



Weill Cornell Medicine

Graduate School
of Medical Sciences

A partnership with the Sloan Kettering Institute

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Summer 2019

WorthWEILL



**39th Annual Vincent
du Vigneaud
Memorial Research
Symposium**



Congratulations to the Class of 2019 and the following Weill Cornell Graduate School Award Recipients!

2019 DISTINGUISHED ALUMNUS AWARD

Established in 1997, this award recognizes an alumnus/a who has demonstrated exceptional achievements and outstanding contributions to biomedical research and education.

KATHARINE HSU, M.D, PH.D '93

2019 EXCELLENCE IN TEACHING & MENTORING AWARD

The WCGS Excellence in Teaching and Mentoring Award recognizes a WCGS faculty member who has distinguished her/himself in teaching and/or mentoring of students, postdocs and faculty.

ANJALI M. RAJADHYAKSHA, PH.D.

2019 WCGS DISTINGUISHED STUDENT COMMENCEMENT AWARD

This award recognizes an exceptional member of our graduating class who will deliver the student commencement address

GEORGIA FROST

2019 STUDENT SERVICE AWARD

The WCGS Student Service Award recognizes one or a group of WCGS students who have distinguished themselves in service to the graduate school, WCM, MSKCC, HSS, the larger community or beyond.

JORDANA THIBADO

2019 JULIAN R. RACHELE PRIZE

This award recognizes the top paper(s) published by WCGS Ph.D. candidates in the past 12 months.

JACOB LITKE

"Highly Efficient Expression of Circular RNA Aptamers in Cells Using Autocatalytic Transcripts" *Nature Biology*

ASHLEY CHUI AND SAHANA RAO

"N-Terminal Degradation Activates the NLRP1B Inflammasome" *Science*

**2019 OUTSTANDING IN TEACHING & MENTORING AWARD
FOR EACH DOCTORAL PROGRAM**

The WCGS Outstanding in Teaching and Mentoring Award recognizes a WCGS faculty member in our doctoral programs who has been exemplary in showing their dedication and giving their time to training our first and second year students during their early transition into our programs.

BIOCHEMISTRY & STRUCTURAL BIOLOGY, CELLULAR & DEVELOPMENT BIOLOGY AND MOLECULAR BIOLOGY

ANDREW KOFF, PH.D.

IMMUNOLOGY AND MICROBIAL PATHOGENESIS

JAYANTA CHAUDHURI, PH.D.

NEUROSCIENCE

CONOR LISTON, M.D./PH.D

PHARMACOLOGY

MIKLOS TOTH, PH.D.

PHYSIOLOGY, BIOPHYSICS AND SYSTEMS BIOLOGY

SCOTT BLANCHARD, PH.D.

2018 - 2019 RESEARCH FELLOWSHIP RECIPIENTS

Congratulations to the following distinguished graduate students who have been awarded with predoctoral fellowships to pursue research that will make significant contributions to the field of biomedical science.

ANTHONY ANTONELLI in the Glickman Lab has been awarded the DOD Horizon fellowship. Project title: "The Mechanism of Anti-Tumor Immunity Induced by BCG Therapy for Bladder Cancer."

YARED BAYLEYEN in the Pitt Lab has been awarded the NSF fellowship. Project title: "Spatial Distribution of Sodium Channel Isoforms (Nav1.2 and Nav1.6); a Molecular Mechanism for Neural Circuit Development."

PRIYA BHARDWAJ in the Brown Lab has been awarded the NIH F31 NCI fellowship. Project title: "Mechanisms of Obesity-Induced Breast Epithelial Cell DNA Damage in BRCA Mutation Carriers."

HATICE CIFTCI in the Boudker Lab has been awarded the American Heart Association fellowship. Project title: "Unpinning Rate Limiting Steps and Activation in Eukaryotic Amino Acid Transporters."

MEGAN DACEK in the Scheinberg Lab has been awarded the NIH F31 NCI fellowship. Project title: "Engineering CAR T Cells to Potentiate Innate and Adaptive Immunity."

NEVIN YUSUFOVA in the Melnick Lab has been awarded the DOD Horizon fellowship. Project title: "Linker Histone Mutations Mediate Lymphomagenesis Through a Novel Chromatin Mechanism."

FAITH FOWLER in the Tyler Lab has been awarded the NIH F31 NCI fellowship. Project title: "The Role of Chromatin in the Repair of Radiation-Induced Damage."

SAMANTHA MEADOWS in the Orr Lab has been awarded the NSF fellowship. Project title: "Elucidating Astrocytic mGluR3 Signaling Using Novel Light-Gated Receptors."

VANESSA OSMAN in the Hemmings Lab has been awarded the NIH F31 NIGMS Diversity fellowship. Project title: "The Effect of Isoflurane on Axonal Endoplasmic Reticulum Ca²⁺ Dynamics in Hippocampal Neurons."

NAVID PAKNEJAD in the Hite Lab has been awarded the NIH F31 NCI fellowship. Project title: "Molecular Mechanisms of Apoptosis Regulation Through IP3 Receptors."

RAMYA SRIDHARAN in the Heller Lab has been awarded the NIH F31 NCI fellowship. Project title: "Improving Targeted Therapy in KRAS Mutant Lung Cancers."

COLIN TANG in the Mellinghoff Lab has been awarded the NIH F31 NCI fellowship. Project title: "Dissecting EGFR Inhibitor Resistance in Glioblastoma Through Genome-Wide CRISPR Screening."

39th Annual Vincent du Vigneaud Memorial Research Symposium

BY Vanessa Osman

The 39th annual student-organized and run Vincent du Vigneaud Memorial Research Symposium was held on April 18th, 2019. This year's symposium featured the work of Weill Cornell Medicine students as well as a keynote address delivered by Bonnie Bassler, Ph.D.: "A Phage That Counts."

This symposium is named for Vincent du Vigneaud, a former Weill Cornell professor and head of the Biochemistry Department who won the Nobel Prize for chemistry in 1955. The first Vincent du Vigneaud Memorial Research Symposium was held in 1980, two years after his death. Every year, this event provides an important educational and networking environment for students and alumni, giving students the opportunity to present their research and gain valuable feedback. "dVRS is a wonderful opportunity for students at any point in their career to gain experience in sharing their work, and dVRS promotes scientific discussions with established researchers that benefit both the students and the field that they work in," said Shana Bergman, a third-year PBSB student.

This year's event featured posters and oral presentations by students from all doctoral programs, led by Dr. Bassler's keynote address. Dr. Bonnie Bassler is a Howard Hughes Medical Institute Investigator and the Squibb Professor and Chair of the Department of Molecular Biology at Princeton University. Additionally, Dr. Bassler is a lauded researcher receiving numerous awards including the MacArthur Foundation Fellowship and the Dickson Prize in Medicine. During her keynote address, Dr. Bassler discussed her research involving quorum sensing mechanisms in bacteria. "Dr. Bassler was a great speaker! She spoke very clearly and was so enthusiastic about her work that even though I knew very little microbiology, I could follow along and also be excited about the science being investigated in her lab," said Joanna Luo, a third-year Pharmacology student.

The 10 student talks that followed ranged in topics from identifying the mechanisms of cancer drug synergy using machine learning by Coryandar Gilvary to imaging metabolite dynamics in live cells using Corn, a fluorogenic homodimer

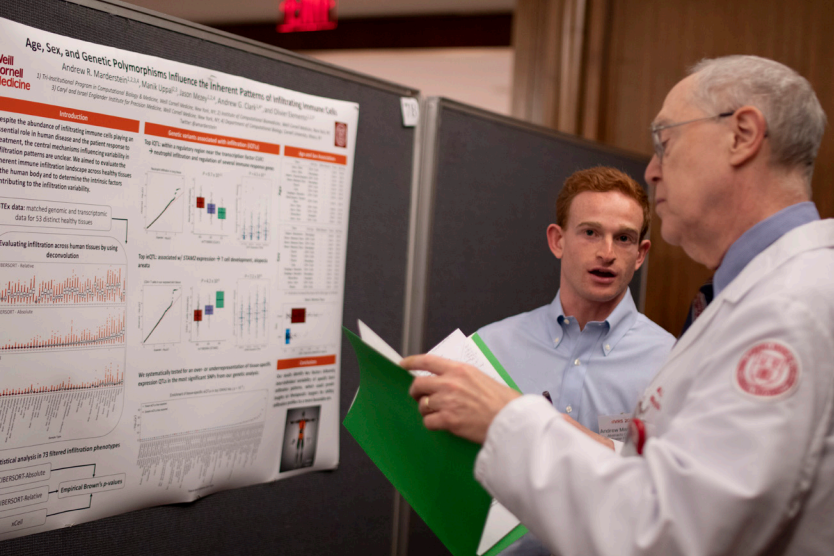
RNA reporter, by Hyaeyeong Kim. Along with the speakers, there were 89 student poster presenters, showcasing the breadth of exciting, cutting-edge research happening at Weill Cornell.

Students competed for top distinctions in both speaker and poster categories. Emma Schatoff was awarded 1st place for her talk "The Mode of Apc Disruption Dictates Response to Tankrase Inhibition In Vivo" and Shira Yomtoubian was awarded 2nd place for her talk "Inhibition of EZH2 Catalytic Activity Selectively Targets a Metastatic Subpopulation in Triple-Negative Breast Cancer." Alyna Katti was awarded 1st place for her poster "A Highly Specific Fluorescent, Activatable Reporter for Base Editing in Cells, Organoids, and Mice." Bobbie Pelham-Webb and Vidur Garg tied for 2nd place for their posters "The Role of Mitotic Bookmarking in the Molecular Resetting of the Pluripotent Stem Cell Identity" and "Switching Fates to Understand Lineage Decisions and the Rise of Pluripotency," respectively. In the category of first-year-student posters, Daniel Worroll was awarded 1st place for his poster "In Vitro Characterization of Key Residues Involved in Small-Molecule Binding to MUSASHI RNA-Binding Protein in Acute Myeloid Leukemia," and Svena Verma was awarded 2nd place for her poster "Tracking of Cellular Therapeutics In Vivo by Use of Membrane Bound Radiometal Chelate Binding Moieties."

dVRS co-chairs Corrin Wohlieter and Kathryn Carnazza were proud of the event's success: "It was an absolute pleasure to co-chair this conference to promote scientific excellence at Weill Cornell. Our keynote speaker, Dr. Bonnie Bassler, was a fantastic example of the commitment our school has to the education of our students. We had over 80 graduate student presentations and posters, and we were proud to support such fantastic work by our peers. It was a pleasure to work with the 35 students who helped make this event a reality. Over 75 evaluators volunteered to help improve the way in which our students present their research. The Vincent du Vigneaud Symposium is such a great opportunity to communicate science within our community and we are thrilled to have been a part of it." ♦



39th Annual Vincent du Vigneaud Memorial Research Symposium



STUDENT TALK AWARD

First Place

EMMA SCHATOFF (Lukas Dow Lab)

"The Node of Apc Disruption Dictates Response to Tankrase Inhibition In Vivo"

Second Place

SHIRA YOMTOUBIAN (Vivek Mittal Lab)

"Inhibition of EZH2 Catalytic Activity Selectively Targets a Metastatic Subpopulation in Triple-Negative Breast Cancer"

FIRST-YEAR POSTER AWARD

First Place

DANIEL WORROLL (Michael Karas Lab)

"In Vitro Characterization of Key Residues Involved in Small-Molecule Binding to MUSASHI RNA-Binding Protein in Acute Myeloid Leukemia"

Second Place

SVENA VERMA (David Scheinberg Lab)

"Tracking of Cellular Therapeutics In Vivo by Use of Membrane Bound Radiometal Chelate Binding Moieties"

SECOND-YEAR AND ABOVE POSTER AWARD

First Place

ALYNA KATTI (Lukas Dow Lab)

"A Highly Specific Fluorescent, Activatable Reporter for Base Editing in Cells, Organoids and Mice"

Second Place

BOBBIE PELHAM-WEBB (Effie Apostolou Lab)

"The Role of Mitotic Bookmarking in the Molecular Resetting of the Pluripotent Stem Cell Identity"

VIDUR GARG (Anna-Katerina Hadjantonakis Lab)

"Switching Fates to Understand Lineage Decisions and the Rise of Pluripotency"

CAMIR RICKETTS, Ph.D. Student Tri-I Computational Biology and Medicine

Growing up as the oldest with a younger brother and sister, Camir Ricketts wanted to be an architect because his father owned a construction company. “I always wanted to grow up and work with my dad and I was pretty decent at technical drawing in high school,” Ricketts says. At an early age, he also adored the idea of being a musician and despite having taken piano and drum lessons, Ricketts never really connected with it and it remained just an idea.



Camir Ricketts grew up in Montego Bay, known as the second city of Jamaica. At 10 years old, he received a series of science books and a 26-volume encyclopedia from his parents, who have supported him every step of the way. When he started high school, Ricketts was accepted into a summer program at the University of the West Indies, entitled Generating Genius. The program aims to inspire, motivate and support underrepresented young people in the areas of medicine and

research science. “It lasted for 5 years of high school where each summer I’d join 29 other students and participate in research in a variety of scientific disciplines: microbiology, robotics, biotechnology, biochemistry and so on. The opportunity to get exposed to science in this way really helped me identify a career path I enjoy.” This is how he discovered his lifelong fascination with science, how he solidified his passion for research.

A PERFECT MARRIAGE

Choosing his research has been an ever-evolving process since college. Between his high school graduation and enrollment at the University of Georgia, Ricketts explored his secondary interest in information technology and pursued an Associate degree from the College of Innovation and Technology before coming to the United States. “I learned more about what I find interesting and what I deemed impactful,” he explains. It wasn’t until his freshman year at the University of Georgia—in a random conversation with a professor, Ricketts discovered the perfect marriage of microbiology and computer science. “That was the first time I heard about bioinformatics and that conversation really shaped my decisions since then.”

In 2015, Ricketts joined the Tri-I Computational Biology and Medicine Ph.D. program after earning a bachelor’s degree in Microbiology from the University of Georgia. “I knew I wanted to do research and my parents have always been proponents of going as far as you can in your education regardless of the field. Considering all this, pursuing a graduate degree was really a no-brainer,” says Ricketts. “I count my blessings when I think about the fact that I get to do it here at Weill Cornell.”

RESEARCH

“My undergraduate research was in a microbiology lab working with *Mycoplasma gallisepticum* where I mainly focused on doing multiple genome alignments and identifying strain-specific genetic signatures,” Ricketts says, “however, towards the end of my undergraduate career, I got the opportunity to work with a cancer bioinformatician and the experience helped inform my direction in graduate school.”

Ricketts was exposed to the work in the Hajirasouliha Lab involving characterizing and investigating the role of structural variants in a variety of tumors during one of his lab rotations in the first year of graduate training. Under the guidance of Assistant Professor Iman Hajirasouliha, Ricketts’ research focuses on a type of variants known as structural rearrangements, which are large rearrangements of the genome. His research further involves studying how they evolve within the tumor.

“The goal is that this information will complete the picture of how mutations evolve within tumors so that we can make accurate therapeutic decisions during treatment,” Ricketts explains. “The benefit of being in the Hajirasouliha lab is the endless opportunities to get involved in a variety of areas

such as cancer genomics, metagenomics and machine learning.” Ricketts’ work has since expanded to developing tools capable of finding these large genetic rearrangements within genomes and large-scale analysis of these variants within and across populations.

He hopes to find answers to questions that have plagued us within cancer biology. “I believe precision medicine and this changing paradigm in medical treatment is going to rely on myself and many others to decode genetic information and how they affect human health. Once we understand that well enough, we may be able to make headway with how can we do it quickly and accurately through the power of computational approaches.”

Based on his scientific accomplishments and positive attributes, Ricketts was invited to represent the Hajirasouliha Lab and present his work at the 2018 Research in Computational Molecular Biology Computational Cancer Biology (RECOMB-CCB) conference in Paris. Now in his fourth year of graduate training, he will be spending his summer doing a research internship in cancer genomics at Natera.



**I count my blessings
when I think about the
fact that I get to do my
graduate training here at
Weill Cornell.**

WHY WEILL CORNELL

Ricketts cites the combination of unparalleled research opportunities, exceptional computational faculty and Cornell’s emphasis on translational research as being the key factors that set us apart from other research institutions. He particularly appreciates the close proximity to other great institutions such as Memorial Sloan Kettering and Rockefeller University, which allow him to explore and forge collaborative relationships.

He also appreciates the exposure to various career paths provided at the campus as well as the academically rich and collaborative environment, which empowers students to thrive and achieve their goals. “The allure of being in New York City and the options for career development present in a big city also factored heavily in the equation,” he adds.

HELPING THE NEXT GENERATION

As a previous co-chair and current board member of the Tri-I Minority Society, Ricketts has been working closely

with the Office of Student Diversity here at Weill Cornell to increase diversity across all levels of the institution. He also participates in the Tri-I Minority Society Summer Scholars Research Program (TIMS SSRP) which aims to expose minority undergraduates to biomedical research and increase minority recruitment and retention in the science field.



Beyond his involvement here at Weill Cornell and with the support of Tri-I CBM leadership, Ricketts also travels to his home country to speak to talented students about computational biology and the opportunities offered at WCGS. “I think all of us have a role to play,” Ricketts notes. “I hope that what I do will inspire enthusiasm and appreciation for science among young minority students. Thus, it is important to me to facilitate a learning experience to help the next generation to believe that they, too, can do it and thrive.”

In November 2018, Ricketts received the prestigious Jamaican Prime Minister’s Youth Award of Excellence in Academics, the highest national award recognizing young Jamaicans who have excelled and contributed to national development.



LEARN TO GIVE YOUR BEST

The transition from undergrad to graduate school was not easy for Ricketts. He faced numerous challenges, including getting used to increased advanced coursework, taking initiative to create assignments and goals in addition to developing ways of assessing his own progress. Moreover, there is also the infamous “imposter syndrome” that Ricketts considers one of the largest mental hurdles any student has to overcome. He recognizes that speaking openly with other students and understanding that any blind spot in our knowledge represents an opportunity for growth—especially learning to lean on other students to get better in areas we view as weaknesses.

“The thing about ‘imposter syndrome’ and self-doubt is that it has a funny way of making you convinced that it’s just you. It’s not,” Ricketts says. “Sometimes, when you overcome one challenge, you can almost guarantee another challenge is patiently waiting around the corner. But they all help with your growth as a student and a scientist.”

FUTURE PLANS

After graduating, Ricketts intends to continue to develop as a scientist either through postdoctoral training or working in industry. “I’ll continue to explore both options as that time draws nearer,” he says. Ricketts is also still

passionate about giving back to the community and aspires to promote the value of scientific research in his home country. “Impact is very important to me,” he says, “and I have always wanted to pursue a career path that allowed me to have great and widespread impact.”

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I hope that what I do will inspire enthusiasm and appreciation for science among young minority students.

In his leisure time, Ricketts often scrolls through Netflix before settling on re-watching “The OFFICE.” At other times, he enjoys exploring the city through food, travelling to new places, spending time with friends and going to comedy and Broadway shows: “If anyone decides that they don’t want their ‘Hamilton’ tickets, I’d gladly take them off their hands.”



Applying to graduate school can be a daunting task. And to succeed in graduate school takes remarkable resilience, commitment, passion and purpose, which our alumna Susannah Calhoun, Ph.D. '18 has shown through her academic journey. "I went to public school from elementary through high school and am grateful I got a good education in the NYC public school system," Calhoun says, "but being at a public school also showed me education inequality—that all children in NYC whether because of class or race were not getting the same education. I think being a biracial amputee made me more attuned to the differences and struggles other people were facing."

Growing up in Brooklyn with her mother and sister, Dr. Calhoun says her fascination with biology started at a very young age. She credits her high school AP biology teacher with encouraging her interests that led her to a biology major at Smith College in Northampton, Massachusetts. It was in college, she notes, it became clear to her that the biology field encompasses a vast array of potential careers besides medicine. "College exposed me to scientific research," she explains, "however, figuring out what to do with a biology degree was not as easy since everyone presumed I would be a medical doctor, which I knew I had no interest in." Through the years, Dr. Calhoun discovered parasitic diseases and biomedical research as a tool to address, prevent and treat health issues. "In my senior year of college, I realized I could make a career out of studying the disease and not the patient."

Dr. Calhoun joined the Immunology and Pathogenesis Microbial graduate program in 2012 after a brief stint as a research technician. She completed her dissertation in the lab of Kirk Deitsch where they studied *Plasmodium falciparum*, the parasite that causes the deadliest form of malaria. Dr. Calhoun's research focused on the mechanisms of genome stability and DNA repair of the parasite using next-generation sequencing and CRISPR. "This work built on the knowledge of how the parasite survives the hostile environment of the host with the eventual goal of translating that knowledge to drug development," explains Calhoun.

When asked what inspired her to be a scientist, Dr. Calhoun replied, "Growing up as an amputee I wondered what had caused my birth defect which sparked my interest in science. But what really hooked me was learning about parasitic diseases and realizing the tremendous need for better medications to treat millions of people affected by those diseases."

And while she may have accepted a postdoctoral position at Novartis Institutes for Biomedical Research, her passion for mentoring is far from over. Armed with experiences gained from her involvement in the Tri-Institutional Minority Society (TIMS) during her graduate training, Dr. Calhoun will continue her effort at Novartis.

Please tell me about your current position and what is a typical day for you?

I'm a Postdoctoral Scholar at Novartis working on a collaborative project between our Oncology Next Generation sequencing group and Immuno Oncology. This means I have two mentors and research groups I can draw advice and expertise from. We are optimizing transcriptome analysis of the tumor microenvironment by combining spatial data with traditional bulk RNA sequencing methods to capture cell to cell interactions and understand how transcriptional changes between tumor and immune cells can influence tumor response to therapies. Because this project is multidisciplinary, I do both NGS and in vivo lab work while also working with pathologists and bioinformaticians to determine the best methods for data analysis. I attend meetings about my project as well as the work of my two lab groups and larger Novartis departments. I have learned to balance lab work and the new scheduling demands of industry.

Why did you choose Weill Cornell Graduate School of Medical Sciences to do your Ph.D.?

Weill Cornell was where I got my first academic research job out of college. I was a research technician for Dr. Alessio Accardi for 1.5 years and learned a tremendous amount about how to conduct innovative research and manage a lab during that time. While working there, I applied to graduate school and Weill Cornell was a natural choice. I knew the institution, had developed relationships with professors and staff, and was already interested in the work of the Deitsch lab.

When you first started the Ph.D. program, did you know what you wanted to do after grad school?

I had an idea that I wanted to work in industry after grad school. I had done an internship post college at Merck and really enjoyed the research environment and the possibility of designing a treatment that you could follow all the way through development and manufacturing. Drug development was one of the reasons I'm so committed to biomedical research and I knew new drug treatments are sorely needed for parasitic diseases.

How did your career plans or goals change by the time you were finishing your Ph.D.?

By the end of my Ph.D., I realized the best way to work in pharmaceuticals was probably an industry postdoc unless I was lucky enough to get an Investigator position out of grad school. Also, doing an industry postdoc would allow me to benefit from the resources and connections of working for a company while still being able to do more exploratory translational research and publish my work since my project wouldn't be proprietary information.

The biggest surprise was that the position I'm in now is oncology after doing my Ph.D. in parasitology. I was open to switching fields since I knew infectious and tropical disease positions in industry are limited. A postdoc is also an opportunity for skill expansion and oncology is a field where the latest technology

is often applied first.

How did you transition into your current position?

After defending my thesis, I began applying to industry positions since the industry hiring cycle meant there weren't many positions open prior to my thesis defense. I had previously attended an Industry Postdoc Networking and Information Event at the NYAS, so I knew the deadlines for companies I was interested in. I applied to any postdoc and permanent industry positions that I was interested in and felt I was qualified for.

The Investigator research description of my mentor caught my eye on the Novartis website. I had primarily been focused on Microbiology and Infectious Disease positions but I was intrigued by the NGS work she was doing and the fact that she was a young female Senior Investigator encouraged me. I'm so happy that I took a chance and applied to the position because she contacted me three days later to set up a phone interview.

If there's a position you're interested in, even if you think you're not qualified enough, always apply! You never know what exact experience the interviewer may be looking for. My research background in genome stability and DNA sequencing made me a complementary fit for the oncology transcriptome work of my group. My immunology training at Weill Cornell has served me very well as I'm researching immuno oncology questions. Studying a parasite that tries to hide within a human host has given me a unique perspective on how to treat abnormal mutant cells masquerading as normal healthy cells.

“
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”

What's your favorite part of your current job and why?

I love the very collaborative environment at Novartis and how many new techniques and disciplines I've been introduced to in my six months here. The multidisciplinary nature of my project means that I work with pathologists to classify tumor tissue with IHC and have started *in vivo* model experiments after having never worked with mice before. I'm constantly learning more about my new field and gaining new technical expertise. Everyone at the company is working towards a common goal of providing better medication and quality health care to patients and that can be felt in how helpful and excited my colleagues are.

Share with us some of the challenges you're facing.

Currently I feel challenged at my job, but not overwhelmed with the work I'm doing. The nature of my project means I will probably have to learn some basic coding and how to use R

which will be a new challenge for me.

Were you involved in any organizations or activities while in grad school that helped lead you to where you are now?

My work with TIMS and mentoring other scientists has helped me develop communication and time management skills that allow me to work most effectively. Helping run the Tri-Institutional Minority Society Summer Scholars Program last summer required me to communicate science to new general audience and network with other scientists to expose the scholars to a diverse group of researchers. To be a good science mentor, you must be able to make your research understandable to a broader audience in order for them to be invested in achieving the research goals. This work also forced me to balance my own research with the needs of the students I was working with and more efficiently use my time to complete my experiments. This is essential because now I have to balance meetings with the demands of the lab.

In your opinion, what are the main skill sets you need for a postdoctoral position in industry?

Definitely communication and networking skills. Good people skills and the ability to communicate my research and why it's important has helped me get my current position and collaborate well with others. And networking was an important skill that helped me in my job search that you don't learn in grad school. I talked with my mentor Dr. Kirk Deitsch; Dr. Marcus Lambert, Assistant Dean of Diversity and Student Life; Dr. Carl Nathan, Chairman of the Department of Microbiology and Immunology and Dr. Linnie Golightly, Associate Dean of Diversity to get contacts at the companies I was applying to. Those contacts gave me insight into the positions and companies I was applying to and helped ensure that my application would get reviewed.

Leveraging your network to speak with people at the company you're interested in can lead to a referral and the inside track to a position. Being able to think critically, having a solid scientific knowledge base and scientific literacy meant that I could adapt quickly to the new concepts and experimental techniques of oncology. Having presented my research at conferences and seminars means that I can communicate science and tailor that information to different audiences. These abilities are essential to success in the pharmaceutical industry.

Knowing what you know now, would you still go into your current job?

Most definitely. The work I'm doing now is so exciting and the resources of industry allow you to do so much more in a short time at the bench. I can utilize my time more effectively to be thinking about the big questions rather than doing busy work. The level of expertise and diversity of specialization is exhilarating—if there is any technique I want to learn or a clinical question I have, there is someone at my company that has that knowledge.

Where do you see yourself going from here?

I have wanted to do drug development research since college, so

I want to continue my career in pharmaceuticals. After finishing my postdoc, I want to become an Investigator and have a more direct influence on the scope of research and how we discover new targets. Now that I have training in both oncology and parasitology, it will be difficult to choose what field I want to pursue after my postdoc. Both disease areas have a great unmet medical need and require dedicated scientists to address that problem. My skills in molecular biology and NGS could serve me well in either field. It may depend on the opportunities that present themselves during my postdoc at Novartis.



“Leveraging your network to speak with people at the company you're interested in can lead to a referral and inside track to a position.”

What advice would you offer to others interested in the same career path as yours?

Network and speak to people who work in industry. Don't be afraid to ask all of your colleagues if they have industry connections! Get an understanding of the skills and scientific background they are looking for and market yourself accordingly.

If you have your PhD, you already have the critical thinking and scientific literacy skills that will allow you to excel in a variety of positions. The tricky part is communicating that well through your resume, cover letter and in the interview. Have people who work in industry look over your resume and pay attention to formatting. Also, be willing to step out of the field you did your thesis in, you may find an aptitude and interest for something new. The mark of a good scientist is being able to adapt your skills to any problem.

What do you like to do in your spare time?

I'm adjusting to living in a new city. I've been exploring, going to museums, finding my new favorite restaurants and reconnecting with old friends who live in Boston. I've really been enjoying having my weekends to relax and not always running to do cell culture! Now that I have dedicated vacation days, I'm thinking about where I want to travel. I'm hoping to get back to Europe soon and visit college friends I haven't seen in a long time. I've also been continuing to do mentoring work through Novartis—I've been matched with a 7th grader in a Cambridge public school. We'll meet over the year to talk about their school life and I'll help them design a science project.

Care. Discover. Teach.

Contributors: Vanessa Osman, Pharmacology PhD Student (pg. 4)
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