

FALL 2018

# PROGRESS NOTES

A NEWSLETTER OF THE  
UVA MD/PHD PROGRAM



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*A message from Dean Kedes*

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*...AND MORE!*

# THE MEDICAL SCIENTIST TRAINING PROGRAM AT UVA

## AN UPDATE FOR MD/PHD ALUMNI

October, 2018

Although Charlottesville is only just now feeling the evening chills that mark the beginnings of Fall, the members of this year's MSTP entering class arrived in early July, completed their first laboratory rotations, and are well entrenched in the rigors of their first year medical school and MSTP classes. Last season's recruitment efforts were, again, highly successful with the matriculation of six talented students, representing a diverse range of scientific backgrounds and interests. UVA's MSTP fully recognizes that attracting the best applicants takes the combined efforts of our *academical* village. I'm happy to report that we have successfully increased the levels of active participation of a growing number of dedicated faculty and departments from the school of medicine as well as from across Grounds. Our last tabulation revealed 154 faculty MSTP mentors from approximately 30 different departments or clinical divisions. Reflecting this remarkable diversity and university-wide involvement in the Program, the 30 students in the research component of their training are working in 28 different laboratories representing 11 departments.

### *Markers of success—UVA's MSTP students excel*

A sign of a strong MSTP is perhaps best reflected by the accomplishments of its students. The UVA MSTP students have simply been outstanding in this regard. They continue to publish impactful first author studies and have chalked up record numbers of NIH and other individual fellowships. Of the students in their 2<sup>nd</sup> graduate school year and above, a remarkable 55% (12 of 22) have individual fellowships while many of the remaining students are planning to submit or are awaiting the results from their applications. Finally, over the past two years, 86% (12 of 14) graduating students matched at their first choice of residences.

### *Steering the direction of the MSTP—a group effort*

Critical for the overall direction of the MSTP is the Executive Committee. This year the MSTP welcomes **Coleen McNamara, MD** (Medicine, Division of Cardiology) to this committee as the Associate Director for Scientific Programs, replacing Bettina Winckler, PhD who served in this position for the last three years. The other members of the Executive Committee are **James Mandell, MD, PhD**, Associate Director for Curriculum and **Adam Goldfarb, MD**, Associate Director for Admissions, and myself. This Executive Committee receives additional critical input from the MSTP Advisory and Admissions Committee (MFAAC), comprised of faculty from seven departments, five from the School of Medicine and two (Biology and Chemistry) from the School of Arts and Sciences and, together, include four MD-PhD and 7 PhD faculty members.

### *Taking advantage of the wisdom of UVA MSTP alumni*

A number of our MSTP alumni are now also on the UVA faculty and some are taking active leadership roles in the Program, including **Heather Ferris, MD, PhD** ('06) who serves on the MFAAC and **C. John Luckey, MD, PhD** ('01) who serves on the MFAAC and, additionally, directs the first-year MSTP course, *Topics in the Molecular Basis of Human Disease*. In addition, many of our alumni have offered to return to share their individual experiences at the yearly MSTP retreat. This past summer Dr. Jeff Sturek, MD, PhD, ('12), presented a clinical case titled "Filling the holes in a simple case of vision loss", and Laura Adang, MD, PhD ('09) and Brandon Kremer, MD, PhD ('09) served on the professional advisory discussion panel, sharing their individual professional and personal journeys since graduation. The current students greatly appreciate interacting with and learning from our alumni and I encourage you to please contact us if you would consider providing advice to or would like to interact with our current students. It's a great way to become involved (see below for more details).

### *Strength in diversity and inclusion*

With the faculty from the Arts and Sciences and the SOM joining forces and feeling increasingly vested in the success of the MSTP, and the active participation of the enthusiastic MSTP trainees, the Program has had, over the last few years, remarkable success in recruiting the most diverse entering classes in the history of the Program. These trainees not only come from highly varied demographic backgrounds but also represent a wide gamut of scientific interests, varying from structural biology to behavioral neuroscience to molecular virology as well as many others scientific disciplines. With the help of the medical school technical standards committee and in coordination with the School's biomedical umbrella program (BIMS), the MSTP has also successfully recruited gifted dual degree trainees who have excelled even in the face of ADA-recognized disabilities. 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.

### *Ashley Woodard joins as Program Coordinator*

These successes in recruiting and training reflect a team effort but over the past year have benefited enormously from the tireless efforts of Ashley Woodard, MS, the newly recruited Program Coordinator. Ms. Woodard, a 2008 graduate of UVA, spent over 9 years working in undergraduate admissions at two small, liberal arts colleges in Virginia. With little to no *lag time* after assuming the position in January 2018, in the middle of last year's recruiting season, Ashley has transformed the operation of the Program, overseeing both student and faculty MSTP committees, the daily operations, and recruitment logistics, all while managing this on a tight budget. Due to these abilities and her adroit mastery of the nuances of the training program, the MSTP has also asked her to represent the Program at national pre-doctoral recruiting conferences. Ms. Woodard remains the first contact person for applicants, current trainees, MSTP faculty mentors as well as the MSTP Admissions and Advisory and Executive Committees.

### *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. Also, please consider coming to BIMS (biological sciences umbrella program) **REUNION** (Friday, April 12 & Saturday, April 13, 2019), which will include MSTP-specific activities. If you'd like to help the Program and its students, consider making a 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.



Sincerely,

A handwritten signature in black ink, appearing to read "H. Kedes". The signature is stylized and cursive.

Dean H. Kedes, PhD, MD

Director, Medical Scientist Training Program

## INTRODUCING THE MSTP CLINICAL SKILLS INITIATIVE

*Student-initiated Clinical Skills Nights that bring together MSTP students, residents, and medical students set to become official component of MSTP curriculum*

By Mark Rudolf, G4

After two years devouring clinical knowledge and honing patient interview skills, MSTP students at UVA immerse ourselves in the world of basic science. Between experiments, presentations, and fellowship applications, we have plenty on our minds during PhD training. This devotion to working in lab means that clinical skills can become an afterthought. But since 2016, graduate students in the UVA MSTP have dusted off their white coats every other month and participated in Clinical Skills Nights to rehearse fundamental aspects of the patient interview and physical exam.

“There was a big activation energy to maintaining our clinical acumen,” recalls Ricky Baylis, current G4. That’s why in 2016, Baylis and other MSTP students thought about how they could integrate clinical skills training into the PhD years without disrupting schedules packed with lab work.

“The idea of trying to limit that activation energy by having bi-monthly evening sessions allowing students to work a full day in lab and then come, eat dinner and do some clinical skills training seemed to make a lot of sense,” says Baylis. The idea of Clinical Skills

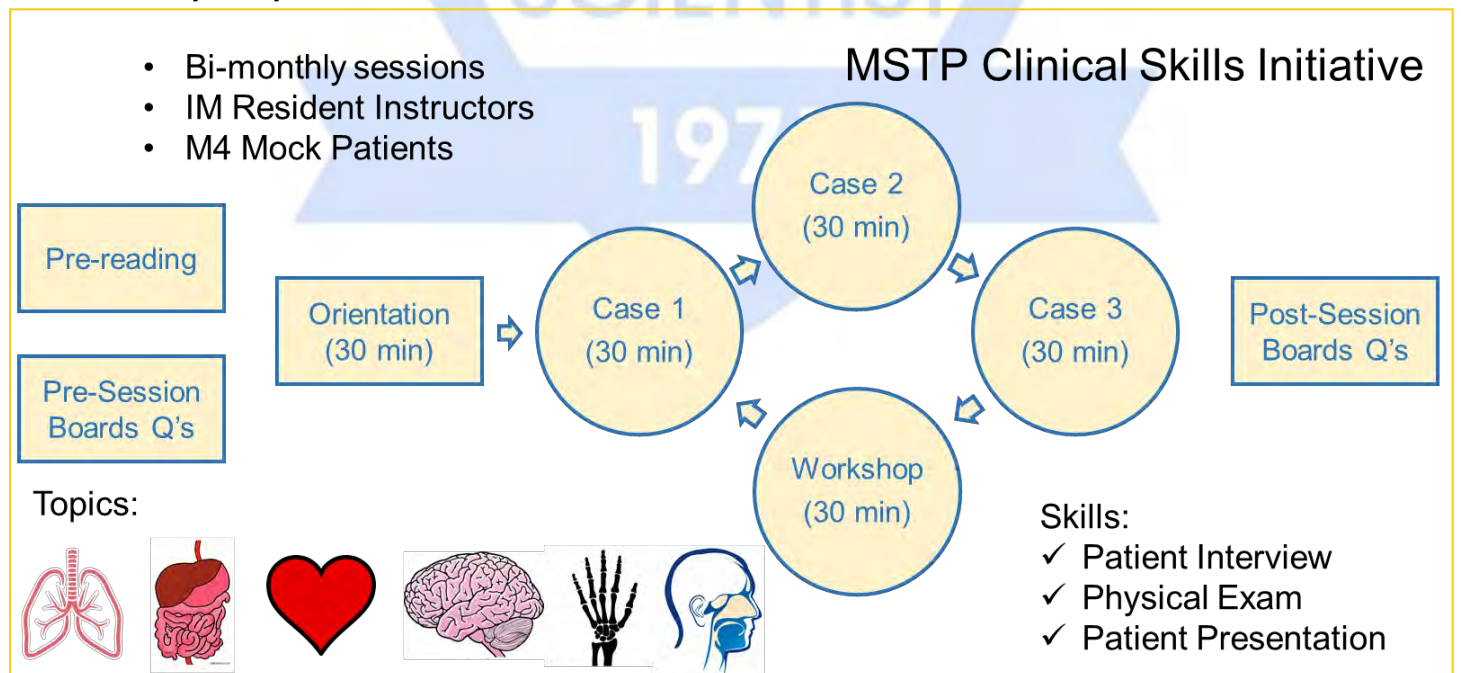
Nights caught on with multiple collaborators around UVA who have generously lent their expertise and resources. Anne Chapin and Laura Boatright of the School of Medicine’s Clinical Skills Center enthusiastically supported the program from the onset, coordinating the use of its realistic facilities--complete with exam tables and otoscopes--for the mock patient interviews. M4 medical students were eager to help their MSTP colleagues by serving as mock patients.

Another decisive boost to the program came when Internal Medicine Attending and Residency Program Director Brian Uthlaut MD connected the MSTP with aspiring clinical educators within the Internal Medicine Residency Program at UVA. Residents Amy Ogurick and Samuel Oliver have spearheaded the effort to bring invaluable clinical insight to each session. With all this collaboration, Clinical Skills Nights have brought together a range of learners and educators at the UVA School of Medicine, helping the program evolve into a highly valued aspect of our MSTP training.

### Format of Clinical Skills Nights

Though the personnel and format of Clinical Skills Nights has been continuously tweaked since its inception, the overall concept remains faithful to its early days, when sessions were entirely run by students.

Prior to sessions, MSTPs receive a packet of high-yield reading material assembled by an internal



medicine resident covering the fundamentals of an organ system, pertinent physical exam maneuvers, and clinical pearls. The sessions kick off with a resident-run orientation of that material. Then, students break out into small groups to rotate through three standardized cases and a skills workshop. M4 medical students serve as mock patients with the aid of detailed case writeups. Residents at each station offer teaching points as the MSTPs take turns interviewing, performing the physical exam, and presenting the patient.

To help assess their progress, MSTPs fill out boards-style questions before and after each session to track progress. At the end of each year, the Clinical Skills Center hosts a *bona fide* OSCE (Observed Structured Clinical Examination) which features professional standardized patients and scored post-encounter notes. In the future, this data will be used to assess the efficacy of the “educational intervention” in improving MSTP student performance in clinical clerkships. As of now, student feedback is the primary measure of the program’s success, but that anecdotal evidence is strong.

“It definitely helped,” said Scott Seki, who defended his PhD thesis and entered clinical clerkships in June. He cited the pre-reading packets as useful study material for his Family Medicine Shelf exam, and felt he benefited from rehearsing patient presentations during the sessions.

Undoubtedly, Clinical Skills Nights relieve some of the anxiety MSTPs harbor about being behind their newly minted M3 colleagues. “Students can practice their clinical skills in a low-stakes, non-judgmental setting while reviewing clinical knowledge,” notes Amanda Ward, a current G2 and co-leader of the Clinical Skills Sessions. “Every step of this exercise forces our students to review and re-learn.”

## From Concept to Curriculum

MSTP Director Dean Kedes has enthusiastically supported the student-led Clinical Skills Initiative from the beginning, recognizing that it addresses one of the main dilemmas of integrating MD/PhD training.

“Over the years, one of the biggest challenges for MSTP students here (and, for that matter, all MD/PhD students in the country) is negotiating the transition back to clinical clerkships after 4 or 5 years in the lab,” states Kedes. Going forward, Clinical Skills Nights will be an officially sanctioned aspect of the MSTP curriculum at UVA. Additionally, Kedes and Uthlaut secured NIH funding to support the program in the near term, with the hope that the School of Medicine will lend permanent financial support going forward.

As successful as they’ve been, Clinical Skills Nights may one day serve as a model for MD/PhD programs nationwide. But in any event, we students are thrilled to have this opportunity to refresh our skills, and ultimately, be the best physician-scientists we can be. For Baylis, who plans to return to clerkships next spring, this has always been the main goal.

“The new [documentation policy] allows residents to use a medical student’s notes as long as they sign off on it,” he says, mentioning that note-writing will feature more in future iterations of the program.

Thanks to the collective effort of the Clinical Skills Night cast, MSTPs will be even more prepared to join the patient care team after their PhD. As immersed as we are in what lies under the microscope, it’s been a helpful reminder to keep the medical side in focus.



The MSTP Welcomes the Entering Class of 2018!

## NEW STUDENT BIOS

by HeeJin Cheon, M2



### NIKET YADAV

Niket was born in Cincinnati, Ohio and moved to West Chester, Ohio a few years later. During early childhood, he was fascinated by the intricacies of seemingly simple everyday items, like the siren of a firetruck, and began exploring his passion for science by attempting to draw anatomy charts of organ systems from textbooks (with some success!). During high school, Niket participated in regional and state science fairs, and carried his passion for research into undergrad.

Niket chose to attend the nearby University of Cincinnati for his undergraduate education, where he double majored in Neuroscience and Biochemistry. While completing these majors, he developed an intrinsic passion for mechanistic neurobiology and hoped to carry that interest forward. In addition to spending time in the lab, Niket also worked to raise

funds for the underserved of the Cincinnati Tristate area via food drives sponsored by the Freestore Foodbank.

Outside of academics, Niket also has a passion for fitness (especially weight lifting) and nutrition. On the sports side, Niket used to play basketball and currently enjoys watching and discussing NBA basketball. He also enjoys online gaming very much.



## GUSTAVO PACHECO

Gustavo was born in Fort Worth, TX, but moved to Bethesda, MD when he was two years old. In his childhood, he was fascinated by the natural world. He spent many afternoons in the public libraries reading science books about dinosaurs and DNA. He carried his love for science into high school, where he spent his afternoons at the National Institute of Mental Health and captaining his school's Science Olympiad team.

Gustavo left Bethesda for the frigid and quirky University of Chicago, where he completed a major in Biological Sciences, specializing in Cancer Biology, and a minor in Romance Literatures, concentrating in 20th century French and Spanish texts. His interactions with the rare lung disease patients he was researching in the Pathology department compelled him to pursue a career in the study and treatment of rare diseases. When Gustavo was not in the library or the lab, he enjoyed exploring the exhibits at the Art Institute of Chicago, the shows at the Lyric Opera of Chicago, and new restaurants.

Gustavo returned to the NIH for his post-baccalaureate studies in three-dimensional cell migration. Outside of the lab, Christina, his fiancée, and he enjoy exploring new cuisines and coffees. He likes waking up early to watch the sunrise. He hopes to further develop his interest in running along Charlottesville's hilly trails while maintaining his addiction to NPR podcasts.



## BLAIR TOWERS

Blair is originally from Goochland, VA and grew up on a farm with lots of animals, including chickens, cows, donkeys, and peacocks. She left Virginia for college and went to Washington College in Chestertown, MD. At Washington College, she majored in Biology and Chemistry and sailed on the Varsity Sailing Team.

After graduating, Blair took three gap years to conduct research in the addiction sciences at the National Institute on Drug Abuse. Her research was focused on developing an extended access mouse model of opioid dependence in male and female mice. She is very passionate about helping individuals with substance use disorders and studying the neurobiology of addiction.

Outside of the lab, Blair can usually be found playing with her Boykin Spaniel, Lacy, and hiking new trails. She loves the outdoors and is always looking for a new adventure.

Blair is excited to be back in Virginia and a part of the MSTP at University of Virginia School of Medicine!



## RYAN MULLIGAN

Ryan was born in Connecticut, raised in New Jersey, and moved to Jacksonville, Florida at the age of 13, which he now calls home. Ryan jokes that his coming to UVA has been the start of his slow migration back to the Northeast. He decided to stay close to home for his undergraduate years and attended the University of Florida, in Gainesville, where he majored in biochemistry. While there, Ryan also took part in UF's Chapter of the Golden Key Honor Society, chemistry club, and was an avid intramural sports participant.

Beginning in his sophomore year of undergrad, Ryan began working in UF's Center for Translational Research in Neurodegenerative Disease. Over a tenure of four years, he studied the role of Matrin-3, an RNA binding protein, in ALS and its subsequent liquid-like biophysical properties. Ryan additionally worked on therapeutically targeting pathological expanded trinucleotide repeats using the CRISPR-Cas system

and AAV delivery vectors. This work in the CTRND solidified his interest in neurodegenerative disease research and in pursuit of a dual degree. Ryan hopes to continue along this line of research here at UVA, and extend his experiences to the clinical field of neuro-ophthalmology, which Ryan has been entranced by ever since he, "poked a sheep's eyeball in 7<sup>th</sup> grade biology class."

Outside of forever defining himself as a student, Ryan greatly enjoys watching hockey (Go Devils), being an amateur film critic (*Prisoners* is his favorite movie), and going to art museums. Ryan is also interested in music, has a growing vinyl collection, and is gradually acquiring some guitar ability (though Ryan's neighbors might disagree).



## WEI MA

Wei grew up in China and moved to Maine when he was 11 years old. While the move was challenging, he persevered and was the first person in his family to graduate high school.

Wei attended Colby College (also in Maine) and graduated in 2016 with a major in Biology. During his undergraduate years, he conducted probiotic research at Colby and schizophrenia research at Johns Hopkins University. He completed his two-year post-baccalaureate research in computational biology at the National Institutes of Health where he studied cancer genetics using Next-Generation Sequencing.

Outside of the lab, Wei enjoys playing with his two yellow Labrador Retrievers and cooking. Noah, his fiancé, and Wei love to host dinner parties. Be sure to let Wei know if you like dogs and want to enjoy delicious home-cooked meals! He also loves

to explore the outdoor trails and try different restaurants around town.

He is excited to begin his MD-PhD journey at the UVA SOM! If you see him around, stop and say hi!





## GREG BUSEY

Greg was born and raised in Virginia. As a kid he loved taking things apart to figure out how they worked, although reassembly was often an afterthought. He also enjoyed making things out of scrap and duct tape, including many of his yearly Halloween costumes: which included, among other things, “the duct tape man” (a little known, but very adhesive super hero) and a human-sized Green Lego brick.

For college, Greg went off to Happy Valley to earn his Biology degree at Penn State. His favorite class was Astrobiology, taught by Christopher House, a member of the Mars Curiosity Rover science team. While driving, running, or sorting cells in the lab, Greg enjoys listening to podcasts. His favorite is *Houston, We Have a Podcast* which features interviews with scientists, astronauts, and physicians working at the NASA Johnson Space Center. In addition to his coursework, Greg was a teaching assistant for Introductory Cell Biology and Metabolic Biochemistry. His students knew him best for his corny jokes at pre-exam review sessions.

He was also interested in ion channel biophysics and worked on studying mechanisms of allosteric modulation of voltage-gated potassium ion channels. Using published channel structures to design interesting mutants helped him to discover an interest in structural biology, and he intends to conduct graduate research that blends structural techniques with basic biochemical and physiological experiments.

Greg is excited to be back in Virginia to complete his medical and graduate training at the University of Virginia School of Medicine. He chose this program for its collaborative

environment, friendly people, quality education, and rigorous science. His first year has, thus far, been fun, exciting, and relatively stress-free, thanks to all the great friends and mentors available both in his medical school class and at all levels of the Medical Scientist Training Program. If you see him, make sure to say hi, and challenge him to a game of ping pong (which you’ll likely win).

## AFFIRM Fall speaker Dr. Andrea Cox, M.D., PhD. gives guidance on the physician/scientist career path

By Katie Owsiany, G3

Advocates for Females in Research and Medicine (AFFIRM) kicked off the school year with a career seminar featuring Dr. Andrea Cox, a UVA alum and infectious disease expert physician-scientist visiting from Johns Hopkins University. An internationally recognized scientist specializing in chronic infection, Hepatitis C and HIV, Dr. Cox addressed her unique role bridging clinical need and basic science research, sharing her experiences at her HCV at-risk patient clinic. In the city of Baltimore, Dr. Cox appreciated her opportunities to treat a diverse patient population, with a mix of wealthy and poor patients of surprising youth. In the last five years, the opioid epidemic has led to rapidly rising rates of HCV infection by drug users, creating huge demand for treatment of and research on this disease. Dr. Cox said that staying in touch with people and the community was very important to her and motivating to her research, allowing her to see the questions that need to be answered and apply the newest insights to clinical practice. Talking about her typical patient, “Now we know that people can be re-infected and acquire sanitizing immunity many times,” Dr. Cox said. “It’s all about preventing the progression to chronic infection.”

Dr. Cox addressed the surprisingly small workforce of physician scientists (only 14,000 such professionals self-identify in the US) and cited systemic discouragement as a key contributor to declining numbers and lack of diversity of physician scientists at the professor level. “Honestly life as a physician-scientist can be more flexible than life as a full time clinician,” Dr. Cox insisted, “you can read a paper, evaluate experimental results, almost anywhere,



anytime.” Dr. Cox cited role of mentors as crucial, especially to early career success like a K award or first R01 grant. She also stressed the importance of a collaborative environment that encourages being generous with authorship, showing her last-author paper with several prominent mentors as middle authors. She also drew laughs by showing pictures of her mentors—all older white men—and asking what they all had in common. Despite the importance of having minority and underrepresented role models, she noted that you can still learn from people who don’t look like you.

Even though Dr. Cox advised taking dedicated time to learn medicine—like she did in her internal medicine and ID fellowships—the thrill of discovery kept her coming back to science. Working on T cell antigens as a PhD student, Dr. Cox still counts her discovery of tumor peptide antigens as one of her favorite moments in science. Part of the joy of science is that it doesn’t always follow a linear path—later in the talk she shared work by her lab on the role of TGF- $\beta$  in liver fibrosis that ultimately was used in FDA application for PD-1 inhibitors.

Finally, Dr. Cox wanted to inspire students and encourage them to get involved and stay involved in research. With three kids— one born in the third year of medical school, one in residency, and one in fellowship— life didn’t stop for work. Multitasking, delegating, and keeping up hobbies like cooking and plays keeps work and life in balance. But most importantly, Dr. Cox advised not to write off life for the sake of work or vice versa, because no one has a perfect plan. “Do what you love, love what you do. You can have it all.”



## Announcing Our Next UVA Medical Scientist Training Program Distinguished Lecturer: Christopher Miller, PhD

By Adi Narahari, G3

The MSTP Distinguished Lecture is a long time tradition of the University of Virginia MD/PhD program involving a completely student-run nomination and voting process. We are delighted to announce this year's speaker as Dr. Christopher Miller.

Dr. Miller is a Professor of Biochemistry at Brandeis University in Waltham, Massachusetts. He is a leading expert on studying ion channel biophysics. Miller had his beginnings in science at Swarthmore where he was interested in becoming a theoretical physicist. Quickly, he realized that becoming a physicist was not going to be his future career. After taking a class in biophysics, Chris Miller was hooked. This course would lead to a lifelong search for the mechanisms that allow our hearts to beat, baseball players to hit 100 mph fastballs, and control our basic bodily functions. Ion channels are at the very core of each of these activities and Chris Miller has dedicated his illustrious career to characterizing nature's most elegant proteins.

Following his undergraduate studies, Miller obtained his PhD with Gilbert Ling at the University of Pennsylvania. Here he studied the existence and function of cellular membranes. Following his graduate training, Miller joined the lab of Efraim Racker, an Austrian biochemist, at Cornell University in Ithaca. Racker founded the biochemistry department at Cornell University. Here, Racker identified and purified Factor 1, a component of ATP Synthase. With Racker, Miller learned electrophysiology and reconstitution techniques.

Ultimately, the techniques he learned in Racker's lab would lead into his work at Brandeis. Miller worked on K<sup>+</sup> channels in his new lab at Brandeis. Throughout his career, he has characterized the K<sup>+</sup> channels in numerous ways, including the mechanism by which charybdotoxin (deathstalker scorpion toxin) is poisonous to humans. In the 1990s, his group also started to study ClC-type chloride channels. Miller continues to work on ClC-type channels and transporters today. His lab uses techniques mainly in structural biology and electrophysiology to uncover mechanisms of ion transduction.



Scientists of course pride themselves on their work; however, they also pride themselves on their trainees. Dr. Miller has not only performed superb science in his laboratory, but he has trained exceptional scientists who have gone on to make incredible breakthroughs. A few of these scientists are Roderick MacKinnon (Rockefeller), Gary Yellen (Harvard Medical School), Joseph Mindell (NIH), Douglas Theobald (Brandeis), and Robert Rosenberg (Earlham College).

We are delighted that Dr. Miller has accepted our invitation to speak as our Distinguished Lecturer in May 2019! Please contact members of the UVA MSTP Scientific Committee for details (Ricky, Sarb, or Adi).

*This article drew from a PNAS Profile of Dr. Miller by Tinsley H. Davis. You can find that [here](#).*

# SOUTH ATLANTIC MEDICAL SCIENTIST ANNUAL MEETING

October 13-14, 2018  
Darden Conference Center  
University of Virginia

**Abstract deadline: October 1st**  
**Online registration deadline: October 5th**

- Meet physician-scientists from diverse fields (e.g. Nephrology, Endocrinology, Radiology, Dermatology, Surgery, Pediatrics, Neurology, Infectious Disease, Anesthesiology, etc)
- Ask career-related questions about mentorship, grantsmanship, or applying to and succeeding in training programs at various stages from graduate to post-graduate
- Junior-faculty led grantsmanship panel (how to tackle F or K awards)
- Present your research (trainees eligible for cash prizes!)

**Keynotes will include personal stories from their career:**



**Heidi Kong**  
MD, MHSc

Investigator, NIAMS



**Stephen Katz**  
MD, PhD

Director, NIH NIAMS



**W. Shawn Carbonell**  
MD, PhD

Co-Founder, OncoSynergy



**Anne-Marie Carbonell**  
MD

Co-Founder, OncoSynergy

The South Atlantic Medical Scientist Annual Meeting is a regional conference affiliated with the national American Physician Scientist Association. Its career-development focus connects trainees (undergrad, post-bacc, PhD, MD, DO, postdoc, resident/fellow/PGY), with mentors who are established principal investigators and exemplary physician or scientist role models. In addition to inspirational keynote talks, multiple informal networking formats and a high mentor to trainee ratio enable many opportunities for face-to-face questions and career discussion.

To find out more, or register: [www.SAM2conference.org](http://www.SAM2conference.org)

Everyone is welcome to attend!

# STUDENT UPDATES



Pictured at left:

- Back row (L to R): James Cronk, Monique Anderson, Janelle Weaver, Sachin Gadani
- Front row (L to R): Tzu-Ying Chuang, Sowmya Narayanan, Eve Champaloux

## 2018 Match Results

Name	Institution	Specialty
Monique Anderson	Emory	Neurology
Eve Champaloux	University of Washington	Otolaryngology
Tzu-Ying Chuang	Thomas Jefferson University	Neurology
James Cronk	Johns Hopkins	Pediatrics
Sachin Gadani	Johns Hopkins	Neurology
Sowmya Narayanan	Pittsburg	Surgery
Janelle Weaver	Providence St. Peter Hospital	Family Medicine

## Student Awards and Grants

50% of the eligible MSTP students hold a National Research Service Award (NRSA) or AHA award.

The following students have NRSA/AHA award:

- 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
- Kristen Penberthy (F30), entered 2010

## 2018 Public Defense Dates

2018, February 9	Allissia Gilmartin
2018, April 19	Annie Carlton
2018, May 31	Ali Khan
2018, June 15	Scott Seki
2018, June 15	Jacqueline Stevens



### Student Publications This Year to Date

Gomez D, **Baylis RA**, Durgin BG, Newman AAC, Alencar GF, Mahan S, St Hilaire C, Müller W, Waisman A, Francis SE, Pinteaux E, Randolph GJ, Gram H, Owens GK. Interleukin-1 $\beta$  has atheroprotective effects in advanced atherosclerotic lesions of mice. *Nature Medicine*. 2018;13:79. doi:10.1038/s41591-018-0124-5.

Newman AA, **Baylis RA**, **Hess DL**, Griffith, SD, Shankman, LS, Cherepanova, OA, Owens, GK. Irradiation abolishes smooth muscle investment into vascular lesions in specific vascular beds. *JCI Insight*. 2018;3(15). doi:10.1172/jci.insight.121017.

**Stevens JS**, Gray MC, Morisseau C, Criss AK. Endocervical and Neutrophil Lipoxygenases Coordinate Neutrophil Transepithelial Migration to *Neisseria Gonorrhoeae*. *J Infect Dis*. 2018 Jun 13. doi: 10.1093/infdis/jiy347. PMID: 29905822

**Seki SM**, Stevenson, M, Rosen, AM, Arandjelovic, S, Gemta, L, Bullock T, Gaultier, A. Lineage-specific metabolic properties and vulnerabilities of T cells in the demyelinating central nervous system. *J Immunol*. 2018 Jun 15. doi: 10.4049/jimmunol.1600825. PMID: 28507026

**Anderson M**, Kashanchi F, Jacobson S. Role of Exosomes in Human Retroviral Mediated Disorders. *J Neuroimmune Pharmacol*. 2018 Apr 14. doi: 10.1007/s11481-018-9784-7. PMID: 29656370

**Cronk JC**, Filiano AJ, Louveau A, Marin I, Marsh R, Ji E, Goldman DH, Smirnov I, Geraci N, Acton S, Overall CC, Kipnis J. Peripherally derived macrophages can engraft the brain independent of irradiation and maintain an identity distinct from microglia. *J Exp Med*. 2018 Apr 11. pii: jem.20180247. doi: 10.1084/jem.20180247. PMID: 29643186

**Carlton AL**, Illendula A, Gao Y, Llaneza DC, Boulton A, Shah A, Rajewski RA, Landen CN, Wotton D, Bushweller JH. Small molecule inhibition of the CBF $\beta$ /RUNX interaction decreases ovarian cancer growth and migration through alterations in genes related to epithelial-to-mesenchymal transition. *Gynecol Oncol*. 2018 Mar 15. pii: S0090-8258(18)30174-4. doi: 10.1016/j.ygyno.2018.03.005. PMID: 29551565

Gilchrist CA, Cotton JA, Burkey C, Arju T, **Gilmartin A**, Lin Y, Ahmed E, Steiner K, Alam M, Ahmed S, Robinson G, Zaman SU, Kabir M, Sanders M, Chalmers RM, Ahmed T, Ma JZ, Haque R, Faruque ASG, Berriman M, Petri WA Jr. Genetic diversity of *Cryptosporidium hominis* in a Bangladeshi community as revealed by whole genome sequencing. *J Infect Dis*. 2018 Mar 5. doi: 10.1093/infdis/jiy121. PMID: 29514308

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