

WINTER 2019

# PROGRESS NOTES

A NEWSLETTER OF THE  
**UVA** MD/PHD PROGRAM



## **DIRECTOR'S CORNER**

*A message from Dean Kedes, PhD, MD*

## **NIH DIRECTOR VISITS**

*Students meet with Francis Collins, MD, PhD*

## **ANNOUNCING**

*May 2020 - Distinguished Lecturer  
Griffin Rogers, MD*

## **STUDENT UPDATES**

*2019 Match Results  
Dissertations, Awards, Publications*

## **NEW STUDENT PROFILES**

*Meet the 2019 entering class!*

*...AND MORE!*

# THE MEDICAL SCIENTIST TRAINING PROGRAM AT UVA



## AN UPDATE FOR MD/PHD ALUMNI

December, 2019

Dear UVA MSTP alumni,

Our recruiting season is well under way, having completed four of our six interview sessions for the 2020 entering MSTP class. I'm thrilled to share with you that the applicant pool has become increasingly competitive over the last few years and the number of applications has risen to the highest level in the last five years--up over 16% compared to last year and 43% from the year before. The ratio of applicants to training slots this year will be over 34:1. The target entering class size is seven and we occasionally augment this number with one or two highly motivated and research-experienced students transferring from the UVa MD program. Last season's recruitment efforts were, again, highly successful with the matriculation of a wonderfully diverse and talented first-year class with research interests ranging from bacteriology to neuroscience to biomedical engineering. Recognizing the strength of our Program and its trainees, **Francis Collins, Director of the NIH**, requested to meet specifically with our MSTP trainees in a recent visit to the School of Medicine. In discussions with Dr. Collins during his visit, our proactive students extended an offer to him to come back to UVA to address MD/PhD training and, happily, he accepted (see the Collins story, below, in this Newsletter for more details).

### *Student Accomplishments*

Our students and their multiple successes are the best indicators of the strength of our Program. The UVa MSTP students consistently excel with outstanding publications and multiple awards. In addition, trainees are presenting their work at both national and international conferences, including Nadine Michel who won the best poster award at the EMBO Workshop *Genome Dynamics in Neuroscience and Aging* in **Herzliya, Israel**; Alex Matthew, who received a travel award to present at the 19th International Symposium of ISTU/5th European Symposium of EUFUS in **Barcelona, Spain**; and Ajay Chatrath, who was invited to give an oral presentation at the Translational Cancer Genomics: Multiomics-Based Cancer Molecular Typing, Prognostication, and Treatment Gordon Research Conference in **Hong Kong**. In addition, our trainees have chalked up an impressive number of NIH and other individual fellowships. Of the fellowship eligible students in their 2<sup>nd</sup> graduate school year and above, a remarkable 44% (16 of 36) are supported on individual fellowships. Finally, this past academic year's graduating class (UVa MD/PhD, 2019), albeit small, matched at world-class residency programs: Dr. Shadi Khalil at **UCSD** (Dermatology), Dr. Kristen Penberthy at **Johns Hopkins Medicine** (Pediatric Anesthesia) and Dr. Brian Reon, at **University of Pittsburg Medical Center** (Anesthesiology). Of note, this coming graduating year's will be back to seven and are busy interviewing for residency programs throughout the country.

### *Strength in diversity and inclusion*

UVa continues to out-perform the national averages for MST programs in recruiting and retaining students of diversity. Currently, 20% of trainees self-identify as members of a group that NIH-defines as under-represented in medicine and science. This approach of greater inclusiveness has enabled us to cast as wide a net as possible to attract and recruit future physician-scientists with tremendous intellectual, scientific, and humanitarian promise.

*How can you stay in touch or help?*

Please email us (Ashley Woodard [adw5x@virginia.edu](mailto:adw5x@virginia.edu)) to update your contact information or to share with us your own successes as well as challenges. We look forward to hearing from you. If you'd like to help the Program and its students, consider making a [tax deductible gift to the MSTP](#) to help establish conference travel scholarships, volunteer to be a resource for current students to discuss career paths, offer to house MSTP students during their residency interviews, or share ideas about the Program.

Happy Holidays to you and your families.

Sincerely,



Dean H. Kedes, PhD, MD  
Director, Medical Scientist Training Program





*UVA MSTPs met with Francis Collins, M.D., Ph.D. on the Lawn to discuss opportunities and challenges for future physician-scientists.*

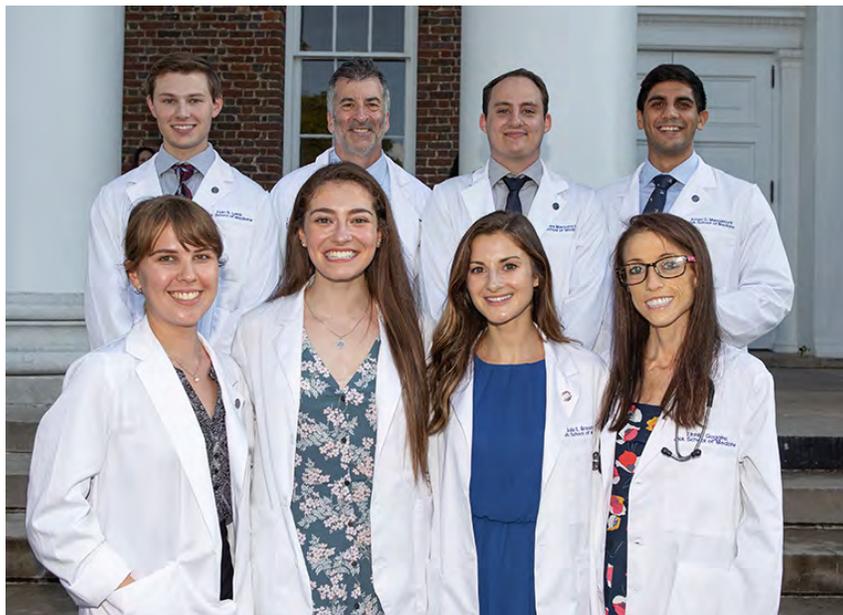
On a crisp fall morning in October, MSTP students had the unique opportunity to meet a notable UVA alum--current director of the National Institutes of Health (NIH), Francis Collins, M.D., Ph.D.

Dr. Collins, who was in Charlottesville for the naming of a hospital wing in his honor, specifically requested to meet with current MSTPs. The hour-long session on the Lawn gave 26 trainees the chance to discuss their current research and what excites them about the future of medical science.

At the turn of the millennium, Collins led the Human Genome Project--perhaps the largest collaborative biomedical research project in history--that determined the sequence of the 3.3 billion nucleotides that comprise the DNA instruction set for making a human being. After its completion in 2003, Collins ran the National Human Genome Research Institute before being appointed NIH director by President Barack Obama in 2009.

Collins discussed the work at NIH to help young physician-scientists launch their careers as independent investigators, the increasing prevalence of machine learning and big-data approaches in biomedical science, and ongoing work to promote diversity in biomedical sciences and funding disparities of minority investigators. Collins was optimistic about the future of biomedical research and its funding. He also discussed the [All of Us project](#) which aims to gather health data from over one million people in order to build the most comprehensive resource for future precision medicine efforts.

The excitement that Collins so readily conveys will certainly inspire trainees at UVA and nationwide to dream big.



***On Friday, August 16, the entering MSTP class joined their medical school peers at the 2019 White Coat Ceremony and Convocation.***

by HeeJin Cheon, G1

### **The MSTP Welcomes the Entering Class of 2019!**

*Featured clockwise from top: Evan Lamb, Dr. Dean Kedes (Program Director), Charles Marcucci, Aman Mangalmurti, Eibhlin Goggins, Julia Bresticker, Najwa Labban, and Katelyn Kraichely.*

### JULIA BRESTICKER

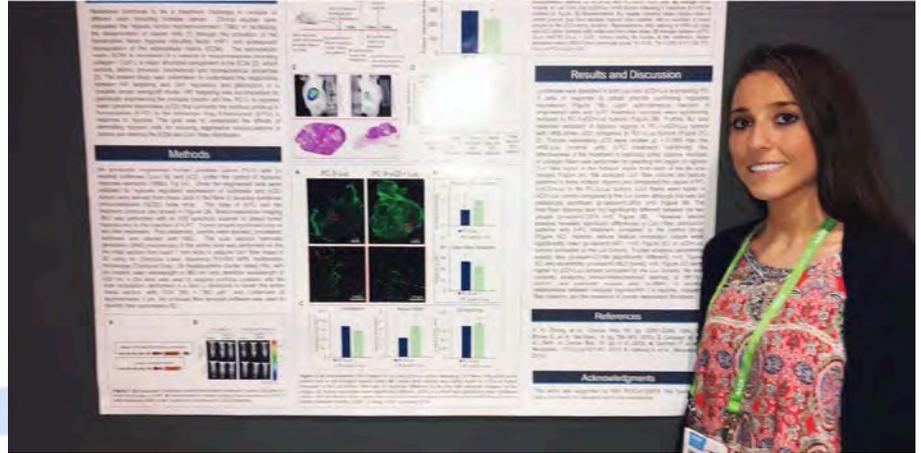
Julia was born and raised in Williamsport, PA. Growing up, Julia played soccer, ran cross-country and track, and was actively involved in the musicals, orchestra, and a capella groups. In high school, she developed a strong curiosity and passion for science, and in particular, physics, for its ability to provide a fundamental understanding of the world around us.

Julia made the big move (23 miles south!) to Lewisburg, PA where she attended Bucknell University. She majored in physics with a concentration in astrophysics and minored in philosophy. During her time at Bucknell, Julia conducted research in the biology department investigating the role of heat shock proteins in bladder and kidney cancer regulation. She also conducted philosophy of science research to develop strategies to improve the public's understanding of science. After graduating in 2017, Julia moved to Durham, NC to pursue a Master's in Medical Physics at Duke University. While at Duke, Julia joined an MRI engineering lab where she performed finite element simulations of radio-frequency coils for magnetic-resonance imaging. Outside of the classroom and the lab, Julia loves long-distance running, hiking, hanging out in coffee shops, going to farmers markets, and cooking. She's excited to be a part of the UVA MSTP and explore everything that Charlottesville has to offer!



## EBBY GOGGINS

Ebby grew up in Baltimore, Maryland with her parents and three older siblings. Although she has lived in America her whole life, her entire extended family and two of her siblings live in Ireland and thus she visits frequently. Ebby moved to D.C. to attend Georgetown University where she majored in Biochemistry with a cognitive science minor. She first got involved



in research when she joined Dr. Bhujwala's cancer lab at Johns Hopkins. She fell in love with all aspects of the research process from asking a question to conducting experiments to analyzing data. She had phenomenal mentors including Dr. Balaji Krishnamachary and she credits this lab experience for her decision to continue in research during her career! Later, she worked in a malaria research lab at Georgetown, studying the mechanism of antimalarial drugs. Ebby also volunteered as an EMT for four years at Georgetown which showed her that she also loves the clinical aspect of medicine. And thus she decided to pursue an MD-PhD!

Outside of school, Ebby loves to run, watch the Ravens and spend time with friends! She is excited to be in Charlottesville and learn about what it's like to live in a small city (compared to Baltimore and D.C.)!

## NAJWA LABBAN

I was born in Salt Lake City, Utah where I spent my weekends in the mountains backpacking, skiing, and rafting. I lived there for 13 years before moving to Richmond, Virginia where I attended high school and college at the University of Richmond. I spent four summers and three years developing diagnostic biosensors in a bio-analytics and nanomaterials lab in undergrad. I graduated in May of 2019 with a major in Biochemistry, a major in Arabic, and a minor in Math.

I am originally Lebanese, and Arabic is my native language, which is what prompted me to pursue a major in it. Given my nationality and my proficiency in Arabic, I would love to work with Arab immigrant and refugee patient populations during my time in Charlottesville. As an undergraduate, I studied abroad in Morocco and I see myself continuing to travel both during my medical training and afterward as a health professional, providing my services to medically underserved populations particularly in the Middle East. In addition to medicine, I am very interested in doing research, which is why I am pursuing an MD-PhD through UVA. I plan to do my graduate studies in biomedical engineering, potentially investigating the tumor micro-environment and mechanisms of wound repair. Outside of academics, I love to run and workout, play the guitar and the piano, and cook.



## KATIE KRAICHELY

Katie was born in St. Louis, but spent most of her childhood in the Lowcountry of South Carolina. Summers of chasing green anoles and tree frogs in the swampy backyard lead her to pursue an internship with the Department of Natural Resources in high school, where she found herself sampling the estuary wildlife with trammel nets and tagging endangered turtles. Though the long days, hot sun, and fish slime convinced her that marine ecology and fieldwork were not for her, she found that she loved the logic of the science and resolved to study biology in college.



Katie attended the College of Charleston in Charleston, South Carolina, where her interest in biology turned into a major in Biochemistry. She minored in biology and neuroscience, and managed to find a lab and research mentor to synthesize all of her interests. She spent her summer solving the structures of small neuropeptides, and her semesters as a supplemental organic chemistry instructor between coursework. Besides her academic life, she enjoyed living and working in a relaxed and historic city like Charleston.

Though her family and friends tease her about moving to “the north,” Katie is excited to be in Virginia and to pursue dual degrees. She is interested in learning new methods to study the structures and dynamics of biological molecules, and continuing to explore the field of biophysics. Outside of research, she is finding time to practice her flute in a way that does not annoy her neighbors, and slowly but surely trying all of the restaurants in Charlottesville.

## EVAN LAMB

Evan comes to Virginia after a lifetime of Midwestern living. He was born outside of Indianapolis before moving to Illinois, eventually ending up in Iowa where he lived for two decades. Evan attended the University of Iowa (Go Hawks) and graduated in May of 2019. He majored in Microbiology and Human Physiology with a Certificate in Clinical and Translational Sciences: subjects that inspired him to pursue a career in both patient care and basic science research. Evan is excited to begin his studies and experiences at UVA, and he embraces the prospect of living outside of a Midwestern state that starts with the letter ‘I’ for the first time in his life.



While at the University of Iowa, Evan became infected with a passion for research. His investigations focused on bacterial physiology, gene regulation, adaptability, and cell-cell communication. He also investigated pathogenic mechanisms of gastrointestinal pathogens including the causative agent of cholera. Although Infectious Diseases hold a special place in Evan’s heart (hopefully just figuratively), he is excited to explore the other fascinating areas of medicine and science. Prior to beginning medical school, Evan also found interests in science communication and teaching/mentorship.

When not in his natural habitat behind a microscope, Evan can be spotted at a garden center or greenhouse nerding out about plants, or his apartment caring for his growing plant collection, studying, or watching the latest Netflix hit series. He may also, on occasion, be found at the gym. Whether in the lab or at the gym, he enjoys listening to music or podcasts about paleontology, botany, law, and science. Evan’s other interests include foreign languages, travel, hunting, and cooking. As a devoted cat person, it is very probable that he will own a cat by the time he graduates.

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## AMAN MANGALMURTI

Aman was born in Houston, TX where he lived just long enough to know that once a Texan, always a Texan. From the age of four onwards his childhood was spent happily in the suburbs of Washington, DC where he was an avid player, and follower of all things soccer. His nascent interests in science were focused in high school at the Loudoun County Academy of Science where he was mentored through his first independent research project, the results of which landed him a ticket to Singapore to present his work! Aman made his way only very slightly south for four years at the University of Virginia where he studied Neuroscience and found a home in the lab of Dr. John Lukens in the Center for Brain, Immunology and Glia. Away from the bench, he was actively involved in campus life by providing health outreach to students (sex-ed included!), interning at the university's women's center, and running a program to provide long-term mentorship to middle school boys in the area. After graduating in 2017, his strong interests in pursuing research as a career led him to accept a position as a post-baccalaureate researcher at the NIH in Bethesda, MD. For two years he investigated the genetics and neuro-imaging of attention-deficit hyperactivity disorder in the lab of Dr. Philip Shaw. Back in familiar territory at UVA, Aman hopes to continue to study neuroscience while incorporating the lessons he picked up in his studies of genetics and the immune system.



## CHARLES MARCUCCI

I grew up outside a small town in rural eastern Iowa. As a child and teenager, I was mostly into sports as I played baseball the majority of my life and dabbled in basketball and football. After high school, I went off to college at the University of Iowa where I shifted my focus from athletics to trying to decide what to study. It took a few semesters, but through an elective course called "How the Brain Works" I realized that I was fascinated by the brain. Shortly thereafter, I chose a neurobiology major and joined a neuroscience research laboratory. The focus of my undergrad research project was to interrogate the interaction of two neuronal adhesion molecules and its impact on synapse formation. After graduating from the University of Iowa, I took one gap year where I continued working in the same lab and found time to travel (see evidence of my trip to France!) Aside from academics and research, I am an avid Chicago sports fan and an aspiring movie buff.





## **Congratulations to our new APSA Executive Board!**

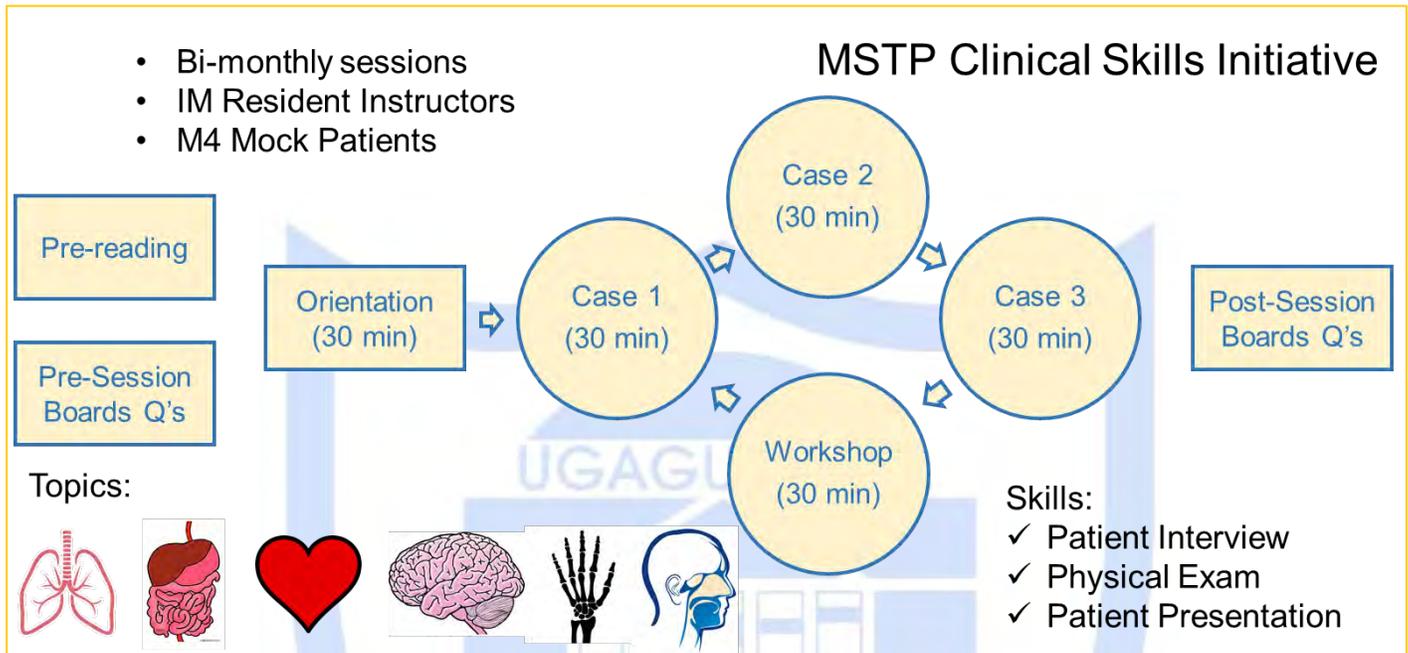
President	HeeJin Cheon (G1)
Vice President	Chris Henderson (G3)
Treasurer	Dane Sessions (G1)
Secretary	Blair Towers (M2)

Special thanks to our outgoing co-presidents, Carol Rowley and Jeff Xing!

## **Launch of UVA APSA Diversity Committee**

The American Physician Scientists Association (APSA) chapter at the University of Virginia established a Diversity Committee in the summer of 2019. The committee aims to promote an inclusive environment that attracts diverse students, invite speakers to discuss diversity in medical research, and connect trainees to funding opportunities and other resources.





After a successful pilot stage, the MSTP Clinical Skills Initiative has been expanded to become a core portion of the UVA MSTP curriculum for students in years G2 and above. The bi-monthly sessions include a brief didactic portion and three hands-on “mock patient encounters” that give MSTPs the chance to practice their interviewing and physical exam skills. **Amanda Ward (G3)** has helped lead the program’s continued expansion.

“We were excited to provide MSTP students with the opportunity to participate in the highest fidelity simulation of a clinical exam again this year,” wrote Ward. “The relaxed atmosphere of the clinical skills nights is great for teaching clinical reasoning and the H&P but the practice of seeing six “patients” back-to-back helps solidify many of the concepts we teach and reminds students about what is expected of them as an M3.

Culminating the year was a full-fledged Observed Structured Clinical Examination (OSCE) in participation with the UVA Clinical Skills Center.



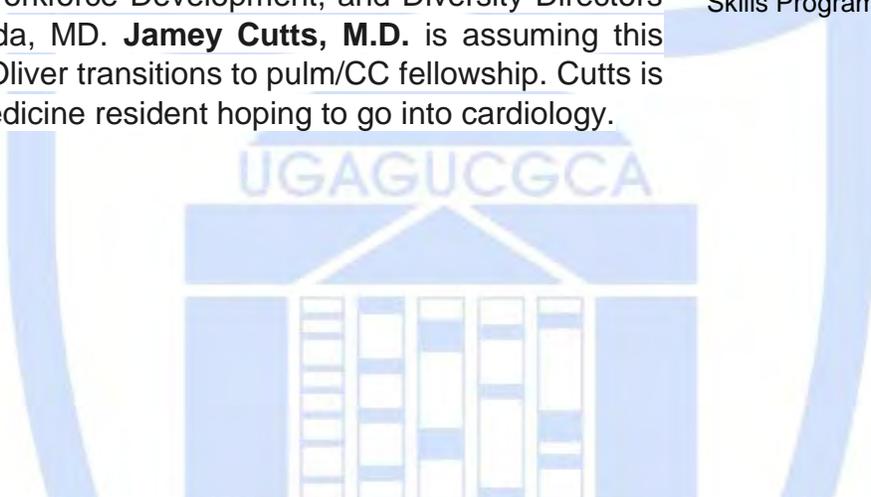
Amanda Ward (G3, left), Sam Oliver, M.D. (middle left) and Zollie White III (G2, middle right) at a clinical skills session.

“The UVA clinical skills staff worked extremely hard to completely revamp the OSCE for 2019 and we were happy to assist them in their ‘dry run.’ This symbiotic relationship between the UVA Clinical Skills Center and the MSTP continues beyond the OSCE and now MSTP students will help pilot CPX, an exam designed to mimic Step2CS as closely as possible,” wrote Ward.

Internal Medicine resident **Samuel Oliver, MD**, who helped foster the program’s expansion and continued success, received a [Mulholland Teaching Award](#) after being nominated by MSTP students. Oliver presented a poster about the program at the NIH NIGMS Training, Workforce Development, and Diversity Directors meeting in Bethesda, MD. **Jamey Cutts, M.D.** is assuming this leadership role as Oliver transitions to pulm/CC fellowship. Cutts is a PGY2 internal medicine resident hoping to go into cardiology.



Sam Oliver, M.D. (left) and Jamie Cutts, M.D. (right) have led resident participation in the MSTP Clinical Skills Program.



## ANNOUNCING OUR NEXT MSTP DISTINGUISHED LECTURER



### GRIFFIN RODGERS, M.D., M.A.C.P.

The UVA Medical Scientist Training Program (MSTP) is pleased to announce Dr. Griffin Rodgers (MD, M.A.C.P.) as its distinguished lecturer for 2020. The lecture will take place between May 6<sup>th</sup> and May 8<sup>th</sup>. The annual MSTP distinguished lecture is completely student run and nominations are made by MSTP students. Previous lecturers have included Dr. Bruce Walker, MD (Harvard) and Dr. Christopher Miller, PhD (Brandeis). Dr. Rodgers is currently the Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and manages a budget of \$2.03 billion. Dr. Rodgers has been the director of the NIDDK since 2007.



Dr. Rodgers is a physician-scientist who has been board certified in internal medicine, emergency medicine, and hematology. Dr. Rodgers, a true physician-scientist, received his undergraduate, graduate, and medical training at Brown University (Providence, RI). He trained in internal medicine at Barnes Hospital at Washington University School of Medicine in St. Louis (now Barnes-Jewish Hospital in St. Louis, MO). He received his fellowship training in hematology at the George Washington University/NIH combined program.

Dr. Rodgers started his research group at the NIH in 1984. He quickly rose through the ranks and became the Chief of Molecular and Clinical Hematology Branch in 1998. In 2001, he assumed the role of NIDDK Deputy Director before becoming acting director in 2006 and permanent director in 2007.

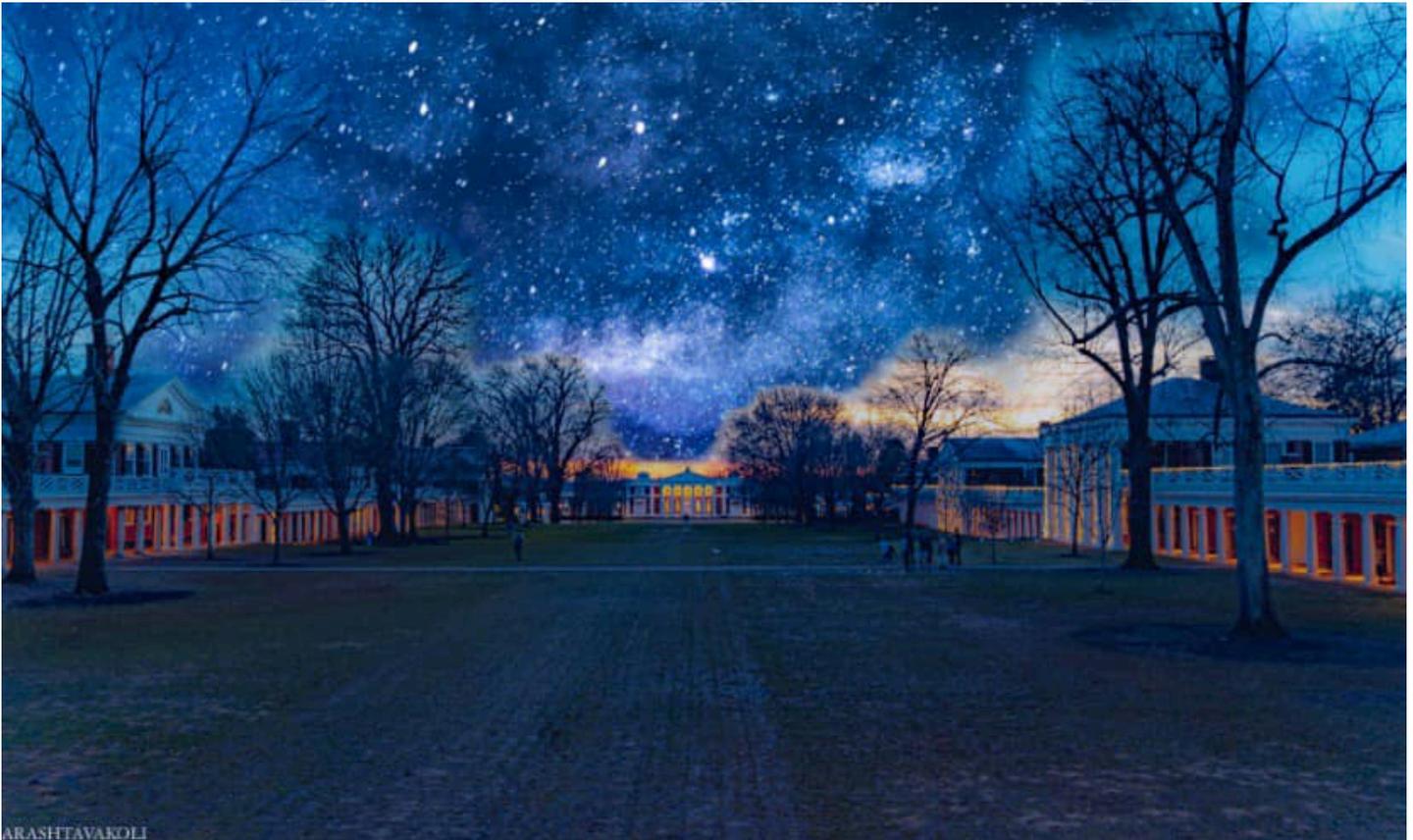
Dr. Rodgers' research interests currently include:

- 1) genetic diseases such as sickle cell anemia, thalassemia, and red cell enzymopathies; 2) molecular genetics of human hemoglobins;
- 2) hematopoiesis (role of inducible stochastic factors, hematopoietic stem cell plasticity, identification of early markers of lineage-specific differentiation); and
- 3) development of novel gene therapy strategies and their targeted application in cord blood hematopoietic stem cells

Dr. Rodgers performed the early studies on the effectiveness of hydroxyurea in the treatment of sickle cell disease. This was the first treatment approved for treating sickle cell disease. Now, Dr. Rodgers is studying how recombinant erythropoietin and iron supplementation can be used to increase the effectiveness of hydroxyurea in sickle cell patients. For his research Dr. Rodgers has received numerous awards including: Arthur S. Flemming Award, Richard and Hinda Rosenthal Award of the American College of Physicians, Meritorious Achievement Award of the National Medical Association, and the Mastership American College of Physicians. Please welcome Dr. Griffin Rodgers during his lecture in early May! Please contact Adi Narahari ([akn4uq@virginia.edu](mailto:akn4uq@virginia.edu)) and Chris Henderson ([cah5vj@virginia.edu](mailto:cah5vj@virginia.edu)) with any questions!

## 2019 Match Results

<b>Name</b>	<b>Institution</b>	<b>Specialty</b>
Shadi Khalil	University of California-San Diego	Dermatology
Kristen Penberthy	Johns Hopkins University	Pediatrics Anesthesia
Brian Reon	University of Pittsburgh Medical Center	Anesthesiology



## 2019 Public Defense Dates

2018, December 12	Daniel Hess (Owens Lab)
2019, February 26	Ricky Baylis (Owens Lab)
2019, March 18	Jessica Neville Little (Dwyer Lab)
2019, May 8	Jake Eccles (Woodfolk Lab)
2019, June 14	Sarb Nagdas (Kashatus Lab)



### **Awards and Extramural Funding**

The following students have extramural funding:

- Katherine Owsiany (AHA), enrolled 2014
- Ricky Baylis (F30), enrolled 2013
- Sarb Nagdas (F30), enrolled 2013
- Jessica Neville Little (F30), enrolled 2013
- Mark Rudolf (F30), entered 2013
- Jeff Xing (F30), entered 2013
- Bryan Chun (F30), entered 2012
- George “Bert” Cortina (F31), entered 2012
- Allissia Gilmartin (F30), entered 2011
- Ali Khan (F30), entered 2011
- Scott Seki (F31), entered 2012
- Angela Zeigler (F30), entered 2012
- Adishesh Narahari (F30), entered 2014 - received F30 in 2018
- Chris Henderson (F30), entered 2015 - received F30 in 2019
- Jon Suzich (F30), entered 2015 - received F30 in 2019
- Nadine Michel (F31), entered 2014 - received F31 in 2019

## Awards, Scholarships, Honors

- 2019 Whitfield Randolph Scholarship recipients: Nadine Michel (McConnell Lab) & Adam Lu (Beenhakker Lab)
- April 2019: Nadine Michel (Grad 4, McConnell Lab) won best poster at the EMBO Workshop “Genome Dynamics in Neuroscience and Aging” in Herzliya, Israel. The title of Nadine’s poster was “The Neurodevelopmental Consequence of Genomic Stress.”
- May 2019: Alex Mathew (Grad 3, Price Lab) received a travel award to present at the 19th International Symposium of ISTU/5th European Symposium of EUFUS in Barcelona, Spain from June 13-15, 2019. The title of Alex’s talk is “Transcriptomic Profiling of Thermally Ablated B16F10 Tumors Reveals Temporal Variability in Immunogenicity.”
- June 2019: Annie Carlton (Med 4, Bushweller Lab) joined 14 other students in her Med 4 class to become an Alpha Omega Alpha (AOA) inductee. The AOA is the national medical honor society and the criteria for membership includes leadership, character, community service, and professionalism. Students are eligible for AOA induction if they are in the top quartile of their class.
- June 2019: Ajay Chatrath (Grad 2, Dutta Lab) was invited to give an oral presentation and a poster presentation at the Translational Cancer Genomics: Multiomics-Based Cancer Molecular Typing, Prognostication, and Treatment Gordon Research Conference on July 1, 2019 in Hong Kong. The title of Ajay’s talk is "Germline Variation in GRB2 and ANKDD1a is Predictive of Survival in Lower Grade Glioma Patients”.
- June 2019: MSTP students received three of the twelve 2019 Robert R. Wagner Fellowships. Awardees included Jon Suzich (Grad 3, Cliffe Lab), Nadine Michel (Grad 4, McConnell Lab), and Carol Rowley (Grad 4, Kendall Lab).

## 2019 Publications

**Hess DL**, Kelly-Goss MR, Cherepanova OA, Nguyen AT, **Baylis RA**, Tkachenko S, Annex BH, Peirce SM, Owens GK. Perivascular cell-specific knockout of the stem cell pluripotency gene Oct4 inhibits angiogenesis. *Nat Commun.* 2019 Feb 27;10(1):967. doi: 10.1038/s41467-019-08811-z. PubMed PMID: 30814500; PubMed Central PMCID: PMC6393549.

**Chatrath A**, Kiran M, Kumar P, Ratan A, Dutta A. The Germline Variants rs61757955 and rs34988193 Are Predictive of Survival in Lower Grade Glioma Patients. *Mol Cancer Res.* 2019 May;17(5):1075-1086. doi: 10.1158/1541-7786.MCR-18-0996. Epub 2019 Jan 16. PubMed PMID: 30651372; PubMed Central PMCID: PMC6497557.

Kiran M, **Chatrath A**, Tang X, Keenan DM, Dutta A. A Prognostic Signature for Lower Grade Gliomas Based on Expression of Long Non-Coding RNAs. *Mol Neurobiol.* 2019 Jul;56(7):4786-4798. doi: 10.1007/s12035-018-1416-y. Epub 2018 Nov 3. PubMed PMID: 30392137; PubMed Central PMCID: PMC6499716.

**Kamata T**, Yang CS, Jividen K, Spencer A, Dworak N, Oostdyk LT, Paschal BM. Detection of ADP-Ribosylation of the Androgen Receptor Using the Recombinant Macrodomain AF1521 from *Archaeoglobus fulgidus*. *Methods Mol Biol.* 2019;1966:107-124. doi: 10.1007/978-1-4939-9195-2\_9. PubMed PMID: 31041742.



**Little JN**, Dwyer ND. p53 deletion rescues lethal microcephaly in a mouse model with neural stem cell abscission defects. *Hum Mol Genet.* 2019 Feb 1;28(3):434-447. doi: 10.1093/hmg/ddy350. PubMed PMID: 30304535; PubMed Central PMCID: PMC6337704.

**Michel N**, Majumdar UB, Lannigan J, McConnell MJ. Imaging Flow Cytometry Quantifies Neural Genome Dynamics. *Cytometry A.* 2019 Aug;95(8):825-835. doi: 10.1002/cyto.a.23783. Epub 2019 May 7. PubMed PMID: 31063256.

**Owsiany KM**, Alencar GF, Owens GK. Revealing the Origins of Foam Cells in Atherosclerotic Lesions. *Arterioscler Thromb Vasc Biol.* 2019 May;39(5):836-838. doi: 10.1161/ATVBAHA.119.312557. PubMed PMID: 31017823; PubMed Central PMCID: PMC6482855.

**Rowley CA**, Kendall MM. To B12 or not to B12: Five questions on the role of cobalamin in host-microbial interactions. *PLoS Pathog.* 2019 Jan 3;15(1):e1007479. doi: 10.1371/journal.ppat.1007479. eCollection 2019 Jan. Review. PubMed PMID: 30605490; PubMed Central PMCID: PMC6317780.

**Singh S**, Wang L, Schaff DL, Sutcliffe MD, Koeppl AF, Kim J, Onengut-Gumuscu S, Park KS, Zong H, Janes KA. In situ 10-cell RNA sequencing in tissue and tumor biopsy samples. *Sci Rep.* 2019 Mar 20;9(1):4836. doi: 10.1038/s41598-019-41235-9. PubMed PMID: 30894605; PubMed Central PMCID: PMC6426952.

**Lu AC**, Beenhakker M. Casting a Wide Net to Catch Seizures. *Epilepsy Curr.* 2019 Jul-Aug;19(4):258-260. doi: 10.1177/1535759719854757. Epub 2019 Jun 13. PubMed PMID: 31189383.

Shim JV, **Chun B**, van Hasselt JGC, Birtwistle MR, Saucerman JJ, Sobie EA. Mechanistic Systems Modeling to Improve Understanding and Prediction of Cardiotoxicity Caused by Targeted Cancer Therapeutics. *Front Physiol.* 2017 Sep 8;8:651. doi: 10.3389/fphys.2017.00651. eCollection 2017. PubMed PMID: 28951721; PubMed Central PMCID: PMC5599787.

Fernández-Castañeda A, Chappell MS, Rosen DA, **Seki SM**, Beiter RM, Johanson DM, Liskey D, Farber E, Onengut-Gumuscu S, Overall CC, Dupree JL, Gaultier A. The active contribution of OPCs to neuroinflammation is mediated by LRP1. *Acta Neuropathol.* 2019 Sep 24. doi: 10.1007/s00401-019-02073-1. [Epub ahead of print] PubMed PMID: 31552482.

Rosen DA, **Seki SM**, Fernández-Castañeda A, Beiter RM, **Eccles JD**, Woodfolk JA, Gaultier A. Modulation of the sigma-1 receptor-IRE1 pathway is beneficial in preclinical models of inflammation and sepsis. *Sci Transl Med.* 2019 Feb 6;11(478). pii: eaau5266. doi: 10.1126/scitranslmed.aau5266. Erratum in: *Sci Transl Med.* 2019 Mar 27;11(485):. PubMed PMID: 30728287.

Paysour MJ, **Bolte AC**, Lukens JR. Crosstalk Between the Microbiome and Gestational Immunity in Autism-Related Disorders. *DNA Cell Biol.* 2019 May;38(5):405-409. doi: 10.1089/dna.2019.4653. Epub 2019 Feb 28. Review. PubMed PMID: 30817175; PubMed Central PMCID: PMC6531905.

# MSTP

The University of Virginia Medical Scientist Training Program



Special thanks to **Ashley Woodard** and the UVA  
APSA Communications Committee!

HeeJin Cheon

Adam Lu

Sarb Nagdas

Adi Narahari

Katie Owsiany

Mark Rudolf

Jeff Xing

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Arash Tavakoli: (Instagram: [arashphoto](#))

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