce is estimated to cost 64.5 billion annually in lost wages and economic activity and risks undoing 25 years of progress toward gender equality (Kashen, Glynn & Novello, 2020)		direct payments to support moms, ensure affordable child care is offered, and to support paid family leave, all within President Biden's first 100 days in office. https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021
8 DECENT WORK AND ECONOMIC GROWTH	Increasingly, the system is viewed as only benefiting the wealthy and as a system "rigged" against the majority of Americans, particularly minorities. In fact, even before the pandemic that led to over **40 million unemployed**, a longitudinal study conducted by the U.S. federal government titled, "Report on the Economic Well-being of U.S. Householder for 2018," found that **millions of Americans barely have $400 available in the case of an emergency** (The Federal Reserve System, 2019). Mandatory quarantines contributed to the 40 million Americans filing for unemployment, not including the 583,000 independent workers who filed for government assistance (Foster & Mundell, 2020). **The associated losses in tax revenue was significant, ranging from 5% to 45%** (McFarland, Gleeson & Pine, 2021). *The Next Generation Entrepreneurship Corps Act (2021) Summary* **provides statistics regarding the impact of COVID on small business owners in America. According to the summary, "COVID-19 recovery has decimated**	The Hope Center (2020a) report surveyed 38,602 students and found **32% of community college students had their work hours reduced and 33% lost their job completely.** Additionally, 15% of all student surveyed applied for emergency aid and 21% applied for unemployment.	On day 1, President Biden signed an executive order to strengthen Deferred Action for Childhood arrivals. On day 6, President Biden signed executive orders to promote a "Buy American" agenda" President Biden's $1.9 Trillion "American Rescue Plan" allocated $15 Billion in grants to small businesses and $350 Billion for paying workers on the front lines. https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

small businesses. More than **630,000 small businesses closed in 2020, with nearly 53% of small business owners** reporting that they may not recover in six months or ever. As of January 2021, there were **9.9 million fewer jobs** in the U.S. than there were at the start of the pandemic, many of which were **jobs lost by women.** Due to COVID-19, about 30% of Black- and Brown-owned businesses will temporarily close in the next three months, with **18% of Black and Latino small business owners reporting** they will likely permanently close. As outlined in the President's American Rescue Plan, entrepreneurship is key to replacing these businesses and jobs. **There is an entrepreneurship gap in low-income areas.** Low-income areas have proportionally fewer self-employed workers and small businesses. These areas—urban and rural—require intentional investment or they will be left behind by the economic recovery".

As of January, 2021, more than **110,000 bars and restaurants closed during the pandemic** (New York Times, 2021). The National Restaurant Association forecasted **$897 billion in revenue for 2020 but only brought in $659 billion.** Less revenue equates to less jobs. The Bureau of Labor Statistics estimated between January, 2020 and 2021, the number of restaurant workers decreased from 12.2 to 9.8 million, a decrease of 2.4 million workers (NBC News, 2021).

According to an analysis by McKinsey & Company, Asians have been particularly hard hit financially. Asian owned small businesses employ 3.5 million people and produce $700 billion in annual GDP. According to the study, "During the

	COVID-19 pandemic, Asian American unemployment rates increased by more than 450 percent from February to June 2020, revealing a greater rate of increase than that of other racial groups" (McKinsey & Company, 2020b).		
10 REDUCED INEQUALITIES "We need to stop just pulling people out of the river. We need to go upstream and find out why they're falling in". -Desmond Tutu "If you are neutral in situations of injustice, you have chosen the side of the oppressor". -Desmond Tutu "If you see something that is not right, not fair, not just you have a moral obligation to do something about it". – John Lewis Social mobility is "the defining issue of our time" -Barak Obama	On January 20, 2020, the United States announced the first coronavirus case. When investors learned that the Coronavirus pandemic may extend into August on March 16, 2020, the **U.S. Dow plummeted by nearly 3,000 points, a 13% drop and the worst drop in history** (Garber & O'Halloran, 2020). Many wealthy investors saw the moment as an opportunity to buy stocks, and ultimately, **billionaires reportedly increased their post-pandemic wealth by $434 billion by May, 2021** (Frank, 2020). For this reason, author and CNBC host, Jim Cramer, described the pandemic as "**one of the greatest wealth transfers in history**" (Clifford, 2020). By the time US COVID deaths approached half a million in early 2021, the **wealth of the 664 American billionaires increased 44% by $1.3 trillion to $3 trillion** since March, 2020 (Collins, 2021). According to a 2020 report by the Brookings (2021) Institute titled, "The Future of the Middle Class", between 1979-2017, **household income for the top 20% grew 111%, the bottom 20% grew 86%, all while the middle-class grew by only 49%.** The report defines the middle class as diverse, consisting of 59% white, 12% black, 18% Hispanic, and 6% Asian. Even before the pandemic, a staggering wealth gap existed between the wealth of white families and the wealth of black families. According to a February, 2020	According to a post-COVID analysis of 25,000 individuals with plans to attend college found that community college low-income students are the most likely to cancel plans for college, further widening equity gaps. In fact, **community college students are twice as likely to cancel college plans than university students** (Belfield & Brock, 2020)**. 40% of those surveyed cite job loss as a major factor for changing educational plans. 35% cited being a single parent.** Osborne (2020) surveyed 8,756 community college students in North Carolina. The study indicated that only **2% or 174 students planned to withdraw due to the pandemic, however 45% of those students identified as Black or African American**. Black or African American students also made up nearly half of those without internet access at home. **While only 1% of those surveyed indicated that they tested positive for coronavirus, 28% of those students were Hispanic or Latino**. The inequities experienced by minority students are highlighted throughout the report.	During a White House Briefing on January 22, 2021, the new Biden Administration acknowledged that **poverty, hunger, and housing insecurity disproportionately impact minority populations, as a result of "pervasive systemic racism".** According to the report, unemployment for Black workers stands at 10%, while unemployment for Latino workers stands at 9% (White House Briefing, 2021). On day 1, President Biden signed executive orders to promote racial equity, revising immigration enforcement policies and requiring undocumented immigrants be included in the census. On day 2, President Biden signed executive orders to establish a COVID-19 Health Equity Task force. On day 3, President Biden signed executive orders to assist Veterans with debt. Equity is defined by the Biden administration as follows: "the consistent and systematic fair, just, and impartial treatment of all individuals, including those who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and other Native American persons, Asian Americans, and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ) persons; persons with disabilities; persons who live in rural areas; and persons overwise adversely affected by persistent poverty or inequality. https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

	report by the Brookings Institute, the average net worth of a black family, was $17,150, compared to the net worth of a white family ($171,000), nearly ten times the wealth (Brookings Institute, 2020).	According to the National College Attainment Network (NCAN) (DeBaun, 2020), an estimated **250,000 low-income students will not return for the 2020-2021 school year**, based on an analysis of the Free Application for Student Aid (FASFAs). FASFA completions, by high-school seniors are also down by 2.6 percent, which represents a decline of 50,000 (DeBaun, 2020). A recent study published by Education Trust and the Global Strategy Group reported that **77% of undergraduate students are worried about staying on track to graduate, with 84% of black students and 81% of Latino students expressing concern** (Global Strategy Group, 2020). For this reason, enrollment was predicted to drop significantly at higher education institutions nationwide. The Hope Center (2020a) report surveyed 38,602 students and found the **white/black gap for basic needs insecurity was 19%.**	
13 CLIMATE ACTION "Adults keep saying, "we owe it to the young people to give them hope. I don't want you to be	2020 was a year for setting climate change records. For example, 2020 was the second hottest year on record, behind 2016 (NASA Goodard Institute for Space Studies, 2020). According to researchers, the **economic cost of climate change, including heat waves, wildfires, droughts, and floods, costs American taxpayers 100 Billion dollars in 2020 alone** (NOAA, 2020).	Opportunities exist for installing new electric vehicle chargers and for scientists to innovate new technology and engineers to design them. Community colleges can take on this challenge by training for these jobs and leading through action on their campuses.	The Biden Administration is focused on climate change as a national security priority, along with environmental justice, promoting green jobs, and bringing a government-wide science-centered approach. On Earth Day, 2021, the Biden Administration plans to participate in the Climate Summit. On day 1, President Biden signed an executive order rejoining the Paris Agreement on climate change, refocusing on the climate crisis. Climate is tied directly to millions of good paying union jobs in key industries,

hopeful. I want you to panic. I want you to act as if your house is on fire, because it is" -Greta Thunberg	America experienced 22-billion-dollar weather and climate-related disasters including: 10 severe weather events $27B 3 tornado outbreaks cost $7B 4 tropical cyclones cost $40B **4 million acres in the West were burned totaling $16B** and In April alone, 140+ tornados surfaced from Texas to Maryland (NOAA, 2020). America taxpayers can no longer afford to ignore the climate crisis. A 2017 study of warming at military sites since 1950 warned that climate change is **one of the greatest threats to national security** in the southwest and northeast (Climate Central, 2020). Significant support for climate action does exist. Not surprisingly, the support is stronger with younger generations. According to a survey of over 1.2 million respondents, the threat of climate change varies depending on age. For example, of those surveyed **under 18 years of age, 70% agree that climate is a global emergency compared to only 58% over 60**. Overall, on average, 64% agree that climate change is a global emergency. (The People's Climate Vote, 2020) The **Doomsday Clock is set at 100 seconds to midnight**, warning of a global risk of human-caused catastrophe and apocalypse. Evidence of climate change includes over **5000 acres burned in the West, more hurricanes, historic flood, and severe droughts**. DOD reports that climate change is a direct threat to 66% of the military's critical military installations. Poor air quality from pollution increases		such as manufacturing and agriculture in Biden's legislation. (1/27).

	risk to COVID-19. "We need a unified national response to the climate crisis."		
16 PEACE, JUSTICE AND STRONG INSTITUTIONS "Freedom is never more than one generation away from extinction. We didn't pass it on to our children in the blood stream. It must be fought for, protected, and handed on to them to do the same, or one day we will spend out sunset years telling our children and our children's children what it was like in the United States when men were free". -Ronald Reagan "The World is a dangerous place to live; not because of the people who are evil, but because of the people who don't do anything about it" - Albert Einstein	As if the pandemic were not wicked enough, nationwide protests for racial justice erupted over the tragic death of George Floyd at the hands of an officer of the Minneapolis Police Department. According to the *Guardian*, his death was originally a result of Floyd attempting to use a $20 counterfeit bill. Officers used excessive force, leading to Floyd's death (Hertel, 2020). As a result, mid-pandemic **hundreds of thousands of protestors marched in the streets of the top 25 U.S. cities most impacted by Coronavirus** (Smith & Forster, 2020). According to the Armed Conflict Location & Event Data Project, 93% of the Black Lives Matter protests were peaceful (ACLED, 2021). The Anti-Defamation League (ADL) has documented campaigns promoting disinformation with the goal of **"deliberate mischaracterization of groups or movements [involved in the protests], such as portraying activists who support Black Lives Matter as violent extremists or claiming that antifa is a terrorist organization coordinated or manipulated by nebulous external forces"** (ADL, 2020). Similarly, a March, 2021 memo titled, "National Capital Region Remains Attractive Target for Domestic Violent Extremists" from the Department of Homeland Security and the FBI warned that extremists may "exploit public gatherings either formally organized or spontaneous to engage in violence" (Aisley, 2021, para 2). On January 6, 2021, insurrectionists stormed the Capitol in Washington DC to	"Community colleges serve students who have been the most excluded from participatory democracy and political decision making" (Association of American of Colleges and Universities, 2020), "including first-generation students, students from underserved racial and ethnic groups, and students from lower socioeconomic backgrounds" (Robinson, 2020, para 2)who experience the "civic empowerment gap" (Levinson 2010) that prevents these groups from engaging in civic learning and investing in change through participatory democracy. Robinson (2020) acknowledges the "unrest afflicting communities, apathy plaguing politics, and insecurity permeating the economy, community colleges must revitalize their long-standing commitment to aligning citizenship development with workforce readiness". Additionally, she emphasizes, "this is even more essential given the changes affecting higher education as a result of COVID-19. It is time for democracy's colleges to reaffirm their role of educating for democracy" (para 5). According to Robinson (2020), several colleges are confronting	The Biden Administration is tackling white supremacy as a top national security threat. Day 1, Biden signed an executive order to end the travel ban from majority-Muslim countries and pulled funds from the border wall. January, 2021- a U.S. intelligence bulletin warned of more attacks stating, "the violent breach of the U.S. Capitol Building is very likely part of an ongoing trend in which [extremist] exploit lawful protests, rallies, and demonstrations…" January, 2021- the U.S Department of Homeland Security issued an alert warning of ongoing threats of domestic terrorism after the January 6th insurrection. https://www.federalregister.gov/presidential-documents/executive-orders/joe-biden/2021

attempt to stop the certification vote for Joe Biden's Presidency. In an effort to hold the insurrectionists accountable, federal prosecutors **have charged 300 people, arrested 280, and have open files on 540 individuals. Additionally, more than 200,000 digital tips were received.** According to NPR, nearly 20% of the defendants charged with this action are military veterans (Hymes, McDonald & Watson, 2021).

Unfortunately, 8 congressional members, dozens of Washington D.C. police officers, and more that **150 National Guard members have tested positive for COVID-19 since the insurrection.** (Carrismo, 2021).

According to Forensic psychiatrist, Bandy X. Lee, the insurrectionists may, at least partially, have been driven by followership (Lewis, 2021).   She explains, followership and violence are often caused by **societal stress and socioeconomic deprivation**. She also calls for a deeper focus on fixing the socioeconomic conditions that contributed to poor mental health in the first place. Additionally, she explains that future insurrection attempts can be avoided through a focus on prevention because **"structural violence, or inequality, is the most potent stimulant of behavioral violence. And reducing inequality in all forms – economic, social, and gender – will help toward preventing violence".** (para 13). Interestingly, **a Washington Post analysis of public records of 125 insurrectionists from the Capitol attack, approximately 60% have a documented record of financial issues, including bankruptcy, eviction or foreclosure, bad debt, or unpaid taxes**

wicked problems, which are defined as issues difficult or impossible to solve. In these colleges, wicked problems are integrated into various programs of study, such as communications, culinary art, and sociology, through problem-based learning.

The scholar agrees that, wicked problems underpin the seventeen United Nations Sustainable Development Goals (SDGs), which are a unified global framework for world problems found in all countries (United Nations, n.d.).

Finally, Robinson emphasizes that many of the issues, such as poverty and climate change, resonate with college students, especially Generation Z students passionate to create social change (Seemiller & Grace 2018).

President Alex Johnson of Cuyahoga Community College advocates for strengthening voting rights and democracy for community college students by empowering new voters and civic experiences. He also suggested community colleges "harness the collective energy around non-partisan voting efforts" (Parham, M., para 8, 2020).

	during the past 20 years. Collectively, the group's rate of bankruptcy is twice as high as the average American. Additionally, 25% were sued by a creditor and 20% faced losing their home. The insurrection and issues of poverty are examples of multiple wicked problems being interconnected with one another (Frankel, 2021). Unfortunately, hate crimes are also on the rise. According to a study by Asian American Pacific Islander (AAPI) (2021), **anti-Asian hate incidents have increased 1900% since the beginning of the pandemic. The 2,808 reported incidents are reported across 47 states, as well as the District of Columbia**. Sadly, 7.3% of the accounts involved Asians over 60 years old (Turton (2021). The US Constitution, a 7,500-word rule book established 233 years ago, is considered a blueprint for the basic rights of Americans. Jeffrey Rosen, a constitutional law expert, warns that we are in a "crisis of civic education". In fact, **60% of Americans couldn't pass the civics test that immigrants must pass in order to be naturalized citizens,** according to a 2019 survey by the Institute for Citizens and Scholars. This is quite worrying for Rosen, who explains that "**without constitutional education, the republic will collapse"** (CBS, 2021).		

APPENDIX P: RESOURCES – PROMOTING US ENTREPRENEURIAL SDGs

Organization	Other Info
Bloomberg Philanthropies – Mayor's Challenge	(Bloomberg Cities Network, n.d)
Catalyst2030	(Catalyst 2030, 2020a) (McKinsey & Company, Ashoka, Catalyst 2030, Echoing Green, Schwab Foundation & the Skoll Foundation, 2021) (Catalyst 2030, 2020b) (Ashoka et al., 2020)
European Union	(Bacigalupo, Kampylis, Punie, & Van den Brande, 2016)
United National Association of the USA	(UN Association, 2019)
International Sustainable Campus Network (ISCN)	(ISCN, 2019)
QAA	(QAA, 2018)
Columbia University	(Blank, 2020)
Association to Advance Collegiate Schools of Business (AACSB)	(AACSB, 2020a) (AACSB, 2020b) (Miotto, Blanco-González, & Díez-Martín, 2020)
UNESCO	(UNESCO, 2019) (UNESCO Bangkok, 2017) (UNESCO, 2020) (UNESCO, UNESCO Institute for Statistics, Technical Cooperation Group, & Sustainable Development Goals, 2019)
National Association of Community College Entrepreneurship (NACCE)	(NACCE, 2020, 2021)
Opportunity America	(Opportunity America, 2020)
Global Taskforce of Local and Regional Governments	(Global Taskforce, UN Habitat & UNDP. 2015)
Principles for Responsible Management Education (PRME)	(Wersun et al., 2020)
Local2030 – Localizing the SDGs	(Local 2030, 2020)
The Partnering Initiative	(UNDESA. 2020).
Price Waterhouse Cooper (PWC) "PWC will be the lead knowledge partner to the World Economic Forum's initiative on how and where emerging technologies could tackle some of the world's most pressing environmental, economic, and social challenges, under the umbrella of the 2030 Agenda for Sustainable Development, and the accompanying 17 Sustainable Development Goals. This will include how to accelerate and scale 4IR for Global Goals as we embark on the decade of action to 2030."	(Price Waterhouse Cooper, 2020)
NESTA – The Govt Lab	(Ryan, Gambrell & Noveck, 2020)
Brookings Institute – Center for Sustainable Development at Brookings	(Brookings & UN Foundation. (2020)

	(Pipa, Bouchet & Rasmussen, 2020)
	(The 17 Rooms Secretariat, 2020)
Sustainable Development Solutions Network	(Sustainable Development Solutions Network, 2019)
	(Sustainable Development Solutions Network, 2020)
STARTUSUP	(Start Us Up, 2019)
	(Start Us Up, 2020)
Center for American Entrepreneurship	(Center for American Entrepreneurship, 2021)
World Economic Forum	(World Economic Forum Reports, 2019, 2020a, 2020c, 2020c, 2020d)
Right to Start	(Right to Start, 2020)
United States Association for Small Business and Entrepreneurship (USASBE)	(USASBE, 2021)
NC State University	(NC State University, 2020)
George Washington University	(ICSB, 2021)
Entrepreneurial Learning Initiative (ELI)	(Entrepreneurial Learning Initiative, 2021)
Other Relevant Guides, Reports & Tools	(Civics Project Guide Book 2018)
	(SSIR Editors, (2020)
	(Wrigley, Mosely & Tomitsch, 2018)
	(We Forum, 2021)
	(Greco & De Jong, 2017)
	(Brouwer, Woodhill, Hemmati, Verhoosel, & van Vugt, 2015)
	(Fuessel, 2021)
	(UN Department of Economic and Social Affairs, 2020).

APPENDIX Q: COLLABORATIVE PROGRAMS FOR WICKED PROBLEMS

Wicked Labs	The organization supports changemakers who aim to address wicked problems using complexity-informed education and an online tool. The online tool is used to map, track, and measure systemic impact, while the educational component focuses on training for complex systems leadership. Additionally, the organization offers a systemic innovation lab to address wicked problems through a multi-stakeholder, systemic design process.	(Wicked Lab, 2021)
Collaboration for Impact	The organization uses a collaborative change cycle to enable people to tackle wicked problems for large-scale impact through collaboration. Platform C is their online program designed to support changemakers aiming to address wicked problems.	(Collaboration for Impact, 2021) (Platform C, 2019)
Listen First	A collaborative movement of over 250 organizations to heal America by bridging partisan divides through dialogue and listening.	(Listen First Project, 2021).
Open IDEO	An organization with chapters in over 30 cities tackling societal wicked problems through human-centered design. Recently, the initiative launched a business pivot challenge asking, "How might businesses of all kinds rapidly adapt to support the immediate needs of the COVID-19 response and enable a more just and resilience future". The challenge engaged 1,420 participants across 71 countries, with 29,000 unique visitors, and 699 submissions. 88% of the submissions mentioned aimed to support vulnerable populations.	(OpenIDEO, 2021)
COVID Response Alliance for Social Entrepreneurship	A multi-stakeholder initiative made up of 90,000+ social entrepreneurs, 84 member alliances, impacting 1.9 billion lives. The initiative was launched in April 2020 with the goal of mobilizing support for social entrepreneurship on the COVID-19 front lines. Their 2021 roadmap proposes 21 action projects across 10 areas of action.	(World Economic Forum, 2021a, 2020c)
Rural Rise	The multi-stakeholder initiative aims to "increase opportunities and prosperity in rural communities across America. In 2018, 170 community leaders and ecosystem builders gathered to collaboratively address the issues of entrepreneurs in rural communities nationally. Based on the discussions, 90 new resources were uncovered and 1,400 ideas were shared. This became the foundation for the Rural Rise Initiative.	(Rural Rise, 2018, 2021)
National Entrepreneurship of Week	Each February, this non-partisan congressionally chartered initiative takes place. Initially, it was founded in 2006 but re-launched in 2016. The initiative aims to increase entrepreneurship across the United States with an emphasis on diversity, inclusion, equity, education and collaboration. The 2021 program yielded a 27.9 million reach online, representing growth of 1034%.	(National Entrepreneurship Week, 2021) (Authenticated US Government Information, 2006)
Kauffman ESHIP	The annual program was designed based on the feedback of over 800 ecosystem-builders who attended the first two events. The ESHIP goals are a framework of collective objectives that are pursued each year and include: promoting an inclusive field, creating a collaborative culture, building a shared vision, leveraging practical metrics and methods, gaining universal support and focusing on sustainable work. As of 2020, more than 70 national resource providers supporting ecosystem builders have participated in the ESHIP program.	(Kaufmann, 2020)
Venture Catalyst Network/ Oregon Entrepreneurs Network/	The Venture Catalyst Network is an entrepreneur-led, community-oriented approach which is designed in partnership with economic development authorities. The	(Lawrence, Hogan & Brown, 2020) (RAIN Oregon, 2019)

RAIN Oregon	initiative is designed to strengthen the entrepreneurial ecosystem through providing technical assistance, facilitating resource connections and developing ecosystem. A related program, RAIN Oregon (2019) assisted 319 startups, helped create 386 jobs, with 27 pre-accelerator graduates, generating 9.45 million in revenue.	
Catalyst2030	The multi-stakeholder initiative consists of 462 members in 195 countries and 4000+ collaborators from 1600+ organizations across 131 countries. The group's overarching goal is to achieve the 2030 Sustainable Development Goals by mobilizing cross-sector collaboration, including social entrepreneurs, partners, and resources for global systems change.	(Catalyst2030, 2020a, 2020b)
Center for Cooperative Problem-Solving at Virginia Tech	The program leverages KAI Certification Course, which "covers aspects of problem-solving and creativity as it relates to the individual, working in teams, and leading change. KAI is based on Adaption-Innovation (A-I) theory, which is the only known theory able to explain how a measurable characteristic of an individual's personality (problem-solving style) is connected to the science of teams and preferences for leading change".	(Center for Cooperative Problem-Solving, 2021).
The Governance Lab (GovLab) – New York University	The program focuses on strengthening the abilities of institutions to collaborate to address complex public problems through education and research promoting open strategies, including collective intelligence strategies, as well as new technology. The challenges are approached through interdisciplinary, network-building and data-driven methods "irrespective of the problem, sector, geography, and level of government". The organization also trains entrepreneurs to tackle public interest challenges through training, guiding the participant from idea to implementation.	(GovLab, 2021).
Institute for Innovation and Public Purpose (IIPP, 2021)– University of College London (UCL)	The program, led by Mariana Mazzucato, aims to change "how public value is imagined, practiced, and evaluated to tackle societal challenges" through education, research, multi-stakeholder collaboration, and public civic engagement. IIPP's interdisciplinary research "tackles the complex relationships between economic, technological and social changes, covering four cross-cutting pillars of inquiry. The pillars include rethinking value, directing finance, shaping innovation, and transforming institutions to be more purpose-driven". According to the program's website, the team "worked closely with the United Nations to create an innovation roadmap for the sustainable development goals".	(IIPP, 2021)
International Economic Development Council (IEDC) – Online Training Course- Introduction to Entrepreneurship-Led Economic Development	According to the IEDC website, the "course focuses on building an understanding of the importance of building a community centered around entrepreneurship and small business creation, sustainability and growth. After taking the course, course participants will be able to identify their role in the ecosystem, understand the roles of others and come away with the skills to bring organizations together around shared goals. Additionally, they will learn important skills such as assessing a community's appetite for risk, identify resource gaps, understanding the importance of inclusion, and develop practical ways to measure success."	(IEDC, 2021)

ENTREPRENEURIAL PROGRAMMING FOR WICKED PROBLEMS

Prison Entrepreneurship Program	PEP is an innovative program that connects the nation's top executives, entrepreneurs, and MBA students with convicted felons. The program provides an entrepreneurship boot camp and re-entry program, which offers proven solutions for preventing recidivism, maximizing self-sufficiency and transforming broken lives.	(Prison Entrepreneurship Program, 2012)
Entrepreneurial Learning Initiative	ELI is a leading organization for instilling entrepreneurial mindsets across the globe through keynotes, facilitator training, workshops, and consulting. The scalable programming is designed for K-12, higher education, small businesses, economic development, corrections, non-profit, and corporations. According to ELI, the Entrepreneurial Mindset Theory supports a humanistic view of entrepreneurship - one that affirms the ability of ordinary people to think critically and creatively, individually and collectively, to rise above their circumstances, to solve problems, and to better their world. Entrepreneurial Mindset Theory suggests that non- entrepreneurial behavior is learned and that, while not everyone may want to start a business, we are all born with an inherent proclivity to be innovat-*ive* and entrepreneur-*ial*; that is, we all have an innate desire to solve problems, to be engaged in work that matters, to have control over our day-to-day lives, and to see our efforts lead to a meaningful and prosperous life.	(The Entrepreneurial Learning Initiative, 2021)
EXEC Experiential Entrepreneurship Curriculum	An experiential hands-on curriculum used at over 100 universities. Assignments include idea generations, customer interviews, prototyping, and business model validation.	(EXEC, 2021)
VentureWell I-Corps Model	This initiative was originally launched by the National Science Foundation in 2011. Over 1990 teams have collectively launched 1100 startups with over 650 million dollars in follow-up funding raised.	(Venture Well, 2021)
EntreEd	The organization works to instill the entrepreneurial mindset in every student, every year, with a special focus on K-12 students and educators. Across America, the organization has designated 125+ schools as "America's Entrepreneurial Schools", across 11 states, impacting over 50,500 students.	(Entre Ed, 2021)
Aha! Process – Bridges Out of Poverty Program and Emotional Poverty (Public Problem Solving)	The organization aims to enable individuals, institutions, and communities to stabilize and grow resources for all, particularly those in poverty. The programs involve evidence-based on-demand professional development, in-person workshops, and research with a focus on addressing root causes of poverty-related issues.	(Aha! Process, 2021)
Hope Center for College, Community, and Justice (Public Problem Solving)	The organization was originally launched in 2013 as the Wisconsin HOPE Lab in response to a need to address student access and completion, particularly for those impacted by racial disparities and other inequalities. Hope Center for College, Community, and Justice website states, "projects have a three-part life cycle. First, using rigorous research, we develop and evaluate creative approaches to solving challenges of practice, policy, and public perception. Second, our scientists work closely with thinkers and doers to ensure that effective implementations are enacted and scaled. Third, we spur systemic change by igniting a fire to engage others in taking advantage of what we have learned. Maximum impact is our ultimate goal. Today, the program offers initiatives, coalitions, advocacy, and technical assistance to support the mission". In 2021, the Hope Lab launched the first three modules of the #RealCollege digital curriculum and communities of practice, which are designed to translate the Lab's evidence-based research on the barriers and needs of college students to actionable strategies for educators, policymakers, advocates, and students. The curriculum launch was supported by the Bill & Melinda Gates Foundation, along with Gates Philanthropy with a seed grant for the first three modules.	(Hope Center for College, Community, and Justice, 2021)

APPENDIX R: ENTREPRENEURIAL AUDIENCES FOR COMMUNITY COLLEGES

Immigrant Entrepreneurs	• Anderson (2019) examined the top billion-dollar businesses with venture funding in the US and discovered that 50 of the original founders were from outside the US. The 50 immigrant entrepreneurs have a combined value of $248 billion and on average, have created 1200 jobs each. • According to the SBA Office of Advocacy (2016) in 2012, approximately 14% of US small businesses were minority immigrants. A majority reside in accommodation, food service (29%), transportation, and warehousing (27.5%).	(Anderson, 2019). (SBA Office of Advocacy, 2016)
Hispanic Entrepreneurs	• The United States Hispanic Chamber of Commerce (2021), representing 4.37 million Hispanic businesses, estimates they contribute $700 billion annually to the American economy • According to the Stanford Graduate School of Business and the Latino Business Action Network report (2019) titled, "State of Latino Entrepreneurship", of the $700 billion, $500 billion comes from small Latino businesses. • Stanford Graduate School of Business and Latino Business Action Network (2020) estimated 86% of Latino entrepreneurs experienced a significantly negative impact on their business as a result of COVID. • Aspen Institute (2021) reported that the opportunity gap is 1.38 billion, due to economic and institutional barriers faced by Hispanic entrepreneurs. • According to Mathema (2017) if Dreamers were forced to leave the United States, the reduction in economic growth over the next decade is estimated at $433 billion. • According to the SBA Office of Advocacy (2016) *in 2012 approximately 12% of small businesses were Hispanic owned.*	(United States Hispanic Chamber of Commerce, 2021) (Stanford Graduate School of Business, & Latino Business Action Network, 2019). (Stanford Graduate School of Business and Latino Business Action Network, 2020) (Asper Institute, 2021) (Mathema, 2017) (SBA Office of Advocacy, 2016)
Senior Entrepreneurship (Boomerpreneurs)	• Isele and Rogoff (2014) found adults 50+ are among the most entrepreneurial of all age segments. • According to Guidant Financial (2021), half of all entrepreneurs were 50+ • Badal and Ott (2015) stated that of 2000 baby boomers surveyed in the United States, an astounding 83% listed the reason for launching a business as a lifestyle choice or to increase income. Other reasons were the ability to be more independent (32%), pursue passions (27%), and increase income (24%). Less than 10% desire to address a major problem or fill an unmet need. • In March 2017, Schiavone and Lynch (2017) published a report indicating that nearly half of working adults in American are not confident they've saved enough to retire.	(Isele & Rogoff, 2014) (Guidant Financial, 2021) (Badal & Ott, 2015) (Schiavone & Lynch, 2017)
Mom Entrepreneurs Women-Owned	• According to the SBA Office of Advocacy (2016), of the 12.3 million small businesses, approximately 50% were women-owned in 2012.	(SBA Office of Advocacy, 2016)

Rural Digital Entrepreneurship	• According to a report from US C_TEC and Amazon (2019), unlocking the digital potential for rural small businesses, would provide significant economic growth, including (see report for state by state breakdown). • Digital tools, such as (cloud computing, digital marketing, and e-commerce) enable rural small business owners to reach new customers: (59.3) within the community, (54%) within the state/outside of the community, (36%) across America, (35%) in neighboring states, (12%) in countries outside of the United States. Additionally, digital tools in rural America are estimated to increase sales by between 22% and 30%.	(US C_TEC, & Amazon, 2019)
Tourism Entrepreneurship	• According to Daniel, Costa, Pita and Costa (2017), tourism is one of the fastest growing economic sectors in the US, contributing 4.1% of US GDP, 5.9% of employment, and 21.3% of service exports. • Scholars recently proposed new tourism entrepreneurial curriculum, infused with design-thinking	(Daniel, Costa, Pita & Costa, 2017)
Minority Entrepreneurship	• According to the SBA Office of Advocacy (2016), in 2012 approximately 1/3 of US small businesses were minority owned. • While recovering from the great recession, the Center for Global Policy Solutions published a report titled, "The Color of Entrepreneurship: Why the Racial Gap among Firms Costs the U.S. Billions". According to the report, minority small business-owned firms contributed nearly 1.3M jobs between 2007 and 2012 in America. However, the researchers estimated 1.1M minority-owned businesses were forgone, due to issues surrounding discrimination. • These businesses could have produced 9M additional jobs, boosting our national GDP by $300B (Austin, 2016). • According to the Kauffman Foundation (2017), addressing the entrepreneurship diversity gap, meaning if minorities started businesses at the same rate of non-minorities, would lead to more than 1 million additional employer businesses and up to 9.5 million jobs. • According to Turner (2018), "Entrepreneurship is also a path to increased economic opportunity within communities of color. Reports indicate that entrepreneurs of color find unique challenges that limit the growth, scalability, and sustainability of their businesses — lack of access to favorable credit terms, funding, investors, and marketplace opportunities. On multiple levels, from innovation to jobs to financial security to developing resilient economies, cultivating job skills and entrepreneurship within communities of color makes strong economic sense".	(SBA Office of Advocacy, 2016) (Kaufmann Foundation, 2017) (Turner, 2018) (Austin, 2016)
Prison Entrepreneurship	• Some promising research exists on the effectiveness of prison entrepreneurship programs in decreasing recidivism, increasing employment, increasing home ownership, and increasing savings. According to Couloute and Kopf (2018) the unemployment rate of formerly incarcerated individuals was 27% on average before the pandemic, which was already five times the average rate of unemployment for the average population in	(Couloute & Kopf, 2018) (Johnson, 2013) (Foundation for Economic Education, 1985) (Nijhuis & Eberhardt, 2021).

	America. Notably, the average unemployment rate varies by race and gender: 43.6% for black women, 35.2% for black men, 23.2% for white women, and 18.4% for white men. • According to Johnson (2013), an examination of 94 graduates who completed the Prison Entrepreneurship Program in Texas revealed a 6.9% recidivism rate, compared to the control group's recidivism rate of 24%. This saved the state $447,621 in incarceration costs in the first year, with $343,823 annually in the following years. Additionally, the graduates contributed more than $9,000 each year in tax revenue, with an average annual tax contribution of $441,908. An estimated $72,601 in annual child support payments were contributed. The traditional employment rate of the program is 100%. Total projected positive impact annually was estimated at over a million dollars. Common industries for formerly incarcerated individuals include transportation, facilities, construction, retail trade, and landscaping. • Michael Porter's Harvard University Initiative for a Competitive Inner City (ICIC) published a report on the outcomes of the Prison Entrepreneurship Program (Nijhuis & Eberhardt, 2021). According to the report, PEP resulted in the following impacts on the participants, graduates, the State of Texas and the federal government: 7% 3-year recidivism rate • 100% employed in 90 days • 361 businesses started (now over 500) • $17.17 - $21.19 average hourly wage for graduates • $46.3M total annual income; $67.1M total annual value added; $122.5M total annual output = Texas economic impacts • $4.3M savings to state and federal government (2017) • ROIs: 159%/1 year; 754%/5 years • In one report, several prison entrepreneurship programs are compared (Nijhuis & Eberhardt, 2021).	(Determination Incorporated, 2021)
Entrepreneurial Exporting/ Economic Base	• According to economic base theory, any local economy may be divided into basic and non-basic industries. The theory also suggests that economic growth depends on sectors that export goods and services out of the region (basic industries), as opposed to those businesses whose services remain local, (non-basic industries). • Basic industries promote local economic growth by bringing jobs and income into the local economy. Non-basic industries serve local residents and provide support to basic industries. In 2014, Albuquerque, basic industries consisted of: 9937 jobs in information, 14,324 in federal government employment/civilian jobs, 5,640 military jobs totaling 19,964 jobs, and state government employment of 26,702 jobs.	(The Office of Policy Analysis at Arrowhead Center & New Mexico State University, 2016).
Life-Science/Tech Entrepreneurship/ Commercialization	• The Community College Innovation Challenge is an initiative of the American Association of Community Colleges in partnership with the National Science Foundation. The competition aims to encourage STEM and entrepreneurial problem-solving to promote solutions to real-world problems. I-Corps methods are leveraged to teach STEM commercialization.	(AACCinnovationchallenge.com, 2021)
Veteran Entrepreneurs	• According to the SBA Office of Advocacy (2016), in 2012 approximately 9.3%, or 440,000 US small businesses, were veteran owned.	(SBA Office of Advocacy, 2016)

APPENDIX S: FUNDERS AND RECIPIENTS FOR SDG#4-RELATED WORK

The SDG Funders dashboard (sdgfunders.org) provides the most comprehensive data on philanthropic support aligned with the SDGs. SDGfunders.org website is part of the SDG Philanthropy Platform initiative, which was created by Candid (formally Foundation Center) and was funded by Conrad N. Hilton Foundation, Ford Foundations, and the Mastercard Foundation. The share of total foundation SDG funding for 2016+ in SDG#4 (Education) is $81,559,309,594.

TOP 25 - FOUNDATIONS

1.	Gothic Corporation	$3.41 B
2.	Fidelity Charitable Gift Fund	$3.04 B
3.	Bill & Melinda Gates Foundation	$1.59 B
4.	Silicon Valley Community Foundation	$1.36 B
5.	Florida Clinical Practice Association, Inc.	$1.32 B
6.	National Collegiate Athletic Association	$1.17 B
7.	Ucla Foundation	$837.12 M
8.	Walton Family Foundation	$756.01 M
9.	Schwab Charitable	$623.69 M
10.	Educational Credit Management Corporation	$563.46 M
11.	Kansas University Endowment Association	$534.37 M
12.	Atlantic Coast Conference	$515.70 M
13.	Wells Fargo Foundation	$490.16 M
14.	Lilly Endowment Inc.	$460.93 M
15.	University of Florida Jacksonville Physicians	$447.15 M
16.	The Andrew W. Mellon Foundation	$427.15 M
17.	University of Minnesota Foundation	$423.75 M
18.	University of Colorado Foundation	$412.01 M
19.	Big Ten Conference	$407.49 M
20.	University of Illinois Foundation	$393.59 M
21.	Big 12 Conference - Oklahoma State	$381.46 M
22.	University of California At Berkeley Foundation	$380.72 M
23.	W.K. Kellogg Foundation	$364.18 M
24.	National Christian Charitable Foundation, Inc.	$360.24 M
25.	University of Oklahoma Foundation	$359.42 M

TOP 25 - RECIPIENTS

1.	Duke University	$3.79 B
2.	University of Florida	$1.65 B
3.	University of California, Los Angeles	$991.74 M
4.	President and Fellows of Harvard College	$904.72 M
5.	University of California At Berkeley	$654.34 M
6.	Massachusetts Institute of Technology	$614.79 M
7.	University of Wisconsin – Madison	$607.12 M
8.	University of Minnesota	$594.31 M
9.	Stanford University	$569.27 M
10.	Ecmc Group, Inc.	$563.00 M
11.	The University of Kansas	$505.76 M
12.	Columbia University	$481.27 M
13.	University of Florida	$464.52 M
14.	University of Iowa	$463.80 M
15.	Yale University	$436.13 M
16.	University of Illinois	$401.94 M
17.	University of Virginia	$369.81 M
18.	Regents of the University of Michigan	$351.62 M
19.	University of Pennsylvania	$342.07 M
20.	University of Chicago	$337.33 M
21.	University of Louisville	$336.63 M
22.	Regents of the University of Colorado	$310.38 M
23.	University of California, Irvine	$306.12 M
24.	University of Washington Foundation	$302.78 M
25.	Regents of the University of California Systemwide	$300.41 M

****Overlap between foundation funding for SDG 4 and other goals in Nortn America:
- SDG#3 (Health) 42,000+ in grant funding comprised of over $4 Billion
- SDG#4 (Education) 45,000+ in grant funding comprised of over $1.29 Billion
- SDG#7 (Economic Growth) 14,800+ in grant funding comprised of over $1.4 Billion
- SDG#8 (Industry and Infrastructure) 20,600+ in grant funding comprised of over $2.3 Billion
- SDG#10 (Sustainable Cities) 8,800+ in grant funding comprised of over $487 Million
- SDG#16 (Peace and Justice) 31,900+ in grant funding comprised of over $1.2 Billion

****Distribution of foundation funding by population for SDG 4 and other goals in North America:
Children & Youth- Nearly 450,000 Grants totaling $20B
Women & Girls – 45,000+ Grants totaling $1.2B
LGBTQ – 11,000+ Grants totaling $116M
Disabilities – 30,500 Grants totaling $897M

VITA

Samantha B. Steidle, PhD, MBA
Collaborative Catalyst Driven by Positive Societal Impact

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OBJECTIVES

- **A purpose-driven leader** passionate about addressing a broad range of economic, social, and environmental barriers impacting community college students, their communities, and academic institutions for the future of work
- **Seeking an opportunity to support America's post-pandemic recovery** through leading a portfolio of special projects related to scalable education, programs, and partnerships across the community college ecosystem

COMPETENCIES

Entrepreneurial Philanthropy	Multi-Stakeholder Collaboration	Thought Leadership	Sustainable Development Goals
Research & Development	Community College Entrepreneurship	Systemic Social Entrepreneurship	Diversity, Equity & Inclusion
Online Program Creation	Business Model Innovation	Challenge Competitions	Civic Engagement	Design Thinking

EDUCATION

PhD — Community College Leadership, Old Dominion University — May 2021
› Dissertation: "Exploring the Role(s) of Community Colleges in Addressing Wicked Problems Through Multi-Stakeholder Collaboration: An Entrepreneurial Approach to Sustainability (SDGs)"
› Honors: Graduated Cum Laude

MBA — University of Wisconsin - Eau Claire — May 2010

BBA — Accounting, Radford University — May 2004

INTELLECTUAL CONTRIBUTIONS

- Steidle, S.B., "Venture Lab - 2021-2025 Strategic Plan", Radford University — 2020
- Corbin, R.C., Kapp, J., Masih, R. & Steidle, S.B. (2019) "Addressing the Opioid Crisis Appalachia: An Entrepreneurial Approach to Prevention, Treatment, Recovery & Workforce", NACCE — 2019
- Steidle, S.B (2019) "The Future of Work is Entrepreneurial", Roanoke Times — 2019
- Steidle, S.B. (2018) "10 Tips for Launching an Entrepreneurial Space", NACCE Quarterly Publication — 2018

PROFESSIONAL ACHIEVEMENTS

- Launched National NACCE Course – Available to 340+ Community Colleges and 2000 Members — 2019
- Co-Launched RAMP Life-Science & Technology Accelerator, which Served 24 Tech Startups by 2020 — 2017
- Launched CoLab Coworking Space – Serving 175+ Entrepreneurial Members in Roanoke, Virginia — 2014
- Developed ODU Graduate-Level Course for Entrepreneurship in Higher Education — 2017

PROFESSIONAL EXPERIENCE

- Dabney Lancaster Community College — July 2021
  - Entrepreneurial Changemaking 101 – Designed & Taught as Adjunct

- National Association of Community College Entrepreneurship — 2018-2021
  - Online Course Designer - Community Colleges as Incubators of Innovation
  - Lead Researcher - The Opioid Crisis & Community College Entrepreneurship

- Virginia Western Community College, Roanoke, Virginia — 2012-2020
  - Adjunct Instructor
    - Entrepreneurial Mindset & STEM Commercialization Workshop
    - Gig-Economy - 8-Session Workforce Course
  - Institutional Advancement/Foundation
    - Grant PI - Building Entrepreneurial Economies $40,000 (State Grant) - Lean Startup
    - Grant PI - Building Entrepreneurial Economies $40,000 (State Grant)
    - Co-Launched - Regional Accelerator & Mentoring Program (RAMP)
  - Workforce Development
    - Innovation Officer
    - Co-Designed Business Model for Virginia Western's FabLab
  - Academic Faculty
    - Business Instructor - Full-Time – Entrepreneurship, Intro to Marketing, Small Business Management, Introduction to Small Business Management, Online Marketing

- Virtual Marketing, Roanoke, Virginia — 2011-2016
  - Represented Radford University's Graduate Programs – Online Marketing
  - Launched Roanoke Business Lounge Coworking Space
  - Co-Launched and Led CoLab Coworking Space (175 Members & 15 Brand Ambassadors)

CONFERENCE PRESENTATIONS & GUEST LECTURING

- International Council on Small Business (ICSB) - National Conference — 2020
- Kauffman ESHIP - National Conference — 2020
- National Association of Community College Entrepreneurship (NACCE) – National Conference — 2019
- National Association of Community College Entrepreneurship (NACCE) – National Conference — 2018
- University Economic Development Association (UEDA) – National Conference — 2018
- Roanoke City Mayor's Summit – "Gig-Economy: The Future of Work" – Local Conference — 2017
- Botetourt Chamber of Commerce – "Gig-Economy: The Employers Perspective" – Local Conference — 2017
- SCHEV Conference - "Partnering for Progress" Poster Presentation" – Statewide Conference — 2017
- HIRE Education Conference – "How to Build a Public-Private Partnership" – Statewide Conference — 2017
- Project Management Institute (PMI) - "Ecosystem Mapping" – Regional Conference — 2017

PROFESSIONAL CERTIFICATIONS

- Diversity, Equity and Inclusion Certificate | University of South Florida — 2021
- Solving Public Problems Certificate | GovLab, New York University — 2021
- Entrepreneurial Mindset Facilitator Certification | Entrepreneurial Learning Initiative — 2017

RESEARCH INTERESTS

- Sustainable Entrepreneurship & Localizing the Sustainable Development Goals (SDGs) — 2021
- Alternative Revenue Streams for Higher Education — 2020
- Institutional Entrepreneurship – Collaborative Problem-Solving Tools — 2019
- Entrepreneurial Philanthropy (Alumni & Donors) — 2018
- The Future of Work – Workforce Predictions for Re-training Trends (AI & Automation) — 2017
- Entrepreneurial Spaces- Coworking, Acceleration, Incubation, and FabLabs — 2016

OTHER SKILLS, INTERESTS, AND TALENTS

- International Council on Small Business (ICSB) - National Conference
- Kauffman ESHIP - National Conference
- National Association of Community College Entrepreneurship (NACCE) – National Conference
- National Association of Community College Entrepreneurship (NACCE) – National Conference
- University Economic Development Association (UEDA) – National Conference
- Roanoke City Mayor's Summit – "Gig-Economy: The Future of Work" – Local Conference
- Botetourt Chamber of Commerce – "Gig-Economy: The Employers Perspective" – Local Conference
- SCHEV Conference - "Partnering for Progress" Poster Presentation" – Statewide Conference
- HIRE Education Conference – "How to Build a Public-Private Partnership" – Statewide Conference
- Project Management (PMI) - "Ecosystem Mapping" – Regional Conference

PROFESSIONAL DEVELOPMENT, AWARDS, AND AFFILIATIONS

- International Council of Small Businesses (ICSB) - Member — 2020-2021
- National Association of Community College Entrepreneurship (NACCE) - Member — 2016-2021
- Stanford Rebuild 8 Week Innovation Sprint - Stanford University – Professional Development — 2020
- Marion Kauffman ESHIP - Goal 5 Committee - Quantitative Methods - Member — 2019
- Roanoke Regional SBDC - Small Business Advocate of the Year - Award — 2014

COMMUNITY SERVICE

Catalyst2030
Individual Member — 2021

Catalyst 2030 is a global movement of social entrepreneurs and social innovators from all sectors who share the common goal of creating innovative, people-centric approaches to attain the Sustainable Development Goals by 2030. Joining forces with communities, governments, businesses and others, Catalyst 2030 members are changing systems at all levels through collective action and bold, new strategies.

Cabell Brand Center
Vice-President — 2015-2021

The Cabell Brand Center was established in 1987 and has inspired profound social systems change for over 27 years supporting more than 500 students to pursue educational goals focused on "promoting the common good". Endowment donated to Virginia Western Community College to support community college changemakers.

United Way of the Roanoke Valley
Board Member — 2017-2018

United Way solves the Roanoke Valley's most urgent needs by finding new solutions to age-old problems so that each of us has the best chance to a better life. Our approach is simple. We work to unite Roanoke's charitable agencies, local leaders, organizations, and municipalities to support the underserved in our community and build a better valley for all.

Junior Achievement of the Roanoke Valley
Board Member — 2014-2016

Junior achievement has impacted over 4.5 million U.S. students in more than 197,000 classrooms during 2013-2014. Our volunteer-delivered, K-12th grade programs foster work-readiness, entrepreneurship and financial literacy skills, and use experiential learning to inspire students to dream big and reach their potential.