

Fall 2019

Monarch Science Observer, Volume 1

College of Sciences, Old Dominion University

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Monarch Science Observer

ODU College of Sciences Newsletter

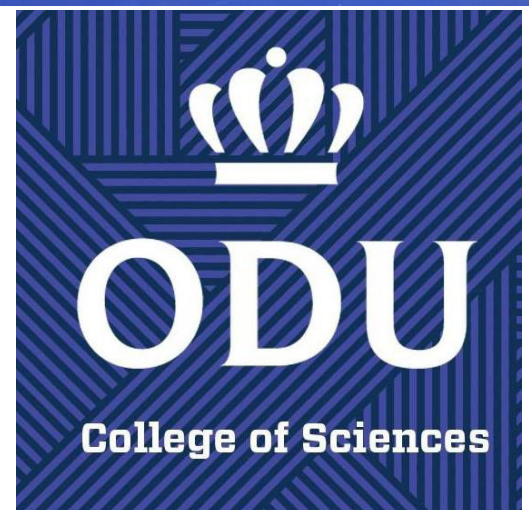


PHOTO:
Students from Norfolk Public Schools tour a physics lab at ODU as part of Science Connection Day.

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Fall 2019
Volume 1



Message from Dean Dodge

It was great to see alumni back in town for Homecoming 2019! In this newsletter we feature alumnus Michael Le '80, whose story is inspiring and unusual. We also report on the incredible, campus-wide celebration of the 50th anniversary of the Apollo moon landing, which featured the Virginia Symphony Orchestra playing on Kaufman mall. Our outreach and recruiting activities have been increasing. Check out the HALES summer program and the Science Connection Day that was held recently on Oct 19.

Please read about the incredibly promising research of faculty member Dr. Hameeda Sultana from Biological Sciences on disease transmission through mosquitos and the work of undergraduate researcher, Abel Weidaregay from computer science. One of our priorities is to increase undergraduate research and internship opportunities for our students. These experiences make a huge difference to the skills that students bring to their job or advanced schooling after they graduate. Please consider supporting the college financially so that we can do more for our students.

One way to do that is to name a space in our new Chemistry Building, which will open in Fall 2020. I hope you like the new look of our newsletter! We are eager to hear from you. Please follow us on Facebook, Twitter, Instagram, or YouTube.



Opportunity Networking Event

Internship, Volunteer or Research Opportunities

November 21, 2019 11am to 2pm

Register via [EventBrite](#)

A photograph of Michael Le, a man with dark hair wearing a blue blazer over a light blue shirt, standing in front of the large blue and white Old Dominion University seal. The seal features a shield with a building and a cross, surrounded by the text 'OLD DOMINION UNIVERSITY'.

Featured Alumnus: Michael Le

“Find a niche within a niche.”

**Michael Le
ODU Computer Science
Class of 1980**

Alumnus Michael Le is founder and CEO of Advantco International, LLC in Raleigh, North Carolina, but he returned to Old Dominion University recently to speak to budding entrepreneurs as part of a computer science lecture series. Le comes from very humble beginnings and he did not shy away from sharing how he ended up at ODU.

His life was capsized after the end of the Vietnam War. Le fled Vietnam on a boat meant to carry 200 passengers, but it transported 800 refugees from Vietnam to Subic Bay, Philippines. After more chaos on the high seas, Le arrived at Guam. He, like hundreds of thousands of Vietnamese, waited for help. “Guam Island was the first refugee camp for me,” said Le “I lived under a big tent sharing it with many people.” After weeks of uncertainty Le was flown to a military post that had been temporarily reoutfitted. “I ended up staying in one of those refugee centers back in 1975, Indian Town Gap Pennsylvania,” Le said “and I was sponsored by a person in the Navy to come to Norfolk, and that’s when I learned about ODU.”

As an undergraduate Le said he worked “four part-time jobs while taking a full course load.” Le graduated from ODU’s College of Sciences with a bachelor of science in computer science in 1980. Thanks to a successful internship, his first job was with IBM in Downtown Norfolk. “I was a systems engineer trainee.” Le’s career catapulted after leaving IBM. He is an incredibly hard worker. He’s able to recognize where the gaps exist in technology, and has since founded and sold two multi-million-dollar companies.

Currently, he is the founder and CEO of Advantco International, LLC. Le told computer science students that, “being knowledgeable with computer science is the best thing you could have in technology; you’re not just dealing with hardware, but you’re dealing with what drives the software.” During his lecture, Le shared practical advice on how to build a potentially profitable idea into a thriving startup. The students appreciated his humility and honesty, seeking additional advice after the talk. He encouraged ODU’s computer science students to “find a niche within a niche” like he did.

Google Engineers Come to ODU



Photo: (L-R)

MyKayla Moore, Computer Science ('20)
Shantoya Ward, Google Program Manager, Corp Eng SRE

Google Engineers from New York and California came to ODU on October 10th to share information about how to ace a tech interview. They held three different sessions for students from ODU and Norfolk State University. The sessions included:

- Demystifying the Tech Interview
- Day in the Life of a Googler
- The Tech Challenge

The College of Sciences would like to thank the Career Development Center for partnering with us to make this event a huge success.

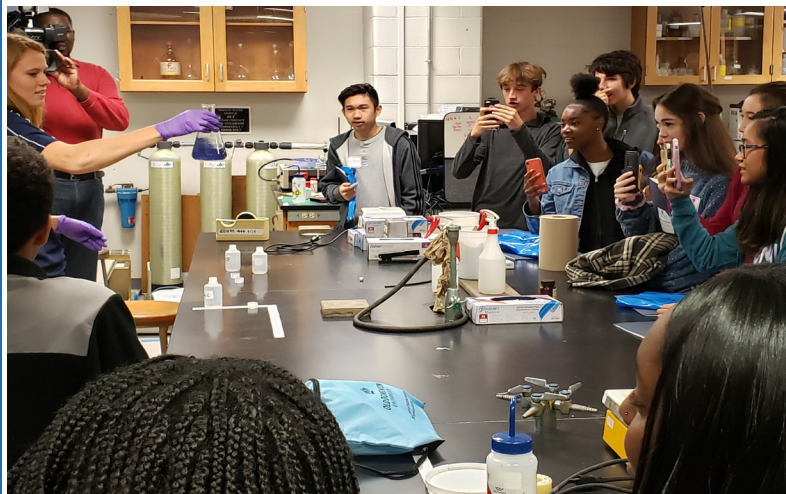


Photo: (L-R)

Allen Calderwood
Google Software Engineer
and Karthik Calanji Sridhar
ODU Computer Engineering ('20)

Science Connection Day

ODU's College of Sciences welcomed more than 75 high school juniors and seniors from Norfolk Public Schools to our first Science Connection Day held on Saturday, October 18. Organizers, Dr. Raúl Briceño and Dr. Nora Noffke, both professors in the College of Sciences spent months planning this tailored event. "I want ODU to be in the forefront of the minds of local top students when deciding to follow a career in science," said Briceño. He feels strongly about diversifying science. "This event is a small step towards enhancing the presence of historically underrepresented communities in the sciences," said Briceño. ODU has a lot to offer students seeking to go to a research-focused university. "We wanted to reach out to local high schools because there are a lot of talented students in the area and we wanted to get their bright minds to campus," said Noffke. Thank you to Norfolk Public School students, teachers, and parents along with ODU faculty and staff for making the first Science Connection Day such a memorable day.



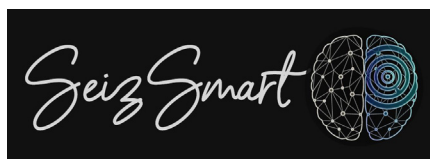
Students from Norfolk Public Schools see a science experiment inside one of ODU's chemistry labs.

[Click here to watch "Science Connection Day"](#)

Undergraduate Research Spotlight



Abel Weldaregay
Computer Science
Class of May 2020



Abel Weldaregay is a computer science student. Weldaregay created an app for people who suffer from epilepsy. SeizSmart is envisioned to be a mobile application for detecting, tracking, and reporting epileptic seizures in real time. SeizSmart will allow users to notify their emergency contacts in cases where they are having a seizure. It will also provide users the ability to view data collected from the smartwatch sensors.

SeizSmart is designed to be an application that will run both on the smartwatch and the smartphone. The smartwatch application will use the 3-axes of acceleration, gyroscope, and heart rate readings to build a trained neural network that will determine when a user is having a seizure. The smartphone component will be able to build visualizations from the data collected from the smartwatch, display alerts in cases where a seizure is detected, and give users the ability to configure their emergency contacts. Check out his website: <https://www.cs.odu.edu/~411silver/>.

Biomedical Meets Machine Learning

The College of Sciences hosted a Distinguished Biomedical Research Seminar Series speaker on October 4, 2019, Dr. Richard Scheuermann, the Director of the J. Craig Venter Institute in La Jolla, California. Scherermann's visit was part of a new lecture series that is sponsored by a consortium of Colleges and Centers at ODU that participate in biomedical research. Dr. Scheuermann is an expert in both biomedical research and bioinformatics. He received a BS in Life Sciences from the Massachusetts Institute of Technology, and a PhD in Molecular Biology from the University of California, Berkeley. After completing his doctoral research, he accepted an independent research position at the Basel Institute for Immunology in Basel, Switzerland. In 1992, he joined the faculty in the Department of Pathology at the University of Texas Southwestern Medical Center in Dallas where he rose to the rank of Professor with tenure. In 2001, he made a career shift into the discipline of bioinformatics, initiated with a sabbatical year at the San Diego Supercomputer Center. In 2012, Dr. Scheuermann moved to San Diego to become the Director of Informatics at JCVI, and in 2016 was promoted to Director of the La Jolla Campus.

While here at ODU, Dr. Scheuermann met with a number of faculty members, had lunch with graduate students in ODU's Biomedical Sciences Ph.D. program, and dinner with Dean Dodge. His talk, entitled "Single cell genomics and machine learning to understand the cellular complexity of human brain", was of such interest that, although we planned for 60 people, we had to bring in extra seating! Approximately 80 people attended the lecture, and a significant number stayed for the reception afterward to chat with Dr. Scheuermann. We plan to sponsor another lecture in the Spring semester, so stay tuned!



Photo: (L-R): Dean Gail Dodge, Dr. Richard Scheuermann and Associate Dean Dayle Daines

ODU Celebrates Apollo 50th Moon Landing with Hampton Roads

Hampton Roads residents celebrated the 50th Anniversary of the Apollo Moon Landing at ODU. The event featured planetarium shows, games, and science activities for people of all ages. The highlight was a concert by the Virginia Symphony Orchestra, which performed a selection of space-themed pieces on Kaufman Lawn.



HALES Program Heats Up



The High Achieving Latinx in Engineering and Sciences (HALES) program is a university-wide initiative to increase the presence of outstanding Latinx students in the STEM-H fields. HALES was created after some ODU faculty and staff attended the IberoAmerican Physics Olympiad at the University of Puerto Rico in Mayaguez (UPR-M), co-sponsored by ODU in 2018.

ODU organized a week-long event in the summer of 2019. During the week, nine talented students from Puerto Rico met faculty and researchers from the Colleges of Science and Engineering, spent a day at Jefferson Lab, and at NASA Langley. At the end of the week, the students participated in oral and written competitions where they were able to demonstrate the knowledge gained during the week. Plans are being made for a HALES2020 summer program which will be open to Latinx in Virginia.

Pioneering Faculty Research



Pioneering research from Dr. Sultana's laboratory has shown that viruses infecting mosquitoes or ticks use "exosomes" (small membrane-bound vesicles that play various roles in cell-to-cell communication) to transmit themselves during a blood meal to people and other animals. The viruses she studies, known as "flaviviruses," include dengue, Zika, Langat and West Nile virus. Her results indicate that exosomes from infected mosquitoes or ticks contain viral nucleic acids and proteins that are required for infection of human skin and blood cells, and that facilitate the replication of these viruses. This is the first time that the mechanism of viral transmission that occurs when an infected mosquito or tick takes a blood meal from a host has been shown and represents a breakthrough in our understanding of how these viruses are spread.

Her work on this subject has been published in PLOS Pathogens and has also been highlighted in media services such as EurekAlert, ScienceDaily and Genetic Engineering & Biotechnology News. Dr. Sultana's group also determined the molecular mechanism of how the dengue virus binds to mosquito exosomes, a critical first step in the transmission pathway. This work was recently published in the Proceedings of the National Academy of Sciences (PNAS). Dr. Sultana is currently expanding this work to identify ways to inhibit the exosomes from infected arthropods so that they cannot carry a viral payload into the host. This would be a new strategy in blocking viral transmission, and Dr. Sultana was recently awarded a five-year NIH R01 grant to support her research on characterizing tick exosomes.

In addition to doing outstanding research, Dr. Sultana has trained and graduated several junior rising stars in her lab in the field of vector-borne diseases, as well as taught undergraduate and graduate students about host-pathogen interactions, cell signaling, and neurobiology in her classroom courses.

Leave Your Legacy Inside New Chemistry Building



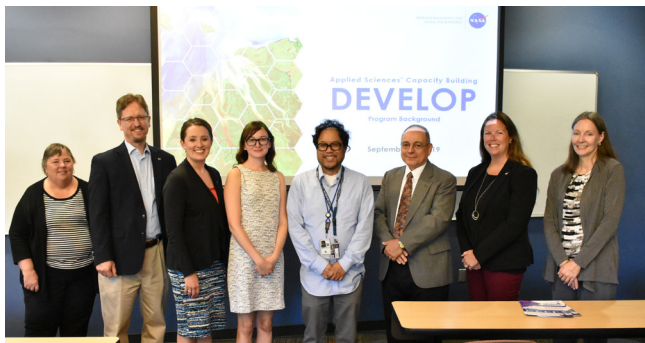
Imagine seeing your name or a loved one's name on one of our interactive learning centers, or on a research integrated lab or perhaps on the premiere planetarium and digital theater. Your gift will enable us to provide cutting edge STEM-H research and educational opportunities for Old Dominion students. Go to the new chemistry building website for more information:
<https://www.odu.edu/chemistry/new-building>.

Kaplan Orchid Conservatory Celebrates 11th Anniversary



A big thank you to everyone who celebrated the 11th anniversary of the Arthur and Phyllis Kaplan Orchid Conservatory on October 15. More than 70 orchid lovers along with President and First Lady Broderick and Tidewater Orchid Society members spent time at the conservatory. Read more about this special event here from ODU News: https://www.odu.edu/news/2019/10/dozens_stop_to_smell#.XcCRB5pKiUk.

Lunch and Learn Series



NASA Langley representatives talked to students about internship opportunities.



Major General Brian Cummings spoke about science, diversity and effective communication skills.



Alumnus Sandra Christian Edwards (center) spoke about the psychology of war. (Left: Associate Dean Terri Matthews and Right: Alumnus Sarah Hall)



Dr. Rebecca Rose talked to students about internships at BioInfoExperts.

Thank you to all of our speakers who presented an array of topics and opportunities to students. If you would like to come and speak to College of Sciences students contact Dr. Terri Mathews, Associate Dean at 757-683-5201 or email tmmathew@odu.edu.

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