

2018

## Virginia Technology and Engineering Education Association 1978-2018: Celebrating Six Decades of Progress

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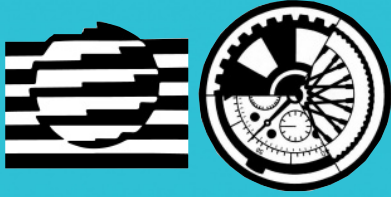
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**Celebrating Six Decades  
of Progress**



**Virginia Technology and  
Engineering Education  
Association  
1978-2018**

by

**Ron Vickers**

**Philip A. Reed, PhD**

**George R. Willcox**



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## Foreword

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Technology and engineering education in Virginia and the nation is coming to a crossroads. Recent growth in state directives, new courses, and ever-changing funding for science, technology, engineering, and mathematics (STEM) education influences the supply of Technology Education teachers, leading to what some say is a dire future for our profession and association. This history is gathered to emphasize the importance and value of what we teach in Virginia public schools. It also captures who was involved with the association leadership over the years.

Today, the primary leadership for undergraduate technology and engineering teacher education programs in Virginia is provided by Old Dominion University (ODU). Graduate programs in technology and engineering education are offered at ODU and Virginia Tech. To fill the growing demand, teachers are recruited outside Virginia.

The Virginia Department of Education (VDOE) supports Technology Education as one of the state's subject-area offerings. Discussions are being held about a separate licensure that may be required to teach pre-engineering courses. The newest trend in the field is the creation of maker-spaces. These areas of hands-on learning in subject matter common to Technology Education is largely offered in school libraries. This is thought by some to be a replacement for Technology Education when a suitable teacher is not available.

The Virginia Association of the Technology Student Association (TSA) membership continues to grow and thrive in the Commonwealth. Regional fairs happen every year in the six regions, and Technosphere, the state-level conference, continues to have ever-larger numbers attend. The Children's Engineering Convention has grown to more than 700 elementary teachers in attendance each year.

Because the nation continues to have a strong need for technologically literate citizens, Technology Education should remain a vital part of public education in the future.





## Acknowledgements

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Acknowledgment is herewith extended to the contributors of this publication for all contributions to the historical fact pertaining to the history of Technology Education in the Commonwealth of Virginia.

Special appreciation is extended to:

***The presidents of the VTEEA***, for their leadership and contribution of time, and for their service to the teachers and students of the Commonwealth of Virginia.

***Authors and contributors***, for their support and information that enable the publication of this history.

***Ron Vickers***, Technology Education teacher at Luray High School, Page County Public Schools, for his vision and hard work to ensure that the “VTEEA Historical Publication Series” continues.

***Dr. Arvid Van Dyke***, professor emeritus of the School of Integrated Sciences at James Madison University, for maintaining a visual legacy of the leadership and contributions of Technology Education pertaining to the technological literacy of Virginia’s citizens.

***Dr. Philip Reed***, professor of STEM Education and Professional studies in the Darden College of Education at Old Dominion University, for establishing a permanent repository for all significant VTEEA historical documents at the library of Old Dominion University.

***George R. Willcox***, acting director of the Office of Career, Technical, and Adult Education at the Virginia Department of Education, for his steadfast commitment to the advancement of Technology Education in the Commonwealth of Virginia. Further, for his maintenance of records associated with the contributions of Technology Education to education and the workforce.

***Kevin Reilly and Teresa Wilburn***, of the CTE Resource Center, for their work in the design, layout, and publication of the 1978-2018 VTEEA Historical Series.

***Ronald A. Williams Ltd.*** for funding the publication of the printed document.

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## Current State of VTEEA

Dear Members and Friends of the Virginia Technology and Engineering Education Association (VTEEA),

As president, I am honored to provide a report on the current state of the VTEEA. As we prepare to celebrate the association's 60th year at this summer's annual conference, I would like to express my appreciation to the members of the History Committee—Ron Vickers, Dr. Phil Reed, and George R. Willcox—who have worked diligently to bring this project to fruition. These gentlemen are examples of the quality of people serving on the VTEEA Board of Directors and without whom it would be impossible to lead the association. Kris Martini, CTE director for Arlington County Public Schools, served as conference chair.

Now, where do we stand as an organization? To begin, we have experienced some growing pains this year as we worked to plan, implement, and manage our online membership application portal. Following our 2017 conference, the Board of Directors voted to allocate funding to bring the portal to life, and a committee comprised of George R. Willcox, Terry Beddow, and Brandon Hamby endeavored to make it so. With that as our foundation, the board seized upon streamlining our conference registration process and we should begin to see the fruits of that labor as we head into the summer conference this year.

Our regional presidents have instituted professional development opportunities through their respective regional committees or in collaboration with other regional presidents. For the first time in several years, each region has a president, and only one board position remains unfilled. Committee chairpersons have been particularly engaged this year, with inroads being made in marketing, membership, elections, scholarships, awards, governmental relations, teacher and program of the year, research, resolutions, and special projects. As always, the association needs volunteers to fill committee openings, and I ask that each of you assist your region president and the Board of Directors by staffing these important committees. Additionally, the Blue Ridge Region president, Tim Axley, has been named the 2019 conference chairman. The 2019 conference will be hosted by Roanoke County Public Schools and held at the Hotel Roanoke. Mark your calendars now for July 23-25, 2019, and make plans to attend!

Through the years we have seen our membership ebb and flow, but we have always had a dedicated cadre of professional educators to keep the association intact and strong. We still have that dedication in our ranks today, but to have it for years and decades to come we must unite and promote our vision. To do that, we must renew old relationships, strengthen current relationships, and create new relationships. Let's ensure we are members of the International Technology and Engineering Educators Association (ITEEA), Virginia Technology and Engineering Educators Association (VTEEA), Virginia Children's Engineering Council (VCEC), and the Virginia Association for Career and Technical Education (Virginia ACTE). With numbers comes the greatest opportunity to increase our sphere of influence and guarantee Technology Education remains relevant to the lifelong learning process.

If you have ideas to promote the VTEEA, contact me or a member of the Board of Directors. Please visit our website [www.vteea.org](http://www.vteea.org) to contact the current board members. Each of us looks forward to hearing from you. Thank you for the opportunity to serve as president during this auspicious year in the association's life. I look forward to remaining active in our professional organizations and I hope you do as well.

Sincerely,

George D. Bishop  
President, VTEEA 2017-2018





## A Note from the History Committee Chair



The Virginia Technology and Engineering Association is now 60 years old, as of 2018.

To have been a part of the association throughout my career of 35-plus years has been a privilege. As chair, I can say I have received much more than I have given. It is good to stop and reflect on where we have been from time to time.

I have learned about my heritage by researching our events and found value in the many individuals with whom I have come into contact.

Technology Education will continue to hold great promise for all of us. The compilation of this history has been an excellent experience, and my only hope is that this publication will provide a service for Technology Education, its teachers, researchers, and other interested parties.

Ron Vickers  
2018 History Committee Chairman  
Valley Regional President 2010-2018  
VTEEA President 2009-2010





## VTEEA: Reflections and Progress

By Thomas A. Hughes Jr.

Peter Drucker, widely considered to be the world's foremost pioneer of management theory, wrote: "Nonprofit organizations are central to the quality of life in America and are its most distinguishing feature." As we proclaim this historic year, prominent thinkers like Drucker help us to see once more the importance of an organization devoted to a specific profession.

We must understand our history if we are to recognize the association's progress or milestones over these several years. Thus, we could begin by reflecting upon the world as it was in 1958:

1. It was the sixth year in the presidency of Dwight Eisenhower.
2. Nikita Khrushchev became premier of the Soviet Union.
3. American troops were sent to Lebanon.
4. The United States launched its first satellite, which was a year after Russia's Sputnik.
5. There was a worldwide economic downturn, and our country had a brief recession.
6. In the United States, cost-of-living averages include:
  - Income \$4,650
  - New house \$11,975
  - New car \$2,155
  - Gasoline 24 cents/gallon
7. Virginia's population was 3.9 million, compared to 8.4 million in 2018.
8. Virginia's newly elected governor was Lindsay Almond.
9. The politics of the Byrd Machine dominated Virginia government with a commitment to low taxes and give minimum support for education and social welfare. (The term *Byrd Machine* related to the proclaimed leader of Virginia's Democratic Party, Harry F. Byrd, U.S. senator and former governor).
10. A news article from the College of William and Mary reported: "The Industrial Arts Course at the College of William & Mary in Norfolk, under the direction of Edward J. Harford, is educating those students who will be available to relieve the shortage of Industrial Arts teachers in the city schools of Norfolk as well as to develop a source of supply for the state of Virginia as a whole." This meant five colleges would be awarding the same bachelor's degree. The others were Hampton Institute, Norfolk Division of Virginia State College, Virginia State College at Petersburg, and Virginia Tech.

The Industrial Arts program in 1958 was offered in about 75 percent of Virginia's public secondary schools. Although the founding program concepts began at the elementary level as early as 1903, by the 1950s it was seldom found below the seventh grade. Most junior high courses were introductory to several technical areas. Often it was a required 9- to 12-week experience for all male students. (Female students took home economics.)

By the ninth grade, students would have an elective, yearlong class in one subject, usually woodworking or drafting. High school featured elective-unit programs. Programs in smaller high schools would have one or two teachers and offered woodworking and drafting. It is estimated



that 20 percent of the small rural schools taught a type of general shop class in the morning and sometimes a three-hour occupational preparation class during the afternoon. Larger high schools offered a variety of subjects in facilities designed for the respective subject area (e.g., crafts, drafting, electricity or electronics, graphic arts, metalworking, woodworking or furniture making). Fifty years ago, those schools with a greater variety of programs were located mainly in the Hampton Roads area, larger cities, as well as in Arlington and Fairfax counties. Virginia Beach, the state's largest city today, had one high school with one teacher. The city's surrounding Princess Anne County had a total of four teachers in two high schools.

When association founders began, three distinct organizations were available for the Industrial Arts teacher, but there were serious inequities to overcome. Foremost, there had been a dual education system, which although displaced by the 1954 Supreme Court ruling of *Brown vs. the Board of Education*, segregation continued in school systems and professional organizations through Virginia's Massive Resistance. African-American teachers belonged to the Virginia Teachers Association, which had a section for Industrial Arts; however, it normally included teachers of occupational areas, too. Teachers could also be members of a regional Industrial Education Club and the industrial arts section of the Virginia Vocational Association (VVA).

The Council of Industrial Education Clubs consisted of about six regional chapters across the state. Teachers of Industrial Arts and Trade and Industrial programs each semester would gather one evening after school for a program, school tour, and dinner. During late spring, a statewide event was scheduled on a Saturday, most often near Richmond or Lynchburg. This drew a large teacher attendance. It consisted of a series of one- or two-hour technical presentations by vendors and teachers with new ideas to share, exhibits of student work, and an evening banquet with a noted speaker. Support for the Council faded when Virginia began adopting the newly established Vocational Industrial Clubs of America (currently known as SkillsUSA). In fact, with the formation of the Virginia Industrial Arts Student Association in 1970, the work of the industrial education clubs ended.

The VVA (now Virginia ACTE) held its primary meeting within the framework of the all-encompassing Virginia Education Association (VEA) annual convention, scheduled each fall in Richmond. A sectional meeting for Industrial Arts teachers was allowed for a brief time during the overall event, but not on Saturday when more teachers could attend. Historical notes indicate cooperation and joint interests in earlier years, but by the late 1950s there were few Industrial Arts teachers who joined or participated in the VVA. In fact, a contentious relationship had evolved among the vocational leadership (i.e., association officers and the VDOE) and Industrial Arts college faculty, local subject area supervisors, and experienced teachers. The crux of the discontent with vocational leadership was two-fold.

First, it was with the VDOE, because beginning with the 1930-31 school year, the state Board of Education created an initiative to use state vocational funds to support costs associated with providing authentic Industrial Arts programs. The initiative ended in 1955. However, continued special funding was allowed for other programs meeting the vocational definition under federal guidelines (e.g., Agriculture, Business, Distributive Education, Home Economics and Trade and Industrial.) Additionally, and for several critics even more importantly, was VDOE's antiquated perspective of what an authentic Industrial Arts program should be and could become.

Second, VVA officers by this time were representatives of programs financially supported by



federal legislation. Consequently, Industrial Arts professionals by the late 1950s were relegated to the outer limits from those identified as officially vocational by federal definition. Therefore, with the loss of financial support and being treated as castoffs in a professional organization, Industrial Arts personnel felt marginalized, harbored resentments, and sought a better way to serve their profession.

The unquestionable energizer to create an association to serve the Industrial Arts profession was Professor Joseph A. Schad, a department head at Virginia Tech. He began his teaching career with the Hampton City Public Schools in 1930 as a graduate from Oswego Normal School in New York. He was among 12 new teachers recruited to Virginia that year who had earned Industrial Arts teaching credentials and who were challenged to establish a bona-fide curriculum in Virginia's public schools. Before being chosen to head a new degree offering at Virginia Tech, he had advanced to be director of vocational education in Newport News. His charge in 1946 was to establish an undergraduate program to prepare Industrial Arts teachers. He pursued his charge with great intensity and participated diligently in state and national activities, educational research, and advanced studies.

Schad was guided by a vision of Industrial Arts as the means to merge disciplines with rich educational content that blended learning and doing through projects, public presentations, and portfolios of creative and scholarly work. Further, he envisioned new curricula flourishing through Industrial Arts teachers. He held on to this vision and prepared to continually adapt to the ever-changing conditions of the human-created world. But the program leadership he witnessed at the state level and through many schools was not his ideal, nor was it acceptable for a core of professionals across the state. His dissatisfaction with conditions motivated him to envision a fresh organization that could nurture a long-range view of what Industrial Arts should be. There was hope for a fresh vision through a core group that shared Schad's outlook. He believed their combined vision could more likely be realized by a new organization, similar to the American Industrial Arts Association (AIAA) that connected people with the common bond of beliefs and aspirations. Many others can also be credited with giving support and encouragement to establish the association, but it was Joe Schad's relentless effort that brought this dream into reality.

During the fall of 1957, a statewide core of 22 visionary professionals gathered as a steering committee to develop strategies to establish Virginia's professional association exclusively for Industrial Arts personnel, which then numbered 382 teachers. The group was committed to the potential of what the program had to offer toward each person's education. It was reasoned that the work of the association would give paramount attention to helping the teacher. The mission would be continuous and ever strive to help teachers improve the curriculum and instruction of Industrial Arts. Within an exclusive professional organization, they believed the profession's causes and issues would be more fully recognized by decision makers and greater progress would be made to improve what was offered to students, as well as to help teachers become more effective. Also, this type of organization could provide the member a greater sense of importance as he/she would find others with similar beliefs and responsibilities.

Eight representatives of the steering committee met May 17, 1958, at the VEA headquarters in Richmond to formally organize the Virginia Industrial Arts Association (VIAA). They listed a program of work that included three major thrusts: to begin functioning with all the rights and privileges of a department within the VEA; to promote industrial arts for all, because the program should be within each learner's program of study; and to work for the establishment of the position





of Industrial Arts state supervisor within the VDOE because of the far-reaching state-level potential to represent the profession, solve problems, and bring needed assistance to teachers.

In summary, there are three primary factors contributing to this association's success in serving the interests and needs of teachers. First, it has helped to prove the authenticity of its field of study as well as a legitimate nongovernmental organization (by persuading the state Board of Education to create a respective office, influencing legislative action, obtaining nonprofit status from the IRS, and more). Second, it has demonstrated within the profession and to the public that the program can be taught so that learning is fun and can merge disciplines with meaningful educational content, blending learning and doing through creative and scholarly work (by supporting various student association activities, sponsoring teacher conferences and workshops, sharing relevant information via different means, and more). Third, it has fostered a means for creating cooperation with other disciplines and organizations for the ultimate benefit of learners (by unifying formerly segregated associations, affiliating with several professional organizations, combining services with other groups, and more).

As Paul Harvey might have said, "There is more to the story." Each significant accomplishment has an energizing force to make it happen. An association, business, or any organization requires at least one person—preferably more—to be the inspiration, spark, motivator, or activator to cause change to happen—to have vision, desire, will, and ability to bring dreams into reality. In fairness to reporting observations over these several years, the top five energizers to name are Joe Schad, who stands out for beginning the organization; Art Schwartz, who was the energizer of those first efforts to promote an up-to-date profession; Bill Dugger, who built unprecedented membership, conference participation, and curriculum reform; John Monroe, who enhanced learning through a student organization and promoted it so that it became a significant part of the curriculum; and George R. Willcox, who continually encouraged association activities and development through some of the most trying times of these many years.

Great potential lies ahead, as evidenced by the examples observed through STEM and attention to technology and engineering education. The field's authenticity needs to be proved more thoroughly with ever-changing, research-based activities that make learning fun and more meaningful. Members of this profession, as well as the public, need to know more about what is going on in this subject area. Fostering productive cooperation with others is never-ending and affords opportunities to lead. The value of an association devoted exclusively to the interests and needs of one profession is priceless. The VTEEA's rich history positions it to do even more in the future to answer the profession's challenges and uncover new opportunities, both today and tomorrow.



## Association Leaders, Conferences Since 1978

### Dr. Arvid W. Van Dyke

Virginia State University  
President 1978-1979



Heading into 1978, VIAA membership was at 633 members, the largest membership to date. An Industrial Arts spring festival was held in Springfield, co-chaired by John Grannis and Ron Anderson. During the awards presentation at Edison High School, the

meal ticket was \$4. The executive committee established the first budget for the association. Also another first for VIAA was the election of officers by mail. William E. Dugger Jr. solicited candidates and prepared a mail-in ballot. VIAA membership status was as follows: active teachers, 238; students, 216; life members, 170; honorary members, 15; and associate one member, for a total of 640. The summer conference was held in Norfolk on August 15-18. The printed program for the banquet listed the 20 past presidents of VIAA. Short stories by important persons in our association's history were a part of the program presented by Thomas A. Hughes Jr., VIAA historian and state supervisor of Industrial Arts in Virginia. In November, Thomas A. Hughes Jr. announced that extended contracts would become available to Industrial Arts teachers for the first time.

### Dr. David I. Joyner

Old Dominion University  
President 1979-1980



David Joyner was chair of Industrial Arts at ODU for more than a decade. In a commemorative booklet, *50 Years of Industrial Arts 1930-1980*, it was reported that during the 1979-80 school session, there were 415 schools offering Industrial Arts, 1,074 teachers

employed, and 98,986 students enrolled. While it is unknown where the conference was this year, it is clear that a partnership with the Industrial Arts Education Service in providing the annual Industrial Arts summer conference existed, as well as sponsorship and promotion of the Virginia Chapter of AIASA (including an exhibit at the State Fair of Virginia in September). David Joyner passed away August 2011.

### Jerry W. Weddle

Roanoke County Public Schools  
President 1980-1981



The program for awards and business meeting program for VIAA reported that on August 6 a presentation of Teacher of the Year went to Dr. Arvid Van Dyke, curriculum specialist at James Madison University. The next morning at the VIAA breakfast,

the business meeting was held, with addresses by Dr. Kendall Starkweather and Paul Cummings. The meeting ended with competency-based instruction review and workshop critiques at ODU.



### **Paul L. Cummings**

Newport News Public Schools  
President 1981-1982



By 1981, membership rolls have now been computerized for greater accuracy. For 1981-82, the membership stood at 381, an increase of 25 members from the year before. Again this year, VIAA sponsored the Virginia Industrial Arts Spring Festival, held May 21-23, 1982, at the Richmond Technical Center featuring technology contests and leadership programs open to all students. On August 3-6, the Virginia Industrial Arts summer conference was held at the Donaldson Brown Center, Virginia Tech. Arrangements were made for a VIAA social at a local hotel. Lynn Barrier was the conference director. There were 17 exhibitors at the conference. Four issues of the VIAA newsletter were printed and distributed. It is noted that the newsletter budgets remained in the black due to sponsorship.

### **Dr. John M. Ritz**

Old Dominion University  
President 1982-1983



The conference was held in Harrisonburg. There were 1,100 Technology Education teachers in the state at the time, and summer conferences had about 400 participants. The association did a lot of professional development for teachers and worked closely with the VDOE, before the Perkins Act was reauthorized. Dr. Ritz wrote the proposal for having the International Technology Education Association (ITEA) conference in Norfolk.

### **Ray Ellenson**

Hampton Public Schools  
President 1983-1984



The VIAA summer conference was held at Virginia Beach. VIAA-sponsored American Industrial Arts Association Student Association (AIASA) spring festival, that included student contests, was held in Richmond. The executive officers also helped with the development and compilation of a proposal to host the 1988 AIAA convention in Norfolk. Jim Haynie, vice president, reported that membership had fallen to 377, which included 156 life members, 200 regular members, 20 college students, and one associate member. Dr. Lynn Barrier, VIAA newsletter editor, reported the newsletter has had between five and seven advertisers per issue. Each of the three editions cost about \$400 to publish and \$60 for bulk mailing. In 1983-84, AIAA voted to change its name to ITEA. William E. Dugger Jr. was elected as president for the last three days of AIAA and president of the new association for the remainder of the year. Tom Hughes was elected as the ITEA president for 1984-85.

### **W. Kenneth Wilson**

Fairfax County Public Schools  
President 1984-1985



Marshall Tetterton and Charles Pinder planned the 1985 annual Industrial Arts Mini Conference, held August 7 at the Pavilion Tower, Virginia Beach. Dr. Donald Maley of the University of Maryland was the keynote speaker. There were 17 booths for exhibitors that brought in \$2,550. A new committee was formed for retired Industrial Arts teachers. It was



called the Riant Group (Retired Industrial Arts Nomadic Teachers). Riant is a real word; Merriam-Webster defines it as, “laughing; smiling; cheerful.” Robert Beuter and William Eister were co-chairmen. Holland Boaz reported that VIAA college student membership was as follows: George Mason, four; Norfolk State, two; Virginia State, four; Virginia Tech, nine; and out-of-state, five. This added up to 24! Thomas A. Hughes Jr. was elected ITEA president-elect.

**Dr. Charles A. Pinder**

Virginia Tech  
President 1985-1986



On November 30, 1985, the association’s name was changed through the leadership of President Charles A. Pinder (Virginia Tech) to the Virginia Technology Education Association (VTEA) to be consistent with national trends and the continuing thrust of the

VDOE encouraging technological studies within the curriculum. Dr. Pinder was also principal investigator for the needs of technology teachers in Virginia. He also represented VTEA on a tour arranged by Ronald Todd from New York University to study craft design technology in England. The summer conference was held at Virginia Tech.

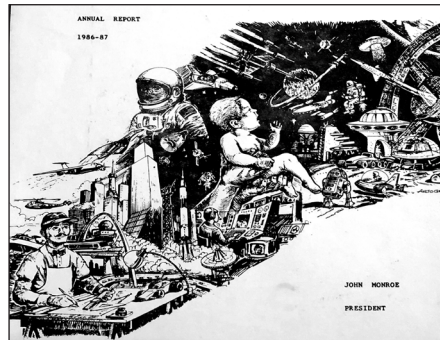
**John Monroe**

Suffolk Public Schools  
President 1986-1987



The summer conference was in held in Richmond. Times were bright with many new teachers in our field. John Monroe was active in the association for many years. He wrote about perspective—the professional image of the technology teacher, emphasizing

that the images we present to the public and our students are important. He stressed a sharp manner of dress, having positive attitudes about our profession in relation to the core subjects and the importance of attending conferences to remain up-to-date on relevant technologies.



VTEA annual report cover, 1986-1987

**James R. Doyle**

Norfolk Public Schools  
President 1987-1988



In March 1988, VTEA was the host organization for the ITEA 50th annual conference, which was held in downtown Norfolk with the theme *Technosphere '88: A Technological Journey*. Conference chairpersons were William E. Dugger Jr. (Virginia Tech) and

Thomas Hughes (VDOE). The conference program chairman was John Ritz (ODU). The VTEA summer conference was held August 4, in Richmond.

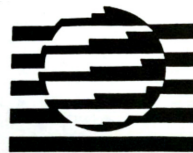


### **Dr. Holland E. Boaz**

Virginia State University  
President 1988-1989



During this year, the conference was in Virginia Beach at the Radisson. The school computers used were Apple IIe models. Dr. Boaz described Virginia as a leader in Technology Education due to good leadership, capable and energetic support groups, and cooperation. Again teachers across the state gathered for a few days to improve their skills and content knowledge in instruction.



**VIRGINIA  
TECHNOLOGY  
EDUCATION  
ASSOCIATION**

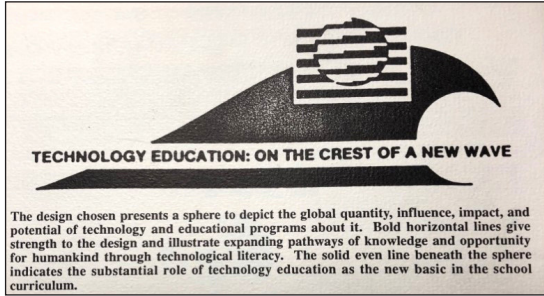
### **Deborah W. Busch**

Winchester City Public Schools  
President 1989-1990



The summer conference, jointly sponsored by the VDOE and VTEA, gave each participant an opportunity to choose one comprehensive workshop that best suited their needs. The conference was held August 1-3 at Virginia Tech, with the theme *Technology Education—Because Tomorrow Begins Today*. It is noted that on the membership form to join VTEA, the cost of a regular membership was \$5, life member (one payment) was \$75, and college student was \$1. In August 1990, the Technology Education Service reported on changing conditions for high school courses. There were six approved programs with at least two courses each. For example, to achieve program completion in communication technology, a student would enroll in Communications Systems, Computing Systems, and Graphic Communications.

The design chosen for the VTEA logo presents a sphere to depict the global quantity, influence, impact, and potential of Technology Education. Bold horizontal lines give strength to the design and illustrate expanding pathways of knowledge and opportunity for humankind through technological literacy. The solid even line beneath the sphere indicates the substantial role of Technology Education as a foundation in the school curriculum.



## Hugh D. Byrd

Henrico County Public Schools  
President 1990-1991



In August 1991, VTEA appointed its first executive director, Thomas Hughes, who agreed to assist the organization in its transition to become self-supporting as the former VDOE underwent a restructuring in March and a new structure was developed without

subject-area offices. The former Technology Education Service, with six professional staff, was gone. The new VDOE employed two specialists with Technology Education credentials, Thomas A. Hughes Jr., principal specialist, and George R. Willcox, associate specialist.

The 1991 Technology Education summer conference was held at Virginia Tech on July 31-August 2. The program was developed in cooperation with the faculty at Virginia Tech and featured 14 concurrent hands-on workshops for teachers to be introduced to up-to-date program concepts and instructional practices at the secondary level. Middle school teachers chose from six workshop options, each one tailored to new middle school offerings: Introduction to Technology, Inventions & Innovations, and Technological Systems.

Francis L. Horne Sr., of Newport News, was appointed by the president of VTEA to organize and coordinate retired technology educators (henceforth known as RET-TECH) as a standing committee of VTEA. Each RET-TECH will be a member, in good standing, of VTEA and ITEA. The quote in the newsletter announcement was, “Don’t rust out; stay active and involved with VTEA and wear out!”

Later in the year, due to the demise of the VDOE’s Technology Education Service, the executive committee, Thomas A. Hughes Jr., and other leaders of the state professional organization “have worked diligently to update the VTEA Constitution so that we can better accommodate the needs of our membership.” The summer 1991 edition of the quarterly journal included the revised constitution and bylaws with a ratification ballot for members.

## David B. Magnone

Henrico County Public Schools  
President 1991-1992



This was the first full year of the reconceptualized VDOE. Instead of the six paid Technology Education staff members, our representatives at the VDOE were reduced to two. The leaders had developed a dynamic curriculum that was vital and flexible,

accommodated new technologies as they were introduced, and matched the intent and goals of Virginia’s world-class system of education and common core of learning. During this year the



newly elected regional presidents and officers have taken over the responsibility of planning and running of the TSA regional fairs. Other changes included implementing the new Electronic Communication and Governmental Relations standing committees. Allen Bame was summer conference chair. The summer conference was held at Virginia Tech on August 12-14, with 112 in attendance. Don Libeau, vice president, reported total membership of 293 for 1991-1992. This represented 159 life members, 133 regular members, and only one student member.

### **Wesley F. Worley**

Covington Public Schools

President 1992-1993



During this year, our board worked on our suggestions to ITEA on the National Standards for Technology Education, which was being put together by Dr. William E. Dugger Jr. and Dr. Sharon Brusica. The board hosted a reception at the state TSA conference

in April for all technology teachers. The summer conference was held at Virginia Tech on August 11-13. Workshops were held each day. Topics included automated technology (robotics systems, CAD/CAM, CNC technology, FMS integration), UNILAB, transportation and communications, mechanical advantage devices, design and technology, principles of technology, and using LEGOs in middle school. The association tried to make sure that the needs of technology educators was well known at the state capitol and was proactive that year in contacting representatives and educating them on Technology Education. Virginians made significant contributions at the 52nd annual ITEA conference, held in Indianapolis, Indiana.

Jim Carey, Virginia TSA state advisor, reported that the 1992 TSA national conference was held in Richmond, where planning had begun two years earlier.

### **Douglas E. Smith**

Fairfax County Public Schools

President 1993-1994



In August 1994, VTEA assumed the complete planning and management of the annual summer conference for technology teachers, which first began 25 years previously with the VDOE.

The conference was at the Richmond Hyatt on August 10-12. David Magnone was the conference chairman. The elementary school program and teacher of the year winners had displays.



**Daniel R. Smith**

Norfolk Public Schools  
President 1994-1995



The conference was held at the Radisson Hotel in Virginia Beach. Sid Rader was the conference director. Conference registration and five meals cost \$110, and VTEA members paid \$90. Workshops included AutoCAD, CADKEY, CAM, control technology with LEGO Dacta, and surfing the Internet to master options in using Virginia’s PEN (Public Education Network). Exciting industry tours offered were TCOMM (lighter-than-air airships) and Stihl Inc., headquartered in Virginia Beach. Jimmie Woods was the TSA state advisor. George R. Willcox demonstrated the capabilities of microcomputers and their application in Technology Education. John Monroe was elected ITEA president-elect.

From 1994-2005, William E. Dugger Jr. was named director of the Technology for All Americans project by ITEA. This effort resulted in Standards for Technological Literacy (STL) for the United States, and other significant publications.



Technology Education Specialist George Willcox looks on as Thomas A. Hughes, Jr. presents Kristin Andrea Harpine with the first Hughes Scholarship at Technosphere '96.

**J. Russell Bennett**

Richmond Public Schools  
President 1995-1996



The Xerox Document University in Leesburg was the location of our conference, held from August 7-9. Peter Fulcer, CTE director for Loudoun County Public Schools, served as conference director.

In March 1996, VTEA became an official 501(c)(3) nonprofit organization via the Internal Revenue Service. In January 1998, VTEA’s Governmental Relations Committee encouraged the Virginia General Assembly to enact legislation calling for Technology Education to be within each learner’s curriculum in grades K-12. A type of legislation passed, but it offered little value compared with the VTEA’s intent. It is important to note that this effort marked VTEA’s initial effort to bring action in the General Assembly.

The Board of Directors held a leadership workshop at Graves Mountain Lodge in Syria, Virginia, from July 8-9. A membership recruitment effort was implemented through the preparation and installation of a website for the association. The home page provided an overview of the association, its purposes, officers, regional presidents, and other resources that are of general interest of technology students, teachers, and others. Posts were made on the Virginia PEN news group, but



it appears that technology teachers are passive readers, as the response was poor with regard to posting responses to inquiries. Patricia Ways continued to be the editor for the journal *Technology Trends*. From 1995 to 2005, William E. Dugger Jr. served as senior fellow for ITEA.

### Gregory S. Trobaugh

Rockingham County Public Schools  
President 1996-1997



The conference was held August 6-8 at the Hotel Roanoke with the theme *From Steam to Dream*. The first Chester Lane Teacher of the Year was presented to Kevin Pace, a teacher from Chesapeake. Chester Lane came to the conference to be part of the presentation of the first award in his name. This was the 29th annual conference, and Jerry Weddle was the conference director. On March 1, the board of directors recognized John Monroe for his service as ITEA representative (since 1976), VTEA president (1986-87), co-founder of Virginia TSA (1969-70), chapter adviser, and Virginia's first classroom teacher to be elected ITEA president (1995-96). It was resolved that the VTEA Outstanding Service Award henceforth be preserved in his honor as the John Monroe Service Award.



### Dr. Tricia S. Jacobs

Stafford County Public Schools  
President 1997-1998



In February 1998, VTEA, in conjunction with the Technology Education Program at Virginia Tech, established a LISTSERV for Technology Education in Virginia. The LISTSERV was maintained by the Electronic Publishing Project at Virginia Tech.

The souvenir program for the 1998 summer conference was titled *Technologizing Your Future Celebrating Our 40<sup>th</sup> Anniversary*. The conference was held at the Hyatt Richmond from August 5-7. The conference director was J. Russell Bennett. Attendees were asked to share their best teaching idea by participating in the Innovative Teaching Strategies Showcase, held on the opening day. Three pre-conference, full-week courses included: Technology Education in the Elementary School, by Deborah Ballard and Patti Fazzi; Virginia High School Design and Technology Curriculum, by Arvid VanDyke; and Principles of Technology I and II, by John Carver. Special-interest sessions included Lego Dacta RCX robotics systems, Hands-on Physics, Techno Isel CO2 and Racers Edge, K'NEX-Technology & Science, Computer Animation Using 3-D Studio, WWW Page Development, and PowerPoint. Sessions were held at J.R. Tucker High School and at the Richmond Technical Center. The guest speaker was Harvey Dean. On the closing day,

a special retirement recognition luncheon was held honoring Arvid Van Dyke. Three issues of the VTEA *Technologize* newsletter were printed and graphically enhanced by David Magnone, editor. The board of directors voted in November to recognize Patricia Ways of Norview High School for her tireless efforts in leading students to typeset more than 25 issues of *Technology Trends* and the *VTEA Journal*, which she upgraded to the new title with the Summer 1993 issue. She published news, opportunities, and instructional design briefs for more than 10 years.

**Pamela R. Green**

Hampton Public Schools  
President 1998-1999



The conference was held at the Hyatt Richmond from August 7-8. Pamela gave birth to a beautiful baby girl during her presidential year. Posey Young and George R. Willcox set up a cyber room at the summer conference for teachers to explore the Internet. David

Magnone became the new executive director of VTEA. VTEA held a strategic-planning retreat at Graves Mountain Lodge on July 8-9, 1999. Patricia Fazzi reported on elementary technology on the growth of the Children’s Engineering Convention for elementary educators on April 6-7, 1999, with 50 participants from across the state. The summer VTEA conference saw 24 elementary participants in a graduate course offered for them. Pamela Green passed away in 2009.



**Posey Young**

Virginia State University  
President 1999-2000



The association’s conference was held in Roanoke. The Children’s Engineering Convention was growing in participation, and Teacher of the Year Awards were presented to Wes Worley (high school), Wes Walters (middle school), and Patti Fazzi (elementary school).

**John Ledgerwood**

Virginia Beach Public Schools  
President 2000-2001



This summer conference was held at Virginia Tech on August 6-8. The theme was *Interpreting & Implementing Standards*. The format differed from past years in that everyone attended the same workshop content to help in implementing new standards in

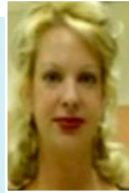
classrooms. Allen Bame was the conference director, and Dr. William E. Dugger Jr. gave the



keynote address on the Standards for All Americas Project.

### **Molly R. Knaack**

Chesapeake Public Schools  
President 2001-2002



The 2002 VTEA summer conference was held August 7-9, 2002, at the Williamsburg Woodlands and the Cascades Meeting Center. Based on the theme, *Drawing From Our Past. Designing Our Future*, participants experienced a myriad of learning opportunities from 18th century tools and techniques to present-day biotechnology. More than 200 teachers were in attendance. The highlight of this gathering was the recognition of the first members of the VTEA Academy of Scholars: Thomas A. Hughes Jr., William E. Dugger Jr., John Monroe, E. Allen Bame, Arvid W. Van Dyke, and John M. Ritz. At the dinner hour, Thomas Jefferson welcomed the VTEA to Colonial Williamsburg and entertained those attending the recognition banquet with facts, conversation, and wit from the 1700s. Workshop topics included NASA Connections, 3-D Max animation, AutoCAD, TSA, surveying, biotechnology, and graphic presentations. Richard Aadahl and his team were deserving of many thanks for the well-planned conference. Members received a service pin for the number of years contributed to the field of Technology Education. James Wood High School teachers C. Ray Lanham and Andrea H. Adams became the new co-editors for the VTEA *Technologize* newsletter.

### **Jason E. Perry**

Middlesex County Public Schools  
President 2002-2003



In November 2004, VTEA launched an initiative that resulted in a statewide program that provides geospatial technology resources to all middle and high schools across the commonwealth, with an emphasis on teachers and students in technology, science, agriculture, and geography. This effort was co-led by George R. Willcox, of the VDOE's Technology Education Service. In the winter issue of *Technologize*, Perry said, "Technology education will always be about process vs. content. It enables students to use information and make decisions. This allows students to control their destinies and develop decision-making powers." The CTE Professional Development Institute was held at the Hotel Roanoke from August 3-8, 2003. Again, this was an umbrella conference with all CTE program areas having meetings. Technology Education's 45th annual meeting and interest sessions were held in the hotel and at Hidden Valley High School. A variety of computer-related sessions were held. Geographic information system (GIS) and global position system (GPS) training was offered for two days after the closing general session. George R. Willcox was elected ITEA president-elect.

### **Mohamad Barbarji**

Town of West Point Public Schools  
President 2003-2004



At the 65th annual ITEA conference in Nashville, Tennessee, from March 13-15, 2003, George R. Willcox was installed as the 57th president. The VTEA was extremely proud of Mr. Willcox and this accomplishment. On April 9, 2003, the Arlington Science Focus Children's Design and Engineering Program held its second annual *Outside the Box Day*. Kris Martini reported that parents and community leaders formed teams with students

to participate in various grade level design briefs.

Richmond City Public Schools and VDOE welcomed VTEA to the 45th summer conference. The conference theme was *Hands-on Application for Technology Education*. There were stark differences between this and past years' conferences through the type of workshops provided. The conference committee went to great lengths to plan a balanced and exciting array of workshops and experiences. On Friday, participants had the opportunity to visit some of the local businesses and industrial sites in Richmond.

### John Krasitch

Frederick County Public Schools  
President 2004-2005



The association conference was held at the Sheraton Park South in Richmond. Attendees could choose to turn a wooden pen on one of many Jet mini lathes. During the general sessions, the gubernatorial candidates spoke to the CTE audience stating their plat-

forms. Most of the workshops were held at the Richmond Technical Center.



### Kris Martini

Arlington County Public Schools  
President 2005-2006



The summer conference was held at the Crowne Plaza Dulles Airport in Herndon, Virginia. A full-week class in the new GIS course was offered. Charlie Scudder's classroom at West Point High School was used for some sessions. The conference

theme, *Technology Education – a Capital Idea*, focused on encouraging participants to use new and useful information and ideas in the classroom. The conference planning team worked hard to provide valuable, useful workshops for all attendees, whether it was a three-hour offering or a full-week, college-credit class. The three-hour sessions were designed to spark interest and encourage the pursuit of postconference classes through the local school division, college, VDOE, or VTEA. There was a tour of the Steven F. Udvar Hazy Center Air and Space Museum and also a golf tournament. Tony Casipit was heading the conference planning with teachers from Fairfax, Arlington, and Prince William counties.

In January 2006, VTEA's Governmental Relations Committee (Kathleen F. Stansbury, Marcia Hickey [Children's Engineering Council], and other members of the association) encouraged the Virginia General Assembly to enact legislation calling for funding support for elementary school



Technology Education and a requirement for the study of technology in middle and high school through House Joint Resolution 25 (HJR 25). This two-year legislative study was extended during the 2008 session of the Virginia General Assembly (HJR 90).



### **Kathleen F. Stansbury**

Richmond Public Schools  
President 2006-2007



Kathleen Stansbury worked with Fred Stemp, vice president; Bonnie Machado, secretary; and Earl Henry Hurlburt, executive secretary, as the executive committee.

The VTEA summer conference was held in Hampton. Dr. Billy K. Cannaday Jr. provided a short video and spoke about the importance of Technology Education. Jesse W. White was conference chair. Hampton City Schools, Poquoson City Schools, and Virginia Beach City Public Schools were the conference hosts. The conference dates were August 1-3, 2007. The theme was *From the Sea to the Stars*. Events included tours of NASA-Langley Research Center and Newport News Shipbuilding. The conference focus was on high-tech careers in design, engineering, robotics, and graphics, and included weeklong workshops on geospatial technology (JMU course), graphic communications processes (ODU graduate course) and three preconference workshops: Solidworks Certificate Training, ProEngineer CADD Training, and ProDesktop CADD Training. An ITEA Engineering by Design (EbD) course for elementary teachers called Green Beans on the Moon? was provided. A one-day workshop on serious gaming was provided by The Virginia Modeling and Simulation Center (VMASC). The keynote speaker was Dr. Roseanne Runte, president of ODU. This year, Dr. Lynn Basham served as the VDOE specialist for Technology Education and related clusters.





### Jesse W. White

Hampton City Public Schools  
President 2007-2008



This year’s focus was on continuous improvement in programming and in membership, which had started to decline.

From August 6-8, 2008, VTEA celebrated its 50th anniversary during the Technology Education summer conference. The conference was held at the Virginia Beach Resort Hotel and Conference Center. John Ledgerwood, Technology Education supervisor for Virginia Beach City Public Schools, served as the conference chair. The keynote speaker was Dr. Dennis Bushnell, chief scientist at NASA-Langley Research Center. This was also the conference where VTEA’s branding of the industrial arts movement over the decades was captured in posters by Bonnie Machado. Ron Vickers created several photographic history display boards, which were placed around the banquet room. The group was honored to have Tom Hughes to attend its 50th anniversary.



In February 2008, the VTEA Council for Children’s Engineering held the 12th annual statewide Children’s Engineering Convention for elementary school educators. More than 200 elementary school (K-5) teachers and administrators attended. Thomas A. Hughes Jr. was in attendance and he gave a historical talk and offered optimism for the future. George R. Willcox presented those in attendance with a challenge to raise funds for scholarship.

### Rick Dyer

Norfolk City Public Schools  
President 2008-2009



The annual summer conference was part of a combined conference of all Career and Technical Education divisions. The VDOE held the events at the Greater Richmond Convention Center with eight different hotels for attendees. The overall theme was

*Developing a Bright Future*. CTE program areas represented were Agricultural Education, Business and Information Technology, Family and Consumer Sciences, Health and Medical Sciences, Marketing, Technology Education, and Trade and Industrial Education. The Westin Richmond was the central location for the sessions with the following schools hosting workshops: Deep Run High School, Hermitage High School, and Pocahontas Middle School.

### Ron Vickers

Page County Public Schools  
President 2009-2010



The Holiday Inn Tanglewood in Roanoke was the location of the annual summer conference, held August 4-6. The theme was *STEM: Integrate and Educate*. Virginia Western Community College and Hidden Valley High School were used as workshop

locations. Of note were opportunities to use the Norfolk-Southern Locomotive Simulator and to tour the Virginia Museum of Transportation, Virginia Tech Smart Road, and WDBJ-Channel 7. Dr. William E. Dugger Jr. was our keynote speaker. Ms. Rebecca Jaramillo, of NASA’s eClips program, presented award-winning STEM educational resources. Vic Terry, of Botetourt County

Schools was the conference chair and was assisted by Sarah Gerrol, Dan Horine, Mike Johnson, and Jerry Weddle, who served as exhibit chair. More than 250 teachers attended the conference. VTEA is an association led by its membership. On January 12, 2010, the VTEA Board of Directors election ballot was sent electronically to 234 active members. Elections closed on January 28, 2010, with the following results: email ballots, 234; mailed ballots, 12; completions, 65; partials, one; opt-out, one; bounce ballots, 33; and no response, 134. The use of both paper ballots via U.S. mail and electronic voting was a success.



### Georgette Yakman

Pulaski County Public Schools  
President 2010-2011



The Children's Engineering Council (CEC) gained independence from VTEA. George R. Willcox, a life member of the VTEA, worked on getting the CEC incorporated as a 501(c)(3) organization titled the Virginia Children's Engineering Council (VCEC).

The summer conference was held in Suffolk at the Hilton Garden Inn Conference Center August 3-5. Gail Bess was the conference planning chair. King's Fork Middle and High Schools hosted sessions. A Photoshop CS5 basic training course was offered with the accompanying industry credentialing exam given. A SeaPerch underwater robotics workshop was also offered. Many more STEM-oriented workshops were well-received. Hobson Powell, director of search creative development at Yahoo!, was the keynote speaker. Georgette Yakman stated that, despite VTEA formally adding engineering educators, the profession is undergoing a time and trend of reduce, reuse, recycle. By this, she meant that few young people were entering the Technology Education field, with an ever-expanding, diversified curriculum currently serving a minute population. She felt that, with fewer teachers, and with NSTA claiming part of engineering studies, Technology Education needed to focus its offerings to survive.

On August 5, 2011, the association's name was changed to the Virginia Technology and Engineering Education Association (VTEEA), to be consistent with national trends.



### Dr. Johnny Moye

Chesapeake City Public Schools  
President 2011-2012



The VTEEA summer conference was held in Winchester from August 1-3, 2012. General sessions were held at Lord Fairfax Community College. Professional development sessions were held at Sherando and Millbrook High Schools, Admiral

Byrd Middle School, and Evendale Elementary School. Full-day children’s engineering workshops were held Monday through Friday. Allied Systems, Kraft Foods, and Crown Cork & Seal sponsored interesting and informative industry tours. The FIRST Robotics competition made its VTEEA conference debut. The conference theme was *Every Child Should Study Technology*. Andy Stephenson was the opening-session guest speaker. Mr. Steve Straight served as the conference chair. Important accomplishments during this year include the development and approval of the 2012-2015 VTEEA strategic plan, a major revision of the VTEEA Board of Directors manual, and changes to the VTEEA constitution and bylaws.

### David Hotler

Hampton City Public Schools  
President 2012-2013



The theme of the conference was *Explore a New Frontier*. With STEM education at the forefront and national measures for technology in K-12, it is up to technology educators to take, as Neil Armstrong said, “One small step for man, one giant leap for man-

kind.” Tours of both NASA and Newport News Shipbuilding were offered. Jesse White served as the conference chair with the meeting being held July 31-August 2 at the Crowne Plaza Hampton



Marina Hotel. Aneesh Chopra was the keynote speaker and is a supporter of STEM education. He helped create the Virginia Governor’s STEM Academies. The association was able to purchase branded apparel while at the conference, thanks to the efforts of Hotler and his students at Phoebus High School, who operated the high-tech graphics lab that printed and embroidered the textiles.

In general, the year was busy as the organization worked to transition from the name VTEA to the name VTEEA, build affinity among the Technology Education community, and amplify the group’s voice. From 2013 to today, William E. Dugger Jr. has been a researcher, along with Drs. Johnny Moye and Kendall Starkweather, on a project called *Learning Better by Doing* in U.S. schools.





## Cliff Jones

Chesterfield County Public Schools  
President 2013-2014



The annual summer conference was hosted by Chesterfield County Public Schools from August 6-8. The theme this year was *Building Foundations for Careers*. Dr. David Eshelman was the conference planning director. Many of the work sessions

were held at the Chesterfield Technical Center and John Tyler Community College. Factory tours included Flexicell and the Rolls Royce plant. One afternoon, several participants also attended a Richmond Flying Squirrels baseball game.



## Debra Shapiro

Suffolk City Public Schools  
President 2014-2015,  
President 2015-2016



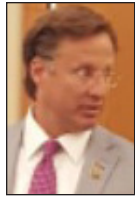
Albemarle County Public Schools hosted the 2015 VTEEA conference at the Holiday Inn in Charlottesville from July 29-31. Chad Ratliff, CTE director, served as conference planning chair and, along with Eric Bredder and Stephanie Passman, worked

to make the conference a success. The theme was *Making Engineering Everything*. A novel approach was used, with attendees not signing up in advance for sessions but choosing what to attend onsite. SeaPerch underwater robotics, 3D printing, and wearable electronics were session topics. A lot of the sessions were held on the campus of the University of Virginia. Micah Lande was the keynote speaker. William E. Dugger Jr. and Steve Barbato attended the conference. Tours included a local makerspace and several startups in the area. Teachers enjoyed learning about Solar Mill, a green company that operates a CNC router on sustainable bamboo plywood, using entirely solar energy.





Debra served as our association president for the second year in a row due to the president-elect, Stephen Hackett, withdrawing to pursue his doctorate. The annual summer conference was held from July 26-28 at the Richmond Airport Hotel and Elko Middle School, hosted by Henrico



County Public Schools. Shawn Gross was the conference director, with seven Technology Education teachers assisting. The theme was *Teaching Tomorrow's Technology Today*. U.S. Representative Dave Brat was the keynote speaker with a stirring address based on his master's of divinity and doctorate in economics. Again, a three-credit graduate course on children's engineering was held. Elementary teachers met Monday through Friday of the conference week at Donahoe Elementary School. This was our first year with a photo challenge, which did not result in high participation. The hashtag #VTEEA16 was used to record images. The winner was offered a free conference voucher.



### Kenneth Noonan

Chesterfield County Public Schools  
President 2016-2017



The annual summer conference was held at ODU in Norfolk from July 24-27. *Creating Opportunities* was the theme. The conference was organized by Dr. Phil Reed and Logan Foster was co-chairperson.

This was the second year that the Board of Directors

offered a photo challenge to win a free 2018 conference registration. The idea was to use social media to preserve the images from the conference and also to spread the word about VTEEA. Searching the hashtag #VTEEA17 reveals what was posted by participants. A highlight of the conference was the opportunity to take a cruise aboard the American Rover, an authentic sailing sloop, around the Norfolk area. There were more than 34 different sessions to attend. Dr. Johnny J. Moye was the opening session speaker. Of note was the session titled Systems and Controls, presented by Dr. Ron Todd and Jonathan Gershon from United Kingdom Design & Technology Association. A grant was obtained to create this graduate-level course to prepare teachers to work in teams using the curriculum refined in the UK.





## George Bishop

Prince William County Public Schools  
President 2017-2018



This year, VTEEA celebrates its 60th anniversary during the July 25-28 summer conference, to be held at the Hilton Alexandria Mark Center. The theme is *Exploring Innovating*, and the northern region is proud to have been selected for the honor to host this aus-

picious occasion. Kris Martini of Arlington County Public Schools served as the conference chair. Danielle Meyer and Beth Gugino provided substantial assistance in organizing the workshops. This



summer conference is a joint venture between Arlington Public Schools and Alexandria City Public Schools. This is the third year that the photo challenge has been included (#VTEEA18). During this year, the association launched several upgrades to its website, including an online registration portal designed to make the membership application process seamless. Membership databases have been updated, key board of directors positions filled, and the work of

the VTEEA to support Technology Education instructors throughout the Commonwealth continues unabated. Roanoke County Public Schools has been selected to host the 2019 conference at the Hotel Roanoke, with Tim Axley serving as the conference chairman.

## Milestones in the Association's History

### October 1958

The first meeting of the VIAA was held at the Hotel Richmond during the VEA annual convention. Dr. Kermit Seefeld, Industrial Arts head at the University of California at Santa Barbara and president of the AIAA, gave the address "Industrial Arts in The New Era." A temporary constitution was adopted and the first officers were elected: president—Joe Schad, VPI and AIAA state representative; first vice president—John Esterly, Bassett High School, Henry County; second vice president—Frank West, Blacksburg High School; secretary-treasurer, Virgil Harris, Annandale High School, Fairfax County.

### January 1959

The VIAA applied to the AIAA for affiliation in January 1959. Walter L. Griggs of Virginia Tech was appointed editor of the association's first yearbook, which was published in 1960. Because the association was operating without fixed dues, voluntary contributions were sought from persons interested in Industrial Arts. Contributions in the amount of \$1 were requested.

### 1960-61

The VIAA leadership urged the creation of a state organization for black teachers of Industrial Arts.

### November 1961

The fourth annual convention of the VIAA was held Nov. 3-4,, at the Hotel John Marshall in Richmond. The executive committee developed a proposed program of action, which was overwhelmingly approved by the membership. The plan included naming an Industrial Arts Club of the Year Award and an Industrial Arts Man of the Year Award.

### May 1962

The first Teacher of the Year Award was established, with the distinction going to Arthur Schwartz of James Monroe High School in Fredericksburg.

A resolution was submitted to the state superintendent of public instruction, Dr. Woodrow Wilkerson, requesting the creation of the position of state supervisor of Industrial Arts.

**1962-63** At the annual meeting, William Wilkinson, president of AIAA, stressed that "All Industrial Arts teachers should be encouraged to experiment with new ideas and to break the confinement of a textbook approach to a subject. Some teachers, impressed by the modern technological advances of industry, recognize the strong motivational aspects and take advantage or its application to their areas. Knowing the need for the industrial worker to understand scientific principles and higher mathematics, we must broaden our horizons."

### March 1964

VIAA formalized affiliation with AIAA, which had been planned.

### December 1965

The VIAA newsletter was initiated, with the byline *Industrial Arts for All*, and mailed to each member by Arthur H. Schwartz of Fredericksburg. It became a monthly newsletter in September 1966.

### September 1966

The Norfolk Chapter of VIAA was organized with H. Wayne Everett of Maury High School as



president. During the conference, a discussion was held on the eye protective devices law that became effective September 1, 1966.

### **May 1, 1967**

VIAA became the professional association for all Industrial Arts teachers through a unification referendum overwhelmingly approved by members of the Industrial Arts Teachers of Virginia and the VIAA. This significant achievement is credited to the leadership and cooperation of IATV President Roland Walton and VIAA President Joseph Haslett.

**January, 1968** Through the cooperation of the VDOE and the VIAA, federal funds from the National Defense Education Act, Title III, were approved for Industrial Arts effective January 1968. It was anticipated that Industrial Arts programs would receive nearly \$150,000 in equipment aide in the first year.

### **March 1969**

The VIAA Executive Committee, led by President Robert Clark (Norfolk), approved a request that established the VIASA from another student organization. The request came from Dr. W.T. Reed, professor of industrial education, Virginia State College, who provided leadership to an organization for public school Industrial Arts students established in 1954 as the Industrial Club of Virginia.

### **June 1, 1969**

The VIAA effort to encourage the establishment of a state-level office exclusively for the profession was realized when VDOE formed the Industrial Arts Service within its organization. The first appointed staff was Thomas A. Hughes Jr., state supervisor, and Marshall O. Tetterton, assistant supervisor. By the summer of 1978, the service unit had grown to a six-member staff with a regional office in Roanoke, a curriculum specialist, and a student organization specialist, which meant it had become the largest unit of Industrial Arts state staff in the nation (this status continued until 1991).

### **August 11-14, 1969**

Virginia's first statewide conference exclusively for Industrial Arts personnel was conducted in Richmond at the John Marshall Hotel through a cooperative agreement with the new Industrial Arts Education Service. Participant expenses for lodging, meals and travel were reimbursed by the VDOE, and exhibitor fees were paid to VIAA.

### **May 16, 1970**

The first statewide Industrial Arts student project exhibit and leadership program was held at Hopewell High School through the sponsorship of the VIAA. Titled the Industrial Arts Spring Festival, it evolved from the previous Council of Industrial Education Clubs Fair that also exhibited work of Trade and Industrial students, which were to be served through their new organization, VICA. Another first was a leadership program for the newly supported VIASA, directed by Marshall Tetterton, assistant state supervisor, with John Monroe of Nansemond County as state advisor.

### **September 1970**

A Central Virginia chapter of VIAA was established for teachers in Lynchburg and Campbell County, with Reon Lambert as president.

### **February 23, 1972**

A coordinated master schedule of statewide professional development activities and an annual

schedule for the student association was prepared through cooperative planning by the Executive Committee and the Industrial Arts Education Service staff.

### **August 1972**

The 1972 Industrial Arts summer conference was held at the Hotel John Marshall in Richmond. The VIAA agreed to cooperate with the Industrial Arts Education Service in sponsoring the summer conference by coordinating vendors or commercial exhibitors and a “SHIPS” type program. It was also determined that, because the number of summer conference participants is far greater than the annual fall convention, the annual VIAA business meeting would be more appropriately held at the summer conference. A recognition program was initiated for retiring Industrial Arts teachers.

### **April 1973**

ODU established a professional Industrial Arts fraternity, Sigma Tau Epsilon. The fraternity replaced the Industrial Arts Club. Virginia Governor Linwood Holton proclaimed April 2-7, 1973, as Industrial Arts Education Week in Virginia. The proclamation coincided with the International Conference of the American Industrial Arts Association in Atlantic City, N.J. The scholarship award was named the Joseph A. Schad Memorial Scholarship Award.

### **July 1, 1973**

The VIAA revised constitution becomes effective. Among the changes were increasing dues for active members to \$5, establishing terms of office for the executive secretary and AIAA state representative, and reducing the president’s term from two years to one. Because of a national energy crisis during the 1973-74 session, student activities requiring travel were cancelled statewide. This resulted in the Industrial Arts spring festival being maintained on a limited basis. Marshall Tetterton hosted the festival in a conference room at the VDOE. The Best in Show Award was introduced and presented to the American Industrial Arts Student Association member having the most exceptional project in competition. Ms. Penny Reitelbach from Deep Creek High School in Chesapeake was the first winner, with an architectural model.

### **August 1973**

The association created the Joseph A. Schad Memorial Scholarship for a deserving undergraduate student preparing to become an Industrial Arts teacher.

The Outstanding Achievement Award was presented to D. Mark Delp, Industrial Arts studio teacher, Central VA Educational Television, for developing the nation’s first educational TV series, Industrial Arts for the ’70s.

**1974-75** Two-hundred fifty teachers attended the VIAA banquet at the NASA-Langley Research Center. Dr. Rufus Beamer, executive director of the Virginia Vocational Advisory Council addressed the membership about future legislation considering the role of Industrial Arts in preparing youth for career and educational choices. The association’s primary annual meeting became the summer conference, with a schedule for conducting a business meeting, sponsoring the exhibitors’ program, and providing for a meal function with a featured speaker.

### **August 1975**

The annual business meeting was conducted at the Industrial Arts summer conference because of its larger number of participants and the fact that it was removed from the VEA convention.

VIAA became affiliated with the VVA.



### **May 1976**

The Industrial Arts summer conference continued to grow in significance to the profession and to the association specifically. The Roanoke Valley Industrial Arts teachers hosted the seventh spring festival at Tanglewood Mall in Roanoke on May 21-22. There was a considerable increase in the number of AIASA students participating in that year's festival. A bicentennial booklet, dedicated to the founding president, was prepared to commemorate Industrial Arts in Virginia.

### **September 1976**

VIAA sponsored a 10-day public exhibit of Industrial Arts student activities at the Atlantic Rural Exhibition in Richmond (Virginia's annual state fair.)

### **1976-77**

President William E. Dugger Jr. exceeded his membership goal of 500 teachers by 19 persons. The newsletter, edited by Arvid Van Dyke, advanced to a new level of professional communication. The more refined and frequent newsletter was supported financially through commercial advertisements. In addition to the newsletter, the president initiated a president's member-gram, which was issued three times.

### **August 1977**

Three hundred-thirty Industrial Arts teachers participated in the summer conference (the largest number to date) at Virginia Tech. On August 1, the amended VIAA constitution and bylaws were ratified, marking the association's completion of its second revision of the 1958 constitution. Among the major changes were establishing the membership year (July 1 through June 30) and conducting the election of officers by ballot. President William Kern stressed the development of local industrial arts associations. He gave presentations and communicated with groups of Industrial Arts teachers across the state, encouraging their active involvement at the local, state, and national levels. VIAA membership reached an all-time high of 640 members, representing approximately 60 percent of the Industrial Arts profession in Virginia at the time.

VIAA President Arvid Van Dyke asked each member of the U.S. Senate to vote for vocational education and industrial arts program funding. He received letters from each senator:

*"Without question, vocational education, is crucial if our schools are to meet the need of its students and its community."*

—**Senator John W. Warner**

*"I feel vocational education is a very important program and has helped so many young people to get a start toward productive lives. I have consistently supported vocational education."*

—**Senator Harry F. Byrd Jr.**

### **August 1978**

The VIAA membership level was reported to be 60 percent of Virginia's Industrial Arts teachers.

### **November 30, 1985**

The association's name was changed through the leadership of President Charles Pinder (Virginia Tech) to the VTEA, to be consistent with national trends and the continuing thrust of the VDOE encouraging technological studies within the curriculum.



From left: William E. Dugger Jr., Kendall Starkweather, Kay Shaffer (the TSA national executive director before Rosanne White), and Thomas A. Hughes Jr.



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### **March 1988**

The VTEA was the host organization for the ITEA's 50th annual conference, which was held in Norfolk with theme *Technosphere '88: A Technological Journey*. Conference chairpersons were William Dugger of Virginia Tech and Thomas Hughes of VDOE. The conference program chairman was John Ritz of Old Dominion University.

### **August 1991**

VTEA appointed its first executive director, Thomas Hughes, who agreed to assist the organization in its transition to becoming self-supporting.

### **August 1994**

VTEA assumed the complete planning and management of the annual summer conference for technology teachers, which began 25 years previously through the VDOE.

### **March 1996**

VTEA became an official 501(c)(3) nonprofit via the IRS. This was significant and was done so that a body of persons can act under a legal charter as a separate entity with its own rights, privileges and liabilities distinct from those of its individual members.

### **February 1997**

VTEA assisted the VDOE in creating a statewide annual children's engineering convention for elementary school teachers and administrators.

### **Winter 1998**

VTEA's Governmental Relations Committee encouraged the Virginia General Assembly to enact legislation calling for Technology Education to be within each learner's curriculum grades K-12. This, too, was significant because it was VTEA's initial effort to bring action to the state legislature.

### **Winter 2007 and 2008**

VTEA's president, Kathleen Stansbury, and Marcia Hickey, VCEC board member, requested that the General Assembly study the need for STEM education to be throughout the commonwealth's public school system.





**August 2008**

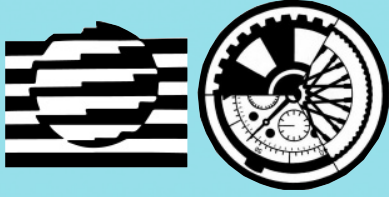
VTEA celebrated its 50th anniversary during the summer conference, August 6-8. The conference was held at the Virginia Beach Resort Hotel and Conference Center. John Ledgerwood, Technology Education Supervisor, Virginia Beach Public Schools, served as the conference chair. Thomas A. Hughes Jr. provided the closing-session keynote address.

**August 2011**

The association changed its name to the Virginia Technology and Engineering Education Association, to be consistent with curriculum development advancements in Virginia and national trends.

**April 9, 2012**

The VCEC was recognized by the Internal Revenue Service as a 501(c)(3) nonprofit organization. George R. Willcox served as the registered agent and incorporator.



# Appendix A: A Strategic Review of Technology Education (Excerpt)



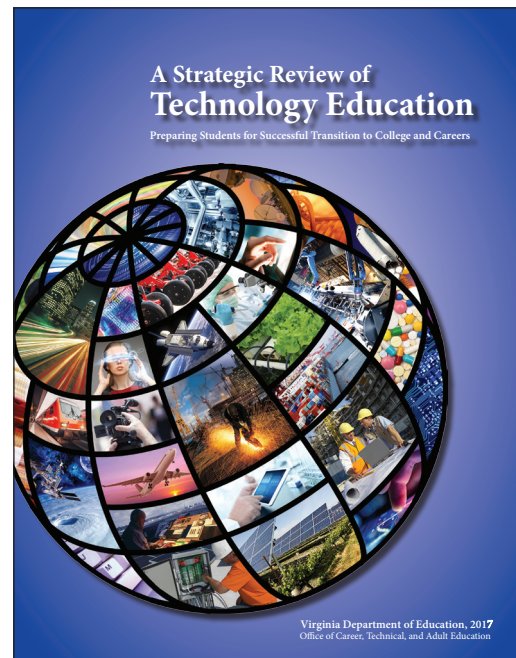


# A Strategic Review of Technology Education: Excerpt

## Introduction

The Technology Education field plays a large role in the science, technology, engineering and mathematics (STEM) movement that currently receives a large amount of emphasis in education. Whether the acronym is STEM, or STEAM to include the arts, Technology Education is the primary delivery method for true inclusion of technology and engineering in the movement. Because technology is ever changing, topics within technology and engineering education change frequently. Laser engravers and 3-D printers are now common additions to any course. As virtual reality becomes more accessible, Modeling and Simulation must include this topic and teachers must use it to demonstrate concepts in other courses.

It has been a long time since the field was looked at in Virginia from a strategic viewpoint, and due to the critical nature of the material, it was decided to undertake a strategic review of Technology Education. The purpose of the review is to provide recommendations to drive change and improvement in courses and delivery that help prepare young people to succeed in careers and future education. It is not intended to imply that Technology Education courses have not made improvements and added new technologies as they become available. Rather, it is a quest to find areas for improvement for all courses, and review the relevancy of courses. Courses must be linked to high skill, high wage and high demand areas while providing the underlying framework of technological literacy that helps all students succeed.



Read the report: [http://www.doe.virginia.gov/instruction/career\\_technical/technology/strategic-review-technology-education.pdf](http://www.doe.virginia.gov/instruction/career_technical/technology/strategic-review-technology-education.pdf)

## Historical Context

The foundation of Technology Education in the United States is attributed to two educational leaders from the 1870s. Calvin Woodward, dean of the polytechnic school at Washington University in Missouri, created the Manual Training School in St. Louis. Simultaneously, John Runkle, president of the Massachusetts Institute of Technology (MIT), introduced manual training into the curriculum for instructional purposes. Manual training was established to be a general education subject for all students, not vocational training, because Woodward and Runkle believed in actively engaging students in the learning process.

In 1904, the field changed its name to industrial arts to better represent the broader content and practices of industry. In practice, the field maintained the active learning environment advocated by Woodward and Runkle as well as notable educational reformers such as John Dewey.

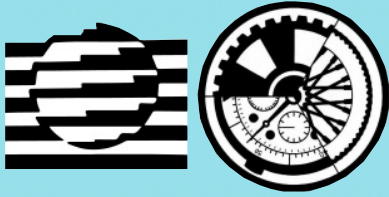


Throughout the 20th century, however, many technology educators believed the field's content should be broadened even further to encompass all technology, not just industrial practice. As a result, in 1985 the field changed its name to Technology Education to reflect this paradigm shift but it continued to be misunderstood on two fronts. First, many still viewed Technology Education as vocational preparation, not general education for all, due to the laboratory-based learning environment. Second, the ambiguity of the word "technology" has caused confusion with related disciplines. Table 2 provides clarification on fields closely related to Technology Education.

Technology Education has changed immensely from 1980s industrial arts. Instead of content based on industrial practice (industrial arts) or the natural world (science), Technology Education studies the human designed world, which is inclusive of technological systems, processes, and artifacts (not just computers) (ITEA/ITEEA, 2000/2007). In 2010, the International Technology Education Association (ITEA) changed its name to reflect this shift and is now called the International Technology and Engineering Educators Association (ITEEA). In response to this name change, many states, teacher preparation programs, and organizations now refer to this K-12 discipline as technology and engineering education (Missouri Department of Elementary and Secondary Education, 2015; Rouch, 2015). Virginia's official program is still called Technology Education, but the state's primary professional education association changed its name to the Virginia Technology and Engineering Education Association (VTEEA) in 2011 to align with the national association.

Developed by the Office of Career, Technical, and Adult Education,  
Virginia Department of Education, Richmond, Virginia © 2017

Principal Investigator, Philip A. Reed, PhD, Old Dominion University



# Appendix B: Virginia Industrial Arts Association History, 1958-1978



*Reprint of the early Industrial Arts Association*

Compiled by the History Committee:

John Frank  
 Thomas A. Hughes Jr.  
 Chester Lane

**FOREWORD**

Industrial Arts became an officially recognized program in Virginia public schools during the 1930-31 school year, when the state Board of Education encouraged the program’s implementation. The program had been offered on a limited basis in a few Virginia schools since 1921 without an official sanction from the state board. The program’s evolution into Industrial Arts began as early as 1903-04, when Manual Training and, subsequently, Manual Arts were first completed in the Richmond City Public Schools. Through the formative years, Industrial Arts teachers sought an organizational tie. During this time teachers, were drawn together through the Virginia Education Association and later the Virginia Vocational Association.

The interest and needs of Industrial Arts teachers caused the Virginia Department of Education (VDOE) to establish and coordinate a Council of Industrial Education Clubs from the early 1940s until 1968. The Industrial Education Club accommodated both Industrial Arts and Trade and Industrial teachers and it was the first significant effort to serve the Industrial Arts teacher. Because the clubs were sponsored by the VDOE, activities dealt primarily with program coordination and idea exchange, rather than with the controversial and substantive issues of Industrial Arts philosophy, curriculum, and political concerns.

Simultaneous with the club’s operation, Industrial Arts teachers formed a section within the Virginia Vocational Association. The group sought to cooperate with vocational education and establish equal program stature with traditional vocational program fields such as Agriculture and Trade and Industrial Education, but parallel status had not been obtained by the mid-1950s.

During the 1950s, discussion intensified among a core of Industrial Arts leaders to pursue the establishment of a state organization to parallel the American Industrial Arts Association (AIAA). In



Joseph A. Schad

**Early Association Presidents**

1958-1961 .....	Joseph A Schad	1972-1974 .....	Armand M. Taylor Jr.
1962-1966 .....	Chester Lane	1974-1975 .....	George Swanik III
1966-1968 .....	Joseph Haslett	1975-1976 .....	Jerry D. Hardy
1968-1970 .....	Robert Clark	1976-1977 .....	William E. Dugger Jr.
1970-1972 .....	Harry L. Johnson	1977-1978 .....	William B. Kern





1957, 22 people established a separate organization solely for the purpose of serving the Industrial Arts profession. Thus, on May 17, 1958, a group of men guided by their ideals, vision, and dedication to what Industrial Arts Education should become, convened to organize the Virginia Industrial Arts Association. Presented here is a brief history of the association during the first 20 years.

## THE FOUNDERS

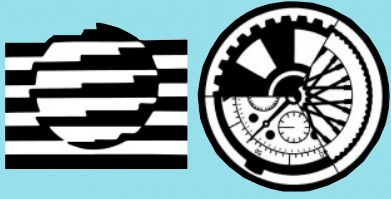


Prompted by the desire to obtain greater status, prestige, and recognition for Industrial Arts in Virginia and to improve the quality of Industrial Arts instruction in Virginia schools, a committee of 22 Industrial Arts teachers, supervisors, and teacher educators was created in 1957 to consider the feasibility of organizing an affiliate of the AIAA. Representing the committee of 22, a group of eight convened at Virginia Education Association headquarters on Saturday, May 17, 1958, and organized what is now the VIAA. The group, which consisted of John Esterly of Henry County Public Schools, Walter L. Griggs of Virginia Tech, Virgil Harris of Fairfax County Public Schools, Aubrey Pennington of Danville City Public Schools, Victor Repp of Arlington County Public Schools, Joseph A. Schad of Virginia Tech, Arthur Schwartz of Fredericksburg City Public Schools, and Frank West of Montgomery County Public Schools, elected as temporary officers Joseph A. Schad (chairman) and Virgil Harris (secretary/treasurer). Unable to

attend the organizational meeting were the following committee members: John B. Bauer, Kenneth E. Dawson, Ronald L. Iler, Chester Lane, Ralph L. Lewis, McKinley Lilly, Russell G. Louis, Albert T. McCown, Donald Peters, Robert Phipps, Harry Rosenbaum, Jack Spigle, C. Glenn Wenner, and Marion Wood.

In October 1958, the newly formed association convened for the first time. The group adopted a temporary constitution, elected officers, and heard an inspiring address by Dr. Kermit Seefeld, AIAA president and professor and chairman of the Department of Industrial Arts Education at the University of California at Santa Barbara. Seefeld's dynamic and fruitful address was titled "Industrial Arts in the New Era."

Joseph A. Schad, AIAA state representative, was elected the first president of the association to serve a two-year term. The group elected John Esterly as first vice president, Frank West as second vice president, and Virgil Harris as secretary-treasurer. Frank West and Virgil Harris were elected to serve three-year terms.



# Appendix C: State and National Representatives







AIASA Founders (from left) John Monroe, John Owens, Marshall O. Tetterton, Rayford Harris, Thomas A. Hughes Jr., and William T. Reed (not pictured).

## Virginia TSA State Advisors

Date	Name and Title(s)
1970-1971	William T. Reed, Co-Founder and Virginia AIASA State Advisor
1970-1971	Rayford Harris, Co-Founder and Co-Virginia AIASA State Advisor
1971-1977	Marshall O. Tetterton, Co-Founder and Virginia AIASA State Director
1977-1978	Dr. Arvid W. Van Dyke, Virginia AIASA State Director
1978-1980	George R. Willcox, Virginia AIASA State Advisor
1981-1983	Dr. L. Bernard Hairston, Virginia AIASA State Advisor
1984-1991	James B. Carey, Virginia AIASA/TSA State Advisor
1992-1993	Peter J. Vernimb, Virginia TSA State Advisor
1993-1996	David B. Magnone, Virginia TSA State Advisor
1996-1997	Jimmie Woods, Virginia TSA State Advisor
2000-2001	Chris Wilson, Virginia TSA State Advisor
2001-2004	Kathleen F. Stansbury, Virginia TSA State Advisor
2005-2006	Yvette J. Edwards, Virginia TSA State Advisor
2008-2011	Latasha M. Watson, Virginia TSA State Advisor
2011-2017	Andy Stephenson, Virginia TSA State Advisor
2018-present	Billie J. Scott, Virginia TSA State Advisor



Willcox



Hairston



Carey



Vernimb



Magnone



Woods



Wilson



Stansbury



Edwards



Watson



Stephenson



Scott

## VTEEA Executive Secretary-Treasurers

Date	Name	Location
1958-1971	Virgil B. Harris Jr.	Fairfax County Public Schools
1971-1977	E. Rodney Fulton	Roanoke City Public Schools
1978-1982	George Litman	Fairfax County Public Schools
1982-1986	Jerry W. Weddle	Roanoke County Public Schools
1986-1993	E. Rodney Fulton	Roanoke City Public Schools
1994-1999	Jerry W. Weddle	Roanoke County Public Schools
1999-2005	David B. Magnone	Henrico County Public Schools
2005-2010	E. Henry Hurlburt	Henrico County Public Schools
2010-2013	Vincent Banks	Augusta County Public Schools
2013-present	Terry Beddow	Norfolk City Public Schools

## VTEEA Executive Directors

Date	Name
1991-1998	Thomas A. Hughes Jr.
1999-2005	David B. Magnone (served as executive director and executive secretary/treasurer)

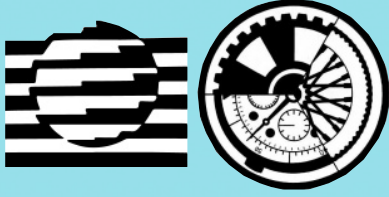
## AIAA/ITEEA State Representatives

Date	Name	Location
1958-1972	Joseph A. Schad	Virginia Tech
1972-1978	Chester R. Lane	Martinsville Public Schools
1979-2000	John Monroe	Suffolk Public Schools
2000-2006	J. Russell Bennett	Richmond Public Schools
2006-present	Mohamad Barbarji, DTE	West Point Public Schools

## Virginia TSA National Corporate Members

Date	Name and Employer
1970-1976	Marshall O. Tetterton, Virginia Department of Education
1977-1979	Dr. Arvid W. Van Dyke, Virginia State University
1979-1985	George R. Willcox, Virginia Department of Education
1985-1991	James B. Carey, Virginia Department of Education
1991-2006	George R. Willcox, Virginia Department of Education
2006-Present	Dr. Lynn Basham, DTE, Virginia Department of Education





# Appendix D: Teachers and Programs of the Year







## Elementary School Teacher of the Year

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- 2018 Dr. Charlotte P. Holter, John Wayland Elementary School, Rockingham County Public Schools
- 2017 Joyce Matthews, Braddock Elementary School, Fairfax County Public Schools
- 2016 Kelley Davis, Stanley Elementary School, Page County Public Schools
- 2015 Winslow Hobbie, Woolridge Elementary School, Chesterfield County Public Schools
- 2014 Megan Martin, Henderson Elementary School, Prince William County Public Schools
- 2013 Joan Harper-Neely, Cooper Elementary School, Hampton City Schools
- 2012 Susan Nagel, Clover Hill Elementary School, Chesterfield County Public Schools
- 2011 Elizabeth Kautz, Rivers Edge Elementary School, Henrico County Public Schools
- 2010 Elizabeth Kirk, Chesterfield County Public Schools
- 2009 Cindy Jones, Clover Hill Elementary School, Chesterfield County Public Schools
- 2008 Martha Newsom Smith, J.B. Watkins Elementary School, Chesterfield County Public Schools
- 2007 Mary Hurst, Cooper Elementary School, Hampton City Schools
- 2006 Janis Churchill, McGaheysville Elementary School, Rockingham County Public Schools
- 2005 Bonnie B. Berry, Ottobine Elementary School, Rockingham County Public Schools
- 2004 Donna L. Smith, Richmond City Public Schools
- 2003 Claudette Humble, Cooper Elementary School, Hampton City Schools
- 2002 Linda Davis, Kiln Creek Elementary School, Newport News Public Schools
- 2001 Joyce Herbin, G.L.H. Johnson Elementary School, Danville Public Schools
- 2000 John Bennett, Mary Munford Elementary School, Richmond Public Schools
- 1999 Patti Fazzi, Cooper Elementary School, Hampton City Schools
- 1998 Linda Harpine, Ottobine Elementary School, Rockingham County Public Schools
- 1997 Deborah Ballard, Ottobine Elementary School, Rockingham County Public Schools
- 1996 Cathy Ney, Margaret Beeks Elementary School, Montgomery County Public Schools
- 1995 Cindy Etchison, Emerick Elementary School, Loudoun County Public Schools



## Middle School Teacher of the Year

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- 2018 Jay Brockman, Goochland Middle School, Goochland County Public Schools
- 2017 Tim Axley, Hidden Valley Middle School, Roanoke County Public Schools
- 2016 David Curry, Byrd Middle School, Frederick County Public Schools
- 2015 Kim Gadson, Mark Twain Middle School, Fairfax County Public Schools
- 2014 Timothy N. Threlkeld, Langston Hughes Middle School, Fairfax County Public Schools
- 2013 Reid Rawls
- 2012 E. Marla Roberts, Lake Braddock Secondary School, Fairfax County Public Schools
- 2011 Garrett Evans, Rachel Carson Middle School, Fairfax County Public Schools
- 2010 Lance Baldwin, Rocky Run Middle School, Fairfax County Public Schools
- 2009 Amy Krellwitz, Lake Braddock Secondary School, Fairfax County Public Schools
- 2008 Mark Bolt, Rachel Carson Middle School, Fairfax County Public Schools
- 2007 Steve Snyder, Robinson Secondary School, Fairfax County Public Schools
- 2006 Nanette M. Dean, Blair Middle School
- 2005 Bonnie Machado, Robinson Secondary School
- 2004 Paul J. Abramson, James Blair Middle School
- 2003 Roger Dowe, Northside Middle School, Norfolk Public Schools
- 2002 Paul Jacobs, T. Benton Gayle Middle School, Stafford County Public Schools
- 2001 Jason Perry, St. Clare Walker Middle School, Middlesex County Public Schools
- 2000 Oliver Holley, Hickory Middle School, Chesapeake Public Schools
- 1999 Wes Walters, Harper Park Middle School, Loudoun County Public Schools
- 1968 R. Edgar Thacker, J.G. Whittner Intermediate School
- 1967 Edward L. Daughtney, Northside Junior High School, Norfolk Public Schools
- 1966 Ronald Walton, Ruffner Junior High School, Norfolk Public Schools
- 1964 Clyde H. Gaddy, Longfellow Intermediate School, Fairfax County Public Schools



## Chester Lane High School Teacher of the Year

---

- 2018 Byron Clemsen, John Hanley High School, Winchester City Public Schools
- 2017 No Recipient
- 2016 Kenneth Bouwens, Goochland High School, Goochland County Public Schools
- 2015 No Recipient
- 2014 Joshua Masley, West Springfield High School, Fairfax County Public Schools
- 2013 Gina Nakahara, Chesapeake Public Schools
- 2012 David Lorenz, Grassfield High School, Chesapeake Public Schools
- 2011 Dana Newcomer, Maury High School, Norfolk Public Schools
- 2010 Chuchun Tsai, Fairfax County Public Schools
- 2009 Michael Martin, George C. Marshall High School, Fairfax County Public Schools
- 2008 Johnny J. Moye, Hickory High School, Chesapeake Public Schools
- 2007 Phillip Harris, Annandale High School, Fairfax County Public Schools
- 2006 Toss Cline, James Madison High School, Fairfax County Public Schools
- 2005 Kenneth Winebarger, Colonial Heights High School, Colonial Heights Public Schools
- 2004 Richard W. Aadahl, Lafayette High School, Williamsburg-James City County Public Schools
- 2003 Allen Patton, Robinson Secondary School, Fairfax County Public Schools
- 2002 Mohammad Barbarji, West Point High School, West Point Public Schools
- 2001 William C. Blough, Fort Defiance High School, Augusta County Public Schools
- 2000 Jerry Ridgeway, Turner Ashby High School, Rockingham County Public Schools
- 1999 Wesley Worley, Covington High School, Covington City Public Schools
- 1994 John Monroe, Lakeland High School, Suffolk Public Schools
- 1993 Sidney A. Rader, Princess Anne High School, Virginia Beach City Public Schools
- 1965 William E. Dugger Jr., Martinsville High School, Martinsville City Public Schools
- 1963 Chester Lane, Martinsville High School, Martinsville City Public Schools
- 1962 Arthur H. Schwartz, James Monroe High School, Fredericksburg City Schools



## Elementary School Program of the Year

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- 2018 Jennie Dean Elementary School, Manassas City Public Schools
- 2017 John C. Meyers Elementary School, Rockingham County Public Schools
- 2016 Stanley Elementary School, Page County Public Schools
- 2015 Providence Elementary School, Prince William County Public Schools
- 2014 Henderson Elementary School, Fairfax County Public Schools
- 2013 Fort Belvoir Elementary School, Fairfax County Public Schools
- 2012 Woolridge Elementary School, Chesterfield County Public Schools
- 2011 Crestview Elementary School, Henrico County Public Schools
- 2010 J.B. Watkins Elementary School, Chesterfield County Public Schools
- 2009 John Wayland Elementary School, Rockingham County Public Schools
- 2008 Cloverhill Elementary School, Chesterfield County Public Schools
- 2007 No Award
- 2006 Watkins Elementary School, Chesterfield County Public Schools
- 2005 Middlesex Elementary School, Middlesex County Public Schools
- 2004 McGaheysville Elementary School, Rockingham County Public Schools
- 2003 Newsome Park Elementary School, Newport News Public Schools
- 2002 Arlington Science Focus School, Arlington County Public Schools
- 2001 J.B. Fisher Model Elementary School, Richmond Public Schools
- 2000 G.L.H. Johnson Magnet School, Danville Public Schools
- 1999 No Award
- 1996 Willard Model School, Norfolk Public Schools
- 1995 George J. McIntosh Elementary School, Newport News Public Schools

Note: Prior to around 1985 there was only one Teacher of the Year Award. That award was presented to a middle school or high school teacher. The recognition of an individual elementary, middle, and high school teacher of the year did not begin until around 1996.



## Middle School Program of the Year

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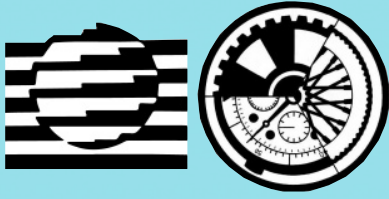
2018	Swift Creek Middle School, Chesterfield County Public Schools
2017	Thoreau Middle School, Fairfax County Public Schools
2016	Falling Creek Middle School, Chesterfield County Public Schools
2015	Stuarts Draft Middle School, Augusta County Public Schools
2014	Louisa County Middle School, Louisa County Public Schools
2013	Thomas Harrison Middle School, Harrisonburg City Public Schools
2012	Washington Irving Middle School, Fairfax County Public Schools
2011	Lanier Middle School, Fairfax County Public Schools
2010	Francis Scott Key Middle School, Fairfax County Public Schools
2009	Breckenridge Middle School, Roanoke City Public Schools
2008	Benjamin Franklin Middle School, Franklin County Public Schools
2007	Herndon Middle School, Fairfax County Public Schools
2006	Williamsburg Middle School, Arlington Public Schools
2005	No Award
2004	Eagle Ridge Middle School, Loudoun County Public Schools
2003	No Award
2002	Northside Middle School, Norfolk Public Schools
1999	Halifax County Middle School, Halifax County Public Schools
1995	St. Clara Walker Middle School, Middlesex County Public Schools
1994	Prince William County Public Schools



## High School Program of the Year

---

2018	Cosby High School, Chesterfield County Public Schools
2017	Carver College and Career Academy, Chesterfield County Public Schools
2016	No Award
2015	No Award
2014	Granby High School, Norfolk Public Schools
2013	Oakton High School, Fairfax County Public Schools
2012	McLean High School, Fairfax County Public Schools
2011	(No Award)
2010	Grassfield High School, Chesapeake Public Schools
2009	West Potomac High School, Fairfax County Public Schools
2008	No Award
2007	No Award
2006	No Award
2005	West Springfield High School, Fairfax County Public Schools
2004	No Award
2003	Landstown High School, Virginia Beach City Public Schools
2002	Hickory High School, Chesapeake Public Schools
2001	West Point High School, West Point Public Schools
2000	Potomac Falls High School, Loudoun County Public Schools
1999	Maury High School, Norfolk City Public Schools
1998	Lafayette High School, Williamsburg-James City County Public Schools
1995	William Fleming High School, Roanoke City Public Schools
1986	Boushall Middle School, Richmond Public Schools



# Appendix E: Leadership and Service Awards





## Lynn P. Barrier Engineering Leadership Award

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In August 2003, the VTEEA Board of Directors established the Lynn P. Barrier Engineering Leadership Award for distinguished service pertaining to the development, implementation, advancement, and promotion of engineering in K-12 education. The award is named in honor of Dr. Lynn P. Barrier, whose leadership and initiative to advance the study of engineering in K-12 education exemplified innovative vision, loyalty, and dedicated service to Technology Education.

- 2014 Dr. Glen Bull, University of Virginia, Charlottesville
- 2011 Dr. William E. Dugger Jr., Virginia Tech (retired)
- 2008 Virginia Whiting, Richmond Public Schools (retired)
- 2007 Linda Harpine, Rockingham County Public Schools
- 2006 George R. Willcox, Virginia Department of Education

## Academy of Scholars Citation

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The Academy of Scholars citation is the highest recognition that the VTEEA can bestow. To qualify, an individual must have gained prominence in and brought honor to the profession of technology and engineering education. The recipient must be a VTEEA member. The awardee will be granted membership in the Academy of Scholars of the VTEEA. Individuals will be considered based on teaching experience; leadership roles in VTEEA and other affiliated organizations; professional development activities at local to international levels, including presentations and conducting seminars/workshops; and recognition by peers.

- Dr. E. Allen Bame
- Dr. William E. Dugger Jr.
- Linda Harpine
- Robert F. Head
- Thomas A. Hughes Jr.
- Dr. Johnny J. Moye
- David B. Magnone
- John Monroe
- Allen Patton
- Dr. John M. Ritz
- Dr. Kendall N. Starkweather
- Marshall O. Tetterton
- Dr. Arvid W. Van Dyke
- George R. Willcox



## Meritorious Service Awards

---

- 2011 Kris Martini, Arlington County Public Schools
- 2005 David B. Magnone, Highland Springs High School, Henrico County Public Schools
- 1998 Dr. Arvid W. Van Dyke, James Madison University
- 1995 Charles V. Reynolds, Thoreau Middle School, Fairfax County Public Schools

## Certificate of Recognition

---

- 2012 Ted Feineis
- 2008 Tom Clater, Diversified Educational Systems
- 1999 Goodheart-Willcox Publisher
- 1997 Hearlihy & Company
- 1997 George R. Willcox, Virginia Department of Education
- 1997 Ronald A. Williams, Ronald A. Williams LTD

## Special Achievement

---

### Non-Degree Research

- 2012 Dr. Petros Katsioloudis, Old Dominion University
- 1997 Dr. William E. Dugger Jr., Virginia Tech
- Sidney A. Rader, Princess Anne High School, Virginia Beach City Public Schools

### Promotion of the Teaching Profession to Students

- 1997 John Monroe, Lakeland High School, Suffolk Public Schools
- Sidney A. Rader, Princess Anne High School, Virginia Beach City Public Schools

### Public Relations

- 2012 Michael Piccone, Prince William County Public Schools
- 1997 Robert F. Head, Technology Education Supervisor
- 1992 George R. Willcox, Virginia Department of Education
- Sidney A. Rader, Princess Anne High School, Virginia Beach City Public Schools

### Publishing

- 1997 Dr. Walter F. Deal, III, Old Dominion University
- 1997 Fred Hadley, Virginia Beach Public Schools
- 1997 Dr. John M. Ritz, Old Dominion University
- 1997 Pat Ways, Norfolk Public Schools
- Sidney A. Rader, Princess Anne High School, Virginia Beach City Public Schools

### Work with TSA

- 2012 Kathleen Stansbury, Henrico County Public Schools
- 1997 Duane Bushey, Maury High School, Norfolk Public Schools
- 1996 Sidney A. Rader, Princess Anne High School, Virginia Beach City Public Schools

### Outstanding College Student of the Year

- 2012 Chris Burns, Old Dominion University



## John Monroe Outstanding Service Awards

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- 2017 Andy Stephenson, Virginia TSA State Advisor
- 2015 Dr. Johnny J. Moyer, Chesapeake Public Schools
- 2014 Dr. William G. Wyatt, John Tyler Community College
- 2008 Tony Casipit, Fairfax County Public Schools
- 2006 Michael Piccione, Battlefield High School, Prince William County Public Schools
- 1998 David B. Magnone, Bailey Bridge Middle School, Chesterfield County Public Schools
- 1990 Dr. E. Allen Bame, Virginia Tech

## Presidential Citation

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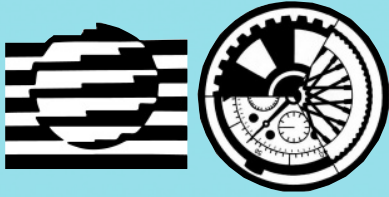
- 2015 Jesse W. White, Hampton City Schools
- 2014 Mark S. Hornick, Chesterfield County Public Schools
- 2012 Debra Shapiro, Suffolk Public Schools
- 2011 Vincent Banks, VTEA Executive Secretary/Treasurer
- 2008 Patricia Jolly, Hampton City Schools
- 2006 Tony Casipit, Fairfax County Public Schools
- 2005 Kathryn Keranen, Fairfax County Public Schools
- 2003 George R. Willcox, Virginia Department of Education
- 2002 Michael J. Logan, NASA-Langley Center, Hampton
- 1999 Dr. Walter F. Deal III, Old Dominion University

## Higher-education Institutions

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Until 1998-99, the VTEC maintained an active annual work agenda that engaged all of the universities. Below is one of the last group pictures that includes James Madison University, Norfolk State University, Old Dominion University, Virginia State University, Virginia Tech, and the VDOE. The programs at George Mason University and Hampton University had closed at this point.





# Appendix E: VTEEA Affiliations





The VTEEA includes several councils and maintains association with other related organizations, including: The Virginia Council on Technology Teacher Education (VCTTE), the Virginia Council on Technology Education Supervision (VCTES), and the Virginia Children’s Engineering Council (VCEC). Additionally, VTEEA also supports the Technology and Engineering Education Collegiate Association (TEECA).

### International Technology and Engineering Educators Association (ITEEA)



ITEEA is the professional organization for technology, innovation, design, and engineering educators. Its mission is to promote technological literacy for all by supporting the teaching of technology and engineering and promoting the professionalism of those engaged in these pursuits. ITEEA strengthens the profession through leadership, professional development, membership services, publications, and classroom activities. The ITEEA serves as the parent organization to the VTEEA and similar affiliates in other states and internationally.

### Virginia Council on Technology Teacher Education (VCTTE)

Formed October 10, 1973, as the Industrial Arts Teacher Education Council, the original institutional members included Norfolk State University, Old Dominion University, Virginia Tech, Virginia State University, and the VDOE. In the mid-1980s, James Madison University joined the council.

The council was formed to provide an interchange of ideas and concerns among the faculties of teacher education programs approved to prepare technology and engineering teachers and with the Technology Education Service of the VDOE. It seeks to ensure that graduates of approved programs are prepared to teach technology and engineering courses offered in Virginia’s public schools.

The mission of the VCTTE is, through cooperative efforts among faculties of institutions preparing technology and engineering teachers and the Technology Education Service, to plan and provide for leadership which serves the educational needs of Virginia public school technology and engineering teachers. Today, the principal leadership for undergraduate technology and engineering teacher education programs in Virginia is provided by ODU. For additional information visit: <http://education.odu.edu/ots/academics/undergrad/tech.shtml>. Programs in technology and engineering education are offered at ODU and Virginia Tech.

### Virginia Council on Technology Education Supervision (VCTES)



VCTES was established to provide a forum for local administrators of Technology Education programs to communicate, leverage resources, and advance the delivery of Technology Education across the Commonwealth. Originally, the organization comprised itself of only supervisors with 100 percent responsibility for Technology Education. Today, several CTE directors participate in the organization, which enhances the founding purpose of VCTES.

### Technology and Engineering Education Collegiate Association (TEECA)



TEECA is for college students who are preparing for their careers as public school technology and engineering teachers. Participating in the competitive events is a learning opportunity for college



students to increase their experience, skills, and knowledge in areas including teamwork, technical/design interests, problem-solving, project management, and coaching students in design and problem-solving teams. While Virginia does not currently have a TEECA affiliate, in the past, ODU fielded a team. Many of the current teachers in the field have served as TEECA officers and members.



### **Virginia Children’s Engineering Council (VCEC)**

Formally known as the Virginia Council on Elementary School Technology Education (ESTE), VCEC focuses on providing teachers in grades K-5 with professional development experiences that enable them to help children; explore how people create, use, and control technology; apply knowledge of mathematics, science, English, and history and social studies in solving problems associated with technology; use tools and materials to explore personal interests with technology; and exhibit self-confidence through the use of technology. For more than 22 years, the VCEC has worked assiduously to help educators provide students with authentic opportunities so they can begin to think freely, critically, and cooperatively.

The VCEC has three major components:

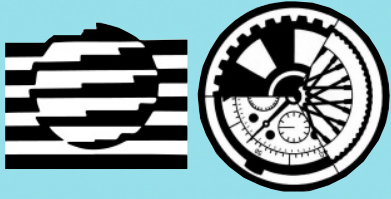
1. staff development for K-5 teachers focusing on strategies that assist children to create, use and control technology;
2. teacher demonstrations of techniques for infusing design, engineering, and technology activities into the Standards of Learning; and
3. a showcase of technology-based educational resources.

At the VCEC-sponsored Virginia Children’s Engineering Convention, special interest sessions and workshops are provided, and opportunities include educational vendor exhibits and keynote speakers during each general session. Participation in the annual convention has grown from 50 to 700 attendees. The VTEEA Board of Directors continues to include a VCEC representative. The VCEC offers summer workshops in different areas of the state each year.

### **Virginia Association for Career and Technical Education (Virginia ACTE)**



The Virginia Association for Career and Technical Education (Virginia ACTE) previously known as the Virginia Vocational Association advocates for, supports, and serves career and technical education across Virginia. The VTEEA governmental relations board member usually serves on the Virginia ACTE board.



# Appendix F: Technology Education Web Resources





## Technology Education in the Nation

**ITEEA:** <https://www.iteea.org/>

## Technology Education in Virginia

**VTEEA:** <https://vteea.org/> This website serves as a tool to promote and to inform others about Technology Education. It is ever growing and always changing. With help and feedback from others (students, teachers, advisors, business professionals, and passers-by), this site will continue to flourish and succeed in achieving its goal. The site history can be found at the following url: <https://vteea.org/site.php>. The original website was created by Dr. Walter Deal and George R. Willcox.

**VTEEA Newsletters:** Recent association newsletters are online and can be found at <https://vteea.org/technologize.php>.

**VTEEA History:** Previous association history booklets have been scanned and published online at the following links: <https://www.vteea.org/History/History1930-1980.pdf>

<https://www.vteea.org/History/History1958-1978.pdf>

<https://www.vteea.org/History/History1969.pdf>

**VDOE website for Technology Education:** [http://www.doe.virginia.gov/instruction/career\\_technical/technology/index.shtml](http://www.doe.virginia.gov/instruction/career_technical/technology/index.shtml)

**CTE Resource Center Technology Education courses:** <http://www.cteresource.org/verso/categories/science-technology-engineering-and-mathematics>

## Higher-education Institutions

ODU - Technology Education Degree Program: <https://online.odu.edu/programs/occupational-and-technical-studies-technology-education>

Virginia Tech - Technology Education & STEM Degree Program: <https://liberalarts.vt.edu/departments-and-schools/school-of-education/academic-programs/integrative-stem-education.html>

## Virginia Council on Technology Teacher Education

VCTTE Historical Resources: <https://vteea.org/vctte/>

Council on Technology and Engineering Teacher Education: <https://vtechworks.lib.vt.edu/handle/10919/5531>.

## Technology Student Association

This is the official website for the career and technical student organization. The site is kept up to date with calendars, events, contest winners, and student leadership.

**National TSA:** <http://tsaweb.org/>

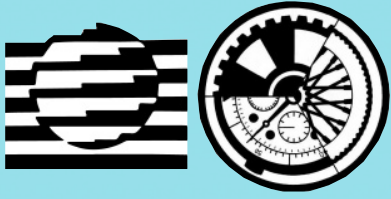
**Virginia TSA:** <http://virginiatsa.org/>

## Blogs with Photographic History of VTEA / VTEEA

<http://vtea-history.blogspot.com/>

A blog, created by Ron Vickers, includes a photo and text history of the VTEEA. It primarily features photographs from summer conferences from 2009 to the date of this printing.





# Appendix G: Technology Education Enrollments, 2005-2015



Virginia Department of Education  
Technology Education Enrollments 2005-2015

Course #	Course	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Totals
8438	ADVANCED DRAWING a DESIGN	42		603	726	898	949	842	868	919	5,847	
8427	ADVANCED MANUFACTURING SYSTEMS II	216	281	207	204	277	220	170	161	154	2,140	
8466	ADVANCED TECHNOLOGY STUDIES	199	184	508	74	56	194	45	28		1,357	
8428	AEROSPACE ENGINEERING - PLTW					17	41	17	13	66	154	
8487	AEROSPACE TECHNOLOGY I				170	312	305	479	386	285	2,349	
8488	AEROSPACE TECHNOLOGY II					86	107	23	43	34	325	
8492	ARCH DRAWING a DESIGN - 18 WKS	166	146	96	148	80	188	135	79	215	2,081	
8437	ARCH DRAWING a DESIGN - 36 WKS	2,539	2,979	2,739	2,867	2,793	2,417	2,363	2,228	1,426	23,793	
8467	BIOENGINEERING	47	15					23	1	15	101	
8411	BIOTECHNOLOGY FOUNDATIONS							51	72	263	366	
8468	BIOTECHNOLOGY FOUNDATIONS	90	39	39	142	73	100	53			536	
8475	CAREERS & YOU GR 6-7	2,432	2,724								5,156	
8430	CIVIL ENGINEERING a ARCHITECTURE - PLTW						56	26	49	44	138	
8418	COMMUNICATION SYSTEMS - 18 WKS	3,844	3,704	3,677	3,693	2,707	2,665	2,333	3,068	2,327	20,045	
8415	COMMUNICATION SYSTEMS - 36 WKS	1,405	1,788	1,530	1,471	1,634	1,442	1,151	1,180	1,261	13,950	
8442	COMPUTER INTEGRATED MANUFACTURING - PLTW	36	29	30	62	48	98	80	88	97	711	
8431	CONSTRUCTION TECHNOLOGY - 36 WKS	3,180	3,212	3,055	2,615	2,410	2,676	2,826	2,531	2,009	26,613	
8432	CONSTRUCTION TECHNOLOGY - 18 WKS	384	370	281	269	227	351	236	113	519	2,521	
8440	DIGITAL ELECTRONICS - PLTW	44	34	75	65	278	409	304	248	367	2,156	
8459	DIGITAL VISUALIZATION	282	316	375	395	679	780	776	812	808	6,040	
8417	ELECTRONICS SYSTEMS I - 18 WKS	145	73	36	36	18	54	54	39	6	532	
8416	ELECTRONICS SYSTEMS I - 36 WKS	2,349	2,265	1,930	1,896	1,572	1,523	1,533	1,205	1,137	16,343	
8412	ELECTRONICS SYSTEMS II	535	602	534	457	368	438	428	396	190	4,344	
8413	ELECTRONICS SYSTEMS III	44	889	98	128	67	40	90	76	46	1,478	
8448	ENERGY a POWER - 36 WKS	54	35	37	113	83	53	101	20	19	523	
8495	ENERGY AND POWER - 18 WKS	534	446	503	460	414	408	306	356	482	4,196	
8436	ENG DRAWING a DESIGN - 36 WKS	2,528	2,649	2,462	1,960	2,220	2,023	1,890	1,874	1,742	20,735	
8493	ENGINEERING DRAWING a DESIGN - 18 WKS	91	213	21	37	12	41	107	130	350	1,538	
8451	ENGINEERING ANALYSIS a APPLICATIONS II				2	16	64	29	235	212	448	
8452	ENGINEERING CONCEPTS a PROCESSES III						16	36	36	161	220	
8443	ENGINEERING DESIGN AND DEVELOPMENT - PLTW	13	48	25	33	37	65	108	132	152	820	
8450	ENGINEERING EXPLORATIONS I				24	23	25	398	976	2,618	3,489	
8453	ENGINEERING PRACTICUM IV					27	43	92	322	181	347	
8491	ENGINEERING STUDIES	326	433	497	499	555	615	544	429	680	5,089	
8409	FORENSIC TECHNOLOGY										21	
8423	GEOSPATIAL TECHNOLOGY I	170	189	256	281	335	285	272	298	223	2,600	
8424	GEOSPATIAL TECHNOLOGY II					7	18	5	19	83	165	
8419	GLOBAL LOGISTICS & ENTERPRISE SYSTEMS I										7	
8458	GRAPHIC COMM SYSTEMS	1,298	1,251	1,339	1,367	1,351	1,548	1,213	1,109	830	12,159	
8494	GRAPHIC COMM SYSTEMS - 18 WKS	414	181	359	286	276	278	703	207	925	4,210	
4585	IB DESIGN TECHNOLOGY I									106	127	
8474	IMAGING TECHNOLOGY	1,219	1,689	1,468	1,837	2,081	2,437	2,311	2,065	2,006	18,372	
8472	INDUSTRIAL OCCUPATIONAL EXPLORATION - 18 WKS	128	36	109	814	425	44	24	11	95	1,686	
8473	INDUSTRIAL OCCUPATIONAL EXPLORATION - 36 WKS	705	313	373	417	196	423	55	68	34	2,584	
8496	INFORMATION TECH IN PROD SYSTEMS	13	19	30	30	21	27	73	62		245	
8490	INTRO TO ENGINEERING	1,060	1,465	1,371	1,606	1,698	1,658	1,513	1,410		11,781	
8484	INTRO TO TECHNOLOGY - 12 WKS	5,752	4,883	4,534	4,344	5,385	5,976	4,219	3,916	1,490	43,361	
8482	INTRO TO TECHNOLOGY - 18 WKS	5,827	6,793	6,446	4,840	4,760	5,593	5,688	5,912	6,602	57,672	
8483	INTRO TO TECHNOLOGY - 36 WKS	2,304	2,995	2,577	1,150	946	985	1,932	1,472	746	15,307	
8480	INTRO TO TECHNOLOGY - 6 WKS									8,071	9,395	
8481	INTRO TO TECHNOLOGY - 9 WKS	31,716	29,256	32,797	30,977	26,934	23,181	22,797	22,350	15,212	248,249	
8439	INTRODUCTION TO ENGINEERING DESIGN - PLTW	214	262	300	483	750	1,011	1,307	1,352	2,130	9,721	
8485	INVENTIONS a INNOVATIONS - 12 WKS	4,839	4,333	4,601	4,731	3,748	4,141	6,366	6,105	1,697	41,655	

Virginia Department of Education  
Technology Education Enrollments 2005-2015

Course #	Course	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	Totals
8464	INVENTIONS a INNOVATIONS - 18 WKS	17,049	16,827	16,741	16,041	17,347	18,192	18,922	19,145	14,733	13,066	168,063
8461	INVENTIONS a INNOVATIONS - 36 WKS	398	362	734	267	170	253	194	820	346	177	3,721
8456	INVENTIONS a INNOVATIONS - 6 WKS									4,330	4,688	9,018
8454	INVENTIONS a INNOVATIONS - 9 WKS									4,102	4,034	8,136
8426	MANUFACTURING SYSTEMS I - 18 WKS	244	334	226	304	219	187	163	81	101	191	2,050
8425	MANUFACTURING SYSTEMS I - 36 WKS	1,584	1,296	1,244	1,366	1,248	1,193	1,173	959	924	1,127	12,094
8478	MATERIALS a PROCESSES TECHNOLOGY - 18 WKS	652	551	516	509	334	318	386	213	381	850	4,710
8433	MATERIALS a PROCESSES TECHNOLOGY - 36 WKS	2,130	2,133	2,044	1,866	1,993	2,027	2,313	1,850	1,733	1,323	19,412
8460	MODELING a SIMULATION TECHNOLOGY					247	22	104	74	131	233	811
8444	POWER a TRANSPORTATION - 18 WKS	521	402	496	444	486	435	324	387	506	414	4,415
8445	POWER a TRANSPORTATION - 36 WKS	511	468	440	346	205	224	317	150	91	21	2,773
8411	PRINCIPLES OF ENGINEERING - PLTW	94	98	153	322	486	593	559	482	674	955	4,416
9811	PRINCIPLES OF TECHNOLOGY I	1,676	939	875	737	534	692	544	550	596	572	7,715
9812	PRINCIPLES OF TECHNOLOGY II	525	662	550	476	474	513	522	486	487	387	5,082
8446	PRODUCTION SYSTEMS - 18 WKS			17						59	157	233
8447	PRODUCTION SYSTEMS - 36 WKS	1,163	1,069	1,073	809	824	1,116	904	1,119	1,097	1,094	10,268
8408	RENEWABLE ENERGY								14		4	18
8414	SUSTAINABLE AND RENEWABLE TECHNOLOGIES							23	197	112	108	440
8434	TECH DRAWING a DESIGN - 18 WKS	783	773	405	344	578	556	574	593	382	611	5,599
8435	TECH DRAWING a DESIGN - 36 WKS	9,069	8,618	8,963	8,814	7,547	7,376	7,466	7,018	5,938	6,521	77,330
8486	TECHNOLOGICAL SYSTEMS - 12 WKS	582	260	805	900	1,124	1,398	2,550	1,986	2,313	1,634	13,552
8463	TECHNOLOGICAL SYSTEMS - 18 WKS	13,325	13,181	12,460	12,216	12,059	11,784	10,889	12,241	4,459	7,588	110,202
8462	TECHNOLOGICAL SYSTEMS - 36 WKS	2,948	2,525	2,903	2,364	2,142	2,474	2,380	2,034	1,484	1,396	22,650
8477	TECHNOLOGICAL SYSTEMS - 6 WKS									6,116	3,618	9,734
8457	TECHNOLOGICAL SYSTEMS - 9 WKS									811	701	1,512
8407	TECHNOLOGY ASSESSMENT - 36 WKS	152	213	236	247	199	146	249	233	126	73	1,874
8406	TECHNOLOGY ASSESSMENT - 18 WKS	63	89	14	26	11	20	9	34	0	0	266
8498	TECHNOLOGY ED -- DUAL ENROLLMENT	66	90	42	95	179	177	261	41	442	90	1,483
8471	TECHNOLOGY EDUCATION - DEVELOPMENT	132	144	175	159	4	4	91	88	38	31	862
8469	TECHNOLOGY EDUCATION - PREPARATION	207	102	52	69	147	8	17	17	27	15	644
8402	TECHNOLOGY FOUNDATIONS - 18 WKS	945	906	388	668	890	1,084	971	1,165	1,470	920	9,407
8403	TECHNOLOGY FOUNDATIONS - 36 WKS	5,107	5,585	5,423	4,778	4,622	4,558	4,709	3,928	3,085	3,415	45,210
8420	TECHNOLOGY OF ROBOTIC DESIGN - 18 WKS	65	42	84	42		9				64	306
8421	TECHNOLOGY OF ROBOTIC DESIGN - 36 WKS	265	339	348	310	401	275	349	401	625	710	4,023
8465	TECHNOLOGY STUDIES	641	388	470	533	202	327	420	280	21		3,282
8404	TECHNOLOGY TRANSFER - 18 WKS	328	139	128	262	207	295	207	233	180	50	2,029
8405	TECHNOLOGY TRANSFER - 36 WKS	834	859	760	730	671	789	731	727	471	669	7,241
8497	VIDEO AND MEDIA TECHNOLOGY	247	535	683	690	781	803	1,026	983	838	699	7,285
	<b>Totals</b>	139,448	137,068	134,792	128,293	122,982	123,645	125,745	123,109	118,135	114,815	



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