OLD DOMINION UNIVERSITY
The Graduate School

GRADUATE NEWS
JULY 2019

MID-SUMMER EDITION

August is soon upon us! We at the Graduate School hope that your summer has been extra productive and restful. This issue, we're presenting you with pictures from the Celebration of the 50th Anniversary of the Apollo 11 Moon Landing, a faculty and student profile, two conference opportunties, and a free workshop next month. Enjoy this issue, and let us know your thoughts! Catch us again in September for our Fall 2019 issue!

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50TH ANNIVERSARY OF THE APOLLO 11 MOON LANDING CELEBREATED AT ODU

IN CELEBRATION FO THE 50TH ANNIVERSARY OF THE APOLLO 11 MOON LANDING, OLD DOMINION UNIVERSITY HOSTED A MULTITUDE OF ACTIVITIES FOR THE STUDENT COMMUNITY AND PUBLIC TO ENJOY, CULTIMINATING IN A WONDERFUL PERFORMANCE LED BY THE VIRGINIA SYMPHONY ORCHESTRA AND OUR PRESIDENT, JOHN BRODERICK. NOT TO MISS OUT, THE GRADUATE SCHOOL WAS THERE TO ANSWER QUESTIONS AND JOIN IN THE FUN.

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STUDENT PROFILE - REBECCA RICHARDSON (PH.D. CHEMISTRY)

What encouraged you to pursue a graduate education?
Originally, I wanted to go to medical school. After spending some time working with the head physician in pediatric infectious disease over the summer, I realized that the progression of medicine is heavily dependent upon research. Additionally, I realized that doctors can only help those individuals they treat. I chose graduate school because I decided that if I could make a single breakthrough, I would be able to help more people than if I were practicing as a physician alone.

What encouraged you to choose our current field?
My advisor. I originally planned to study in the biomedical sciences PhD program, however, my advisor believed that I had the potential to excel in the Department of Chemistry and Biochemistry.

Describe your research.
I am currently studying the cytotoxic and therapeutic applications against tumor cells. I am trying to understand cytotoxic concentration, time, and tumor type dependence. Additionally, I also want to understand the mechanism of cytotoxicity.

What do you like most about your research or feel will be its largest implication(s).
I love working with super resolution microscopy and cell culture work. I think the largest impact will be in advancing the efficacy and sensitivity of tumor diagnosis, and more personalized treatment options for patients.

Who are some guiding or influential figures in your life?
The women in my family. They always taught me to be resilient and never give anything less than my very best. Martha Johnson, a recent ODU PhD graduate in biomedical sciences, has been an awesome role model and mentor to me, showing me what a beautiful, black, fierce scientist is and how to achieve it. Lastly, Dr. Songkiatisak, a post-doc in Xu lab, has also been a great mentor to me, and I look up to her. She is an awesome scientist as well.
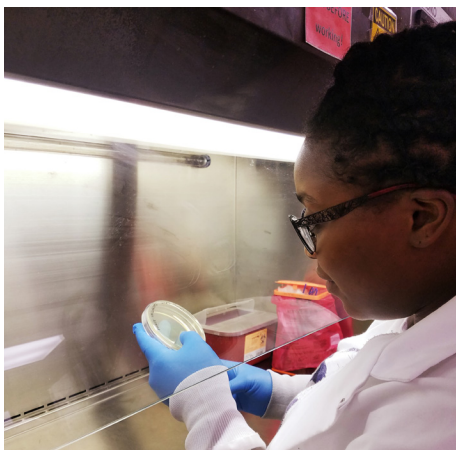
What do you like most about ODU?
One of my most favorite things about this school is the cultural diversity. ODU has an extremely diverse student body, at least within my graduate department, and I think the school overall does a wonderful job of embracing and celebrating different cultures' holidays/festivals and educating. This offers comfort and a sense of home to international students, but also helps educate native students.

What made Old Dominion University stand out?
I was originally accepted to ODU as an undergraduate, but chose to go to a smaller school, as ODU seemed to big for me. I was homeschooled all my life and had recently graduated from a community college. After completing my undergraduate program I decided to give ODU another shot, as I felt I could handle a larger school, and it was close to home.

What has changed about your perspectives since working in research?
I have found that research is not limited to just working in a lab, analyzing data, and going home. There is a lot of networking, communication, and interaction with others, more so than I anticipated. I thought that I could just isolate myself and do my research, but that is not really effective nor efficient.

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Faced with many competing demands on your time, how do you determine your priorities?
This is done with the assistance of my advisor. Sometimes it's difficult to see the big picture or understand how to tackle a task when there are so many different areas demanding my attention. She helps me prioritize my tasks considering the amount of time they take and their level of difficulty. I generally start with the most time consuming and difficult task, that is most urgently needed first, and go from there.

What motivated you to seek a mentor? What were your objectives?
I think it is truly important to have a mentor that you can have a healthy relationship with for several years as you will be working closely together. It was important that I have a mentor that could motivate and encourage me, but also have patience to help me and provide support as I progress through the program.

What recommendations do you have for people seeking a mentor? Prospective mentors?
Talk with students about their experiences and opinions about their mentor and ask them to be blatantly honest. You'll never get a good idea of what a mentor is like when you meet them because they will always put their best foot forward. Additionally, it is important to know what type of student you are. If you are student that works best independently, a less hands on advisor might be beneficial and visa-versa.

What have you gained so far in your work together? What have you learned about yourself professionally/academically?
I had a misunderstanding of what research was like, as I had no prior research experience. I have learned to surpass and overcome that which I previously perceived to be my limitations. Aside from my research related gains, I have also personally benefitted from the confidence that I now have as a scientist. Lastly, I have a new perspective on learning. As an undergraduate, we often feel compelled to know all the answers and are embarrassed when we do not or when we make a mistake. As a graduate student, I embrace not knowing, making and learning from mistakes, as well as the process of growing and developing as an independent scientist.

What do you feel could be improved at ODU?
There is little to no opportunity for graduate students to interact with each other within the chemistry department and across the graduate STEM departments within ODU. I think it is extremely important to cultivate a more interdisciplinary learning environment and find ways to bring graduate students together inside and outside of the University. In addition to graduate students meeting and interacting with faculty from other departments, it is a great opportunity to promote collaboration.

If you were given additional money for funding, what would you research and how?
I would study the effect AgNPs have on the expression of certain enzymes that help maintain appropriate reactive oxygen species levels within the cell using TaqMan quantitative real time PCR.

What is your philosophy of teaching and learning?
"In learning you will teach, and in teaching you will learn." – Phil Collins

What are your hobbies?
I love spending time with my dog. He is amazing, absolutely perfect. The best dog in the world, hands down. He is perfect. I love musical theatre and karaoke. It's a great way to relax and have fun after a stressful day at lab. I also really love thrifting and cleaning my house.

What do you look for in your academic colleagues?
The same level of honesty, dedicated work ethic, and standard of excellence that I expect from myself.

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As a graduate student, you will find that upon completion of your degree, many more avenues will open for you with the government, the private sector, and academia. Coming back to academia, you'll have an excellent opportunity to give back in teaching as faculty, but also the ability to explore subjects of interest through research, with a wide range of intellectual freedom and university assistance. Through our many research workshops, you can find out how to best take advantage of them. Here to lend perspective is Dr. Vikas Ashok, an incoming Computer Science Professor, who attended one of our Summer Research Workshops and completed his M.S. in Computer Science here at ODU.

What was your approach for finding an advisor to help guide your Ph.D. Research?

My approach was proactive. I went to his office to meet with him. As a graduate student, you need to find an advisor to guide your research. Prior to meeting with him, I looked up what he does and checked whether what he does aligns with my interests. In the meeting, I expressed my interest to work with him, talked to him about my prior research experience, and he patiently explained what he planned to do beyond over the next four years, and it all aligned. He said I could work in his lab and that's how it all started. We achieved a lot together and have a great relationship. It is important to be proactive, not hesitate, and resist shyness. What's the worse that can happen? They can say no, but then you can seek another advisor; there are many options. These you won't know until you try.

What's a helpful consideration that is helpful for graduate students adamant about their area of study?

I see many students who are adamant about the kind of research they want to do, so they only target few faculty who are 90%+ aligned with their interest. Often they get upset when they are unable to join the research group they desire, but it must be understood that there are only a few slots that an advisor can offer. I would recommend that students be flexible and have multiple topics in mind. A flexibility in choosing the advisors is recommended, considering this. In my case, that what's happened. I was more interested in computer networks, wireless networks, and sensor networks. It's what I did at ODU for my master's, but when I came to Stony Brook University for my Ph.D., there were only two or three faculty in a similar line of research, but they hardly had any vacancies in their labs. I got noticed through to my friends and then went for my other options which were in artificial intelligence, computer-human interaction, and data science. With this flexibility, I approached my advisor and everything worked out great. There are a lot of things in which you feel you are not interested, but once you know more about the topic, this can change. If I could have gone back and selected between my current topic and my initial topic, I would have chosen my current topic.

What are some insights that you have gleaned as a product of academic life that have helped in growth?

Doing research is one thing, but the other thing is to be effective in teamwork, which is essential in the lab. There is a tendency of working alone, even though there are four-five other people working with the same advisor. It is ok, but I recommend that students try what we did in our lab – every student works on every project, in which one person in the group takes the lead on each project, and this increases not just the breadth of topics covered in research, but you also do a lot of things that you yourself don't have the time to research. This kind of sharing of knowledge and working together, I think, is more efficient for the entire lab, instead of each one doing their own project. Also, you get more feedback and less bias over your direction, as the work and discussion around the work, can give you and your colleagues an expanded perspective. It not only strengthens you, but also the lab. It helps to share and discuss as much as possible.

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Additionally, being more patient is helpful in research. For example, you may submit a paper to a conference, but there's no guarantee that it will be accepted. Also, don't put all of your eggs in one basket. It's quite possible that a project you are working on may not pan out, leading to you or your colleagues feeling disheartened. Having multiple projects can help students avoid this and the loss of critical momentum. An advisor I know would have students working on two-three projects at a time. Although students couldn't work 100% percent on their projects, they would recruit colleagues to help out and volunteer to help out on that of their colleagues. This way, they were able to boost contributions and submissions, making them and their colleagues stronger and even more productive.

What's some potential research on the horizon that you would like to discuss?
I've branched out, so I find myself working on multiple interconnecting domains. For example, one project is on human-computer interaction, specifically improving the interaction experience of people with disabilities when they interact with computing devices. My focus concerns those who are visually impaired, who need an aid such as a magnifier or screen reader, to interact with laptops, phones, and so on. So, the core problem to solve is that, much of the interaction with the computing devices is visual and the optimal paths of working with them is visual due to the layout and means of input. For people who are visually impaired, they're limited largely to audio navigation, which relies on a largely linear or sequential mode of interaction and navigation of content. They lose out on visual cues that make navigation or work easier and allow for non-linear and rapid means of interacting with computing devices. Imagine listening to the contents of a folder one by one versus seeing all the content visually. My research involves making more usable non-visual interfaces or input/interaction techniques for people who are blind and low vision to make it easier for them to do tasks to the same degree, as for those who are less impaired. This applies not just to desktops and laptops, but other computing devices such as tablets, smartphones, and smart watches. A further aim and application of my research, from one of my recent research projects, helps those who are visually impaired take on critical tasks such as filling out paper forms such as those at hospitals and legal firms, especially those in which they affix signatures, increasing the sphere of accessibility to citizens often not as usually considered in design. One application of this resulted in the creation of an software assistant that lets visually impaired individuals move their hand on a flat surface like a table or desk and informs them what to fill out where, if they are making inputs in a straight line, and beyond. This is accomplished using computer vision and machine learning techniques, along with an interface that my team has built. In short, this work helps to bridge this gaps between the impaired and non-impaired.

The other line of work is in natural language processing. This project involves investigating online forum structures. Specifically, I analyze online forum data and find solutions posed by original posters at a much higher efficiency. Take for example the multitudes of data within online forums and the differing structures that one has to cut through to obtain answers for several problems. Much of the difficulty lies in weeding out data from trolls and wrong answers, making sense of the varying degrees of forum structures, and finding useful patterns to build useful structures of the information, which help the user get to the point. Simply, can we take the relevant parts and restructure it in a more useful manner. A further question is, "Can we help automate this?"

Are there any additional perspectives that you have gained since working in research?
Yes, one of which is to always be open to new techniques and new ideas. Watch out for what's happening, and don't say that you have enough experience or that you have seen enough. Advances in fields close and far to you exist, and some are worth at least keeping an eye on. If you aren't keeping track of other advances, you can find yourself left behind or losing ways to expand your marketability and adaptability. In my case, it's computer science. If I am working in computer-human interaction, I should be aware of what's happening in machine learning or computer vision because these or related domains may be able to improve my research and domain. Always keep your eyes open, and don't ever limit your focus.

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COLUMBUS STATE UNIVERSITY

FACULTY
RESEARCH CONFERENCE

NOVEMBER 6 • CUNNINGHAM CENTER • COLUMBUS, GA

What: Columbus State University will once again host, as a part of its annual Graduate Research Conference for graduate students, a one-day Faculty Research Conference. This is a great opportunity for faculty and students to attend together and to support one another's research presentations.

When: Wednesday, November 6, 2019, 9:00 - 5:00 p.m., immediately preceding the reception and 3-Minute Thesis Competition that usher in the beginning of the conference for graduate students.

Where: Cunningham Conference Center at Columbus State University, Columbus, Georgia

The conference gives faculty from any discipline the opportunity to present their research through a short (up to 25 minutes with Q & A) oral presentation. While research on any topic may be presented, those in which the faculty have engaged graduate students in their research are especially valued.

CALL FOR PROPOSALS

Faculty are invited to submit proposals (title and abstract) via the Graduate Conference website. The **deadline for submission is September 6, 2019.** Registration for the conference will be expected shortly after confirmation that the proposal has been accepted.

For additional information and to submit a proposal, go to:
https://gradschool.columbusstate.edu/gradconference/faculty.php

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Free Software Carpentry Workshop August 21-22nd

Software Carpentry Workshop | August 21-22

If you are new to research, or if you're facing a pile of data with no idea where to begin, join ODU's Research Computing Services this summer for a free Software Carpentry Workshop.

Wednesday–Thursday, August 21–22
9:00 a.m. to 5:00 p.m.
ODU Learning Commons @ Perry Library, Conference Room 1310–1311

In this workshop, you'll learn basic research computing skills that will help you get your work done in less time and with less pain and frustration. We will introduce three computational tools which can be used in many areas of research:
UNIX shell: quickly and easily automate repetitive tasks
GIT version control: collaborate on the development of computer programs and documents
Python: learn to use this popular programming language

This workshop is geared toward the novice – you need no prior experience or knowledge in order to attend. Students and researchers from any field of study (science, engineering, business, social sciences, humanities, are welcome. Bring your own laptop so you can follow along with live coding demonstrations and participate in the hands-on exercises (Windows/Linux/Mac OS; not Chromebooks or tablets).

Learn more and register at https://odu-rcs.github.io/2019-08-21-odu/.
Seats are limited and the interest is high. There is no remote participation option. We respectfully ask that you commit yourself to attend if you sign up.

Contact hpc@odu.edu with any questions about this workshop.

NOTE: For this workshop, you'll need to install one or more software package(s) on your laptop. Find links and instructions on our website, and don't hesitate to contact us if you need help with installation. A day or two before the workshop, we will set up an office hour for anyone who needs in-person setup assistance.

Editor's Spot

With July coming to a close, the Fall semester is soon upon us. The Graduate School hopes that you had a refreshing and productive break. Now is an excellent time to get ahead of the curve with supplies, housing, healthcare, and passes needed to get through the year. Feel free to contact us with any questions that we can answer and needs that we can address. Be sure to look out for upcoming competitions and conferences that you can attend, including our Three Minute Thesis Competiton and our Graduate Research Achievement Day Conference the following semesters. We hope to see you there ! -Xavier-Lewis Palmer

About

Find Graduate School News Online at: www.odu.edu/graduateschool,
as well as updates on our Facebook, LinkedIn, and Twitter pages.

ODU doctoral student, Xavier-Lewis Palmer, compiled and edited this newsletter with help from Dr. Robert Wojtowicz, Dr. Bryan Porter, Missy Barber, Genenieve Conwell, and Courtney Nishnick in the Graduate School.

If you have an idea, event, news, or anything otherwise notable that you would like to share,
contact Xavier-Lewis at xpalmer@odu.edu.

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