

THE VULCAN LETTER

Voice of the UAB MSTP

JUNE 2016

Editor's Welcome

Paige Souder, GS-2

While to most of you reading this newsletter, it is somewhat immoderate to write an eloquent and heart-felt homage to our MSTP (because its excellence precludes the need for public accolade), to the students we welcome this June, please know it is absolutely deserved. From the much needed study breaks in the MSTP office with one of Randy's stories (which never disappoint), to get-togethers at Dr. Lorenz's house, to mid-week dinners and dog-walks with colleagues, this program is a family by any definition. Throughout the years, this family has grown to produce so many successful



physician scientists—relish the fact that you get to be a part of this incredible community. For those beginning residency this year, we say, 'see you soon,' and for those who are two weeks into their first lab rotation, we say, 'it's only just begun.' Wherever you are in this crazy journey of a program, be proud of where life has taken you so far and always be looking forward to what is coming up next. It is a privilege to know all of you. May this newsletter introduce you to someone new!

Do you even go here? 2017 Entering Class

Kristina Tymes-Wilbekin, MS-2

Josh Bernstock

Brandeis Univ (BS/BS Biochem/Biology)
Georgetown Univ (MS Biophys/Physiology)
Columbia Univ (MPH Env Health)
Univ Cambridge, UK (PhD Neuroscience)



Then: I started on my current trajectory into science and medicine at Brandeis University, continued my education at Georgetown University, then studied at Columbia University's Mailman School of Public Health. Throughout the course of my studies, interdisciplinary research experiences in

biochemistry, radiation/molecular biology, and (most recently) neuroscience have broadened my perspective and changed my conception of human diseases and how they arise.

Now: My current scientific passion revolves around understanding the molecular mechanisms that contribute to pathology in central nervous system diseases and disorders. Via engagement with mentors at both the National Institute of Neurological Disorders and Stroke and the

University of Cambridge, I have sought to advance neuroprotection/regenerative medicine for both patients and families in need. I look forward to my clinical training as a member of the UAB MSTP.

If I were an animal, I would be: extinct!

Christine Carico

UCLA (BS Neuroscience)

Then: I am originally from the San Francisco Bay Area. Since my first real biology class in 7th grade, I had always been passionate about the biological sciences and had the opportunity to do research at Stanford in the Department of Pathology during my later years of high school. I was also fortunate enough to be welcomed into the operating rooms and cath-angio labs at Stanford Hospital to shadow a variety of physicians, which really solidified my desire to pursue a career as a physician scientist. After high school I moved to Los Angeles where I studied neuroscience at UCLA (Go Bruins!) and did clinical brain tumor research at Cedars-Sinai Medical Center. Throughout my final year at UCLA I also



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Entering Class of 2017, continued

completed a year-long paid research scholarship at Cedars-Sinai during which I was part of a team that studied the efficacy of biologically derived nanoconjugates as targeted brain tumor therapies.

Now: After graduating and completing this scholarship year I moved to San Diego where I initially worked briefly as an EMT before accepting a research associate position in the UCSD Department of Pediatrics. I worked there for about a year before moving to Birmingham to join the Medical Scientist Training Program at UAB, and couldn't be more thrilled and honored to be here! In my spare time I really like being active, anything from hiking to running to lifting. I'm also a huge book worm/documentary enthusiast and (when I'm not working/studying/at the gym) am often buried in some type of crime/legal thriller novel or documentary.

If I were an animal, I would be: a shark—Great White if I had to choose a type.

Seth Fortmann

Univ Maryland, College Park (BS Biology)

Then: I was born and raised on the Chesapeake Bay in Pasadena, Maryland. I spent much of my childhood fishing and crabbing these waters with my brother. In fact, my first dream job was to be a commercial crabber. I have always loved the outdoors, and this passion largely stimulated my initial interests in biology. In addition, lacrosse has played a significant role in my life for many years. I began playing in the 3rd grade and continued through college. I attended Roanoke College in Salem, Virginia. My research career began as a freshman at Roanoke. I joined a zebrafish laboratory and fell in love with the thrill of discovering things that no one had discovered before. After graduating in 2015, I went on to Johns Hopkins University where I was a research technologist in a retinal lab at the Wilmer Eye Institute.

Now: My interest in the eye has continued to mature over the past 2 years, and I plan to continue studying the retina for my PhD thesis. I am most interested in better understanding the pathobiology behind diabetic retinopathy. I am also interested in understanding how various polymorphisms promote retinitis pigmentosa and age-related macular degeneration. I am most excited to try my hand at fly fishing in some of Alabama's famous rivers. I have never fly fished before so I will probably be pretty terrible at first but given the length of this program,



time is on my side.

If I were an animal, I would be: a gorilla because they are beautifully designed animals with incredible strength and yet remarkable gentleness. However, given that they are a critically endangered species, it probably wouldn't be the best time to be a gorilla..

Melissa Jennings

UGA (BS Biochemistry)

Then: I grew up in Buford, GA, and went to the University of Georgia where I majored in Biochemistry and Molecular Biology, and also obtained a minor in Global Health. After completing my undergraduate degree, I worked at the NIH for a year as a post-baccalaureate fellow.

Now: I am currently interested in infectious disease research. In my free time, I like to do aerial hoop or indoor rock climbing. I also like to eat delicious food and am excited to find new "foodie" spots.

If I were an animal, I would be: a tortoise—preferably on the Galapagos Islands.

Alana Jones

Howard Univ (BA/BS Latin/Biology)

Then: I was born and raised in Opelika, Alabama, and attended Howard University in Washington, DC, earning degrees in Latin and Biology. During undergrad, I participated in the UAB PARAdiGM summer program, where I studied pulmonary inflammation with Dr. Namasivayam Ambalavanan and Dr. Tamas Jilling. Last year, I was a postbaccalaureate fellow studying molecular mechanisms of breast cancer disparities with Dr. Kevin Gardner at NIH.

Now: My research interests include cancer biology, immunology, and health disparities. And—in true foodie fashion—I'm most excited to try all the new restaurants in Birmingham.

If I were an animal, I would be: a panther

Bryan Mott

George Mason (BS/MS Chemistry/Chemistry)
Johns Hopkins (PhD Chemistry)

Then: Originally from a really small town in northwestern PA, I went to undergrad at George Mason University in Fairfax, VA (just outside of DC). I stayed 6



Entering Class of 2017

years and earned a BS and MS in chemistry. I then worked for 2 years at Merck in West Point, PA, then transitioned to the NIH Chemical Genomics Center (NCGC) for another 2 years. I then returned to school to earn a PhD in chemistry from Johns Hopkins University. After graduating, I returned to the NIH National Center for Advancing Translational Sciences (NCATS) where I worked for 4 years.

Now: My core interest is drug resistance, which I've applied to both cancer and infectious diseases. My biggest current interest is studying infectious diseases, the development of new therapies for existing and emerging pathogens, and studying drug combinations to combat resistance. I am looking forward to visiting Sloss Furnaces—both for the music, and also to probably take a welding or a blacksmithing class!

If I were an animal, I would be: a bear, definitely—most likely, a Kodiak Island bear.

Michael Patton

Occidental College, LA (BA Chemistry)

Then: My name is Michael Patton and I grew up outside of Seattle in a wine-town called Woodinville. I left the rain behind to complete a degree in chemistry at Occidental College in Los Angeles. After graduating in 2013, I spent the following year teaching English to primary and secondary school students in Chennai, India. Through an after school volunteer position at a local HIV clinic in Chennai, I became interested in the intersection between microbiology research and infectious disease treatment. After returning to the US, I took a post-baccalaureate position at the NIH where I continued to learn and research infectious disease for three years before joining UAB's MSTP.

Now: My research interests have been primarily focused on host-pathogen interactions. During my first summer rotation, I'm learning about oncolytic viral engineering for targeted cancer therapy. I'm new to the South and excited to join the UAB family. Everyone I have met in the program has been engaging, generous with their time, and supportive. For me, free time during the week is usually spent with an ultimate frisbee disc or at the rock wall. I'm always up for a climb or a hike. During football season it's all Blue and Green for my Seattle Seahawks. As for big trips—SCUBA diving.

If I were an animal, I would be: If I were an animal, depending on my habitat I would be either a



Northwest Wolf Eel (cold water)—they look ugly but I swear they'll love you like a puppy if you feed them a sea urchin—or a Cozumel Splendid Toadfish (warm water)—they just look goofy.

Taylor Person

Univ Illinois, Urbana (BS Animal Sciences)

Robert Rosencrans

USC (BS Neuroscience)



Then: I'm from New Orleans and have lived there all my life, with the exception of my undergraduate years in California. I studied comparative literature and psychology at the University of Southern

California. Afterwards I took post-baccalaureate courses at Tulane University and concurrently worked at the LSU Medical School.

Now: My research interests are in visual system evolution and degeneration. With respect to my new home, I am interested in identifying the best pizza in Birmingham.

If I were an animal, I would be: a mantis shrimp—they have sixteen classes of photoreceptors. I'd like to know what the world looks like to them.

Lamar Williams

UAB (BS Biomedical Sciences)

Then: I was born in St. Louis, MO, and raised in Huntsville, AL. I chose to go to UAB for undergrad because it was the best in-state option for pre-med studies. I ended up earning a dual degree in Biophysics and Biomedical Sciences with minors in Chemistry and Math. I have had research experiences in civil engineering, laser physics, transcriptomics, and molecular pathology.

Now: I am most interested in research involving cardiology particularly molecular sensing, imaging, and metabolism. This year, I am most excited about the Theatre League's Broadway in Birmingham Series, the return of UAB Football, and my return to the rec basketball court!

If I were an animal, I would be: a giant squid. I love that the animal is so large and mysterious. Especially because the animal is incredibly elusive to catch on photography or live video.

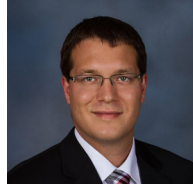


Oldies but Goodies

Lindsay Stoyka, GS-3

Travis Hull: Superman

General Surgery
Mass General Hospital
Boston, MA



Jarrold Meadows: the Flash

Child Neurology:
Neurodevelopmental Disabilities
Johns Hopkins University
Baltimore, MA



Stephanie Robert: Doctor Who

Neurosurgery
Yale University
New Haven, CT



Jenn Stanley: Professor X

Radiation Oncology
Washington University
St. Louis, MO



In addition to the 10 students being welcomed to the UAB MSTP this June, there are also 4 we will be sending off to bigger and better things for residency. Below are their responses to some sentimental and erm, non-sentimental, questions we had for them before they started their new journey.

“What was your favorite memory or best experience of your MSTP career?”

“Impossible to answer with one experience. My first retreat at the Columbiana 4H center came to mind, as it was the first time I got to meet everyone in the MSTP and realize what great group of people that we truly are a part of. The flag football game, libations in the pavilion, dominating the upper classmen playing chicken in the pool at night. And things only got better from there. Personally, my best memories were the day I got married and the days my three children were born. Professionally, my best memories were the day I realized I had joined the best PhD lab for me, and later, standing on the stage on Match Day with my family, realizing that we would be going to the program of my (our?) dreams. Perhaps the most impactful day of the last 8 years was standing in the OR in the middle of Whipple on the first day of my surgery clerkship and realizing that come hell or high water, I was going to be a surgeon-scientist.”

—Travis Hull

“Becoming part of the MSTP family. I entered the MSTP after completing my MS2 year, so a bit of a latecomer. Everyone was incredibly welcoming and made me feel like part of the group immediately. My time in the lab was also an amazing experience, especially with my fellow MSTP lab members and my amazing PI/mentor..”

—Stephanie Robert

“Match Day. Having my family there with me on stage and letting them open the envelope—all the anxiety leading to joyous relief.”

—Jenn Stanley

“Hard to say precisely, but as with most aspects of life, it’s the things at the beginning and at the end that I found most memorable. I cherish the memories I have of first moving to Birmingham and getting to know the other students in my MSTP class. And I also really enjoyed the process of applying to residency, the excitement and hope associated with

that process, and then absolutely loved finding out on Match Day that I matched with my #1.”

—Jarrold Meadows

“What are you most excited about as you begin residency?”

“It’s too close to my start date to be excited about anything... I’m just nervous — like, constant taste-of-barf-in-my-mouth nervous. But seriously, I have been chasing the dream of being a doctor for like 20 years now. On June 14, that dream becomes a reality. I am excited to have my own patients, where my decisions matter and where my effort can positively benefit a living, breathing person. I am excited about all of the new opportunities and I hope that they will measure up to all of the positive experiences that I have had at UAB.”

—Travis Hull

“Excited to start the next chapter of my career and work with an incredible group of surgeons and researchers at Yale!”

—Stephanie Robert

“I am looking to survive intern year; but, in the long run I am excited to finally spend time working with cancer patients and linear accelerators.”

—Jenn Stanley

“There are a number of things I find exciting about starting residency—certainly, not the least of which is now having a new city to explore and new friends and colleagues to meet. But, I would say I’m MOST excited about finally getting the opportunity and awesome responsibility of putting all that I learned at UAB into practice and taking care of patients.”

—Jarrold Meadows

“What drew you to your specialty/how did you know it was the right choice for you?”

“The culture of surgery, which is specifically what makes so many people dislike it. But the culture matches my personality. Long and hard hours are the norm, perfection is expected and nothing less is tolerated, and action takes precedence over pontification. I also think that the technical aspect of the speciality drew me to it immediately, as well as the

ability to offer the properly selected patients definitive treatment.”

—Travis Hull

“Neurosurgery is the perfect mix of research and hands-on medicine. After discovering my interest in Neuroscience, I knew I would end up in something Neuro-related. The first few days on my Neurosurgery elective I knew it was the best fit for me.”

—Stephanie Robert

“First, my research interest is in cancer biology, so I ended up trying to choose from Medical, Surgical, or Radiation Oncology (Medonc, Surgonc, or Radonc). Radonc checked all of the boxes for me. You typically are treating with curative intent, or providing significant palliation—I didn’t relish the idea of pushing poison. Also, I wanted to have the time and backing from my department to undertake significant research. Several places are extremely pro-research and offer the Holman pathway, which gives you up to 18 months of protected research time without prolonging your residency. Additionally, you do not have a fellowship following completion of residency, which is a selling point as an “advanced age” student. I also found rapid development of new tech and planning software exciting; there are countless opportunities to be involved in clinical trials for emerging modalities and better treatment planning through physics/dosimetry. I also enjoy that there are procedural aspects in the day-to-day practice—brachytherapy for prostate/gynecologic/breast, eye plaques in ocular melanoma, radioactive iodine for thyroid, and intra-operative radiation at some centers. Finally, on a personal note, I have two children and am expecting

my third, so having a schedule amenable to spending time with them, being able to make it to dinner and soccer games, and providing for them financially was paramount. Radonc provides me with the ability to do that with reasonable hours (even as a resident) and favorable reimbursements (as of now).”

—Jenn Stanley

“For me, finding the right field and institution was a very active process. I spent a lot of time searching online and a lot of time speaking one-on-one with mentors. I’m drawn to pediatrics because to me, the chance to intervene early and essentially give a child a FIRST chance at life is just one of the most profound opportunities in the world. Additionally, I am drawn to my field as I think it presents the perfect interaction of important problems and intellectually fascinating questions.”

—Jarrod Meadows

“If you could have any superpower, what would it be?”

“The ability to stop time.”

—Travis Hull

“Telekinesis.”

—Stephanie Robert

“To be able to conjure up clones as needed.”

—Jenn Stanley

“Unlimited endurance without the need for much sleep. There is so much work to be done and so many wonderful experiences to be had, and I just wish I had more time and energy to fit them all within this one brief life I have.”

—Jarrod Meadows

“Be humble. Your classmates will have pre-conceived notions about MD/PhD students. Prove them wrong and exceed their expectations with **actions**, not words. There is no need to tell people how long or hard you are working – if you are, they will know that without you telling them.” *-Travis Hull*

MSTP Families

Joe Ladowski, GS-3

Last year was the birth of the MSTP families, each with the namesake of a famous physician-scientist. Freshly-sorted family members, read on for a look at why your MSTP family will reign supreme.

Virginia Apgar Family (rep: Muhan Hu)



Why did you pick your family name? We were the second family to dine at Randy's house, and at that time, I think we wanted to pick John Snow (with game of thrones reference), but the first group beat us to it. After a lot of googling, we settled on Virginia Apgar, but I don't remember if there was a specific reason...maybe because she's a female...we do have very strong women in our family. :)

Why do you think your family is the best? We have a good balance of different personalities; everyone brings a little something of themselves to the table. No one overshadows the other and everyone gets to shine in our family.

If your family had a spirit lab instrument, what would it be and why? I would say the microwave—it's a staple of every lab, but more than that, of every home. We are reliable and depended upon our microwaves both in and out of the lab.

Charles Best Family (rep: Hayden Pac)



Why did you pick your family name? Apart from the obvious reason, we figured that Best exemplified many aspects of medical research. His hard work resulted in the development of insulin as a therapy, the mainstay of diabetes treatment. We thought this

was even more significant considering the staggering disease burden of diabetes in Alabama, and provides a wonderful example of what a physician scientist can do for people. Lastly, luck was involved for Best. To determine who would work on the insulin project, Charles Best and another student flipped a coin. Poor Clark Noble.

Why do you think your family is the best? The answer to this is self-evident. We are the Best Family. **If your family had a spirit lab instrument, what would it be and why?** In line with our choice for family name, the humble pipette comes to mind. In the same way that it is impossible to imagine diabetes management without insulin, it is impossible to imagine lab work without the pipette.

Louis Pasteur Family (rep: Brandon Pope)



Why did you pick your family name? Our family name is a symbol that represents the promise that we all have as trainees on the path to become physician scientists. I believe that Louis Pasteur and the contributions that he made to the early fields of immunology and microbiology stand as an example of the impact that we aspire to have over our careers in academic medicine.

Why do you think your family is the best? I think that our family is the best because of the broad array of perspectives and attributes that our group members possess. In many ways, a group is only as valuable as its individual parts. Our family group contains students that are in a number of different aspects of the MSTP program and that truly gives us an advantage to better assist one another.

If your family had a spirit lab instrument, what would it be and why? Our spirit lab instrument would probably be a Pasteur pipette (lol). It would symbolize the accomplishments of scientists that came before us, while at the same time demonstrating that the tools that we use are only useful when we begin to use them to further knowledge that will positively impact others.

MSTP Families

Joycelyn Elders Family (rep: anonymous)



Why did you pick your family name? Dr. Elders was an incredible human and the first African American (and female!) Surgeon General of the United States. She held so strongly to her views on sex education, reproductive health, and drug legalization—which in her time were super controversial and today are finally gaining acceptance—that she was forced to resign by her fuddy-duddy colleagues on Capitol Hill.

Why do you think your family is the best? We are the best because we respond to emails—always.

If your family had a spirit lab instrument, what would it be and why? Our spirit lab instrument would be the consistently utilized autoclave. Ain't nobody got time for germs.

Oliver Sacks Family (rep: Paige Souder)



Why did you pick your family name? We originally wanted to pick Andrew Wakefield because none of us believe in vaccines (jk, jk), but decided on Oliver Sacks because all of us are studying or at least interested in neuroscience and we definitely agree with him that the brain is “the most incredible thing in the universe.”

Why do you think your family is the best? Our family is the best because collectively, we are just weird enough to be cool. I’m pretty confident we could win Family Feud. And the MSTP Olympics (cough, cough).

If your family had a spirit lab instrument, what would it be and why? It would have to be a saxophone. It’s jazzy, it’s smooth, it’s simply – the

best. Oh...you mean science instrument, oops. Still saxophone—we’re very creative and resourceful. We’re also a fairly musical family; Jeff Singer can tear up a karaoke stage.

John Snow Family (rep: Jacelyn Peabody)



Why did you pick your family name? As the family formerly known as Family Alpha, John Snow was the only fitting name sake. We named ourselves after the King of the North because our family is comprised of leaders and Game of Thrones fans. Rumor has it that George R.R. Martin’s new book actually details John Snow’s public health endeavors and his discovery of the source of cholera on his way to conquer the Iron Throne, so we found the name suitable.

Why do you think your family is the best?

I don’t THINK our family is the best, I KNOW it.

If your family had a spirit lab instrument, what would it be and why? We would be micro-pipettes (fig. 1).



Tom Starzl Family (rep: Mark Pepin)



Why did you pick your family name? So technically, our name is the “ALL-STARZLS”... But, our first family meeting was the day after Dr. Starzl died; his career as a surgeon scientist specializing in liver transplantation has been foundational.

Why do you think your family is the best? Apart from our unparalleled name, what makes a family great? As a father of almost 3, a

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MS1 Reflection

Emily Hayward, MS-2

As my first year of medical school comes to an end, I am privileged to reflect upon what has been a life-changing year. Most of the time, I am reminded that I am still very new to this whole medical school thing. I don't exactly have my life together yet—for example, I tend to do embarrassing things like trip on a curb while attempting to wave at one of the deans (oops!). While I do have a propensity to both physically and metaphorically stumble a bit, I have also gained a few incredible lessons along the way. With some help from a certain star of “The Office,” Michael Scott, I would love to share what I have learned with our incoming students who are about to start a crazy, awesome journey:

Stay focused and organized!



I truly cannot over-emphasize the importance of organization in medical school. You will have so many demands on your time, and there is always something to study. Make sure you keep a detailed calendar somewhere. Set reminders if you are prone to forget meetings. Carve out time to study, time to socialize, and time to sleep. Students who make it to medical school have shown that they are intelligent and capable, but now management and routine can make an especially big difference. Being organized will allow you to find harmony within the chaos and use the extra energy to find ways to shine!

Carve out time daily to review material.

Each day, you'll tend to see about four hours of (very dense) new material. I've quickly learned that even though exams only happen every few weeks at UAB, it's very important to stay on top of the material. For me, this tends to involve

quickly going through the lecture recordings and PowerPoints again in the evening, then making condensed study guides of about one page in length. Later, I can primarily just study these charts. For others, the preferred strategy might involve setting up flashcards on Quizlet or Anki and flipping through them the next day on the walk to class. This daily review can take up as much or as little of your time as you choose, but every encounter with the material gives you an opportunity to learn it better and save yourself from some future exam-preparation doom.

Build your support network early



Most of the time, starting medical school means not only adjusting to the demands of an entirely new profession, but also moving to a new city where you don't know anything or anyone. This is an extraordinary amount of change! It is hard to stay afloat without having others to keep an eye out for you and to encourage you when times get tough.

Introduce yourself to any academic advisors who are assigned to you, and find friends with whom you can study productively and whom you trust. Celebrate together in the collective successes of your class. Have honest conversations about your fears and ask them to support you in ways that will work best for your personality/needs.

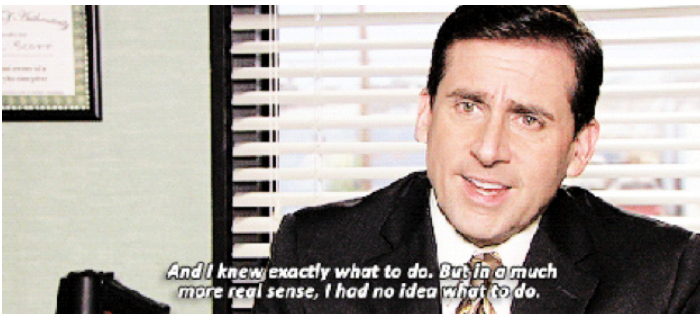
Forming a close network of allies is truly one of the most important things you can do to set yourself up for early success. And remember – it is just as important to find support as it is to be support! Check back in on your friends if they are ill or if you haven't seen them in a while. Make sure you know what they need when they're stressed, too. It makes a difference.

Communicate well.



Again, medical school truly is a team endeavor. People will count on you, and you want to keep in contact with them and let them know of any issues that arise sooner rather than later. In general, there is a 24-hour rule to emails; it is best if you can respond by the end of the next business day. If you are unable to do so, set an “away” message so that others know you will not be around. Even if you need time to think about an email, shoot the sender a little message to know that you have received their email and will reply back to them within X days. If you don’t tell people something like this, there’s no way they can know it!

Be confident, but don’t be afraid to admit when you have no clue.



This has been particularly pertinent for me when interacting with patients. During my first patient encounter, I was sure to begin by clearly explaining that I was not his physician and that his participation in my training would provide absolutely no benefit to him (seriously, the fact that patients are willing to help future physicians learn is an incredible gift).

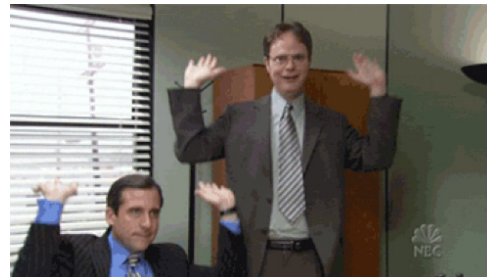
Yet as we spoke, he shared a humbling amount of detail about his medical condition. He then asked me a very minor, basic physiology question. I was 100% sure of the answer since it was a topic I had studied in great detail, yet there was still a small voice in my head that was afraid to fully embrace my new role as a student doctor. I missed the opportunity to provide the patient with some advice that may have helped him. Of course, there are many things I do not know, and it would be incredibly dangerous for me to answer anyway. Yet I find that I often hesitate when there is an opportunity for me to apply my knowledge. Medical school has been a huge period of growth for me thus far in terms of being able to clearly explain my role and share what I know with others!

Ask for help when you need it.



This skill can take a lifetime to learn, but I promise it will make you a better person, doctor, and friend. Reaching out for help means both acknowledging your own limits and seeking to improve your situation

– these are true signs of strength and intelligence! You’ll also realize that going through tough times with others can take so much weight off of your shoulders and make a lasting impact on the lives of everyone involved. It’s a win-win!



Avoid competition – stay positive and learn with your peers instead!

Remember why you chose to go to medical school. Getting wrapped up in grades can be tempting, but becoming a better doctor (NOT just a better student) must be your priority. You will learn more, work better as a team, and ultimately better serve your patients if you stop fixating on trying to get a perfect score. Instead, focus on doing your best and showing compassion to those around you at all times.

In my experience, medical school will humble you into the incredible understanding that learning happens far beyond the classroom. You will be in an amazing position to learn from your diverse and awesome peers (rather than compete with them) and from your patients, who are so willing to share their stories with you even when you are only in your first year. Work your hardest in class, but don’t be afraid to put the test aside and learn from the real life situations you will be privileged to witness.

Ultimately, I’ll be honest. Sometimes no matter what you do, medical school will inevitably make you feel a little bit like Toby trying to skate in peace. But I hope these tips help you make the most of each day and find reasons to keep on fighting!



Student Sketch: Kelsey Patterson, GS-4

Paige Souder, GS-2

Kelsey grew up in central Ohio near Columbus and started her college education at UC Berkeley in California. After her freshman year, she did summer research at UAB and found her niche with then Neurobiology Department Chair, David Sweatt. She soon after decided to transfer to UAB to work with Dr. Sweatt and earned a degree in Neurobiology. During her time in Birmingham, she met program director Dr. Robin Lorenz and a few of the older MSTP students and the rest is history. Read on for details on Kelsey's story and what's coming up next in her journey.



Paige: When did you decide to pursue the MD/PhD track?

Kelsey: I always thought I wanted to do research, but didn't really know medicine and science could be integrated. I became interested in the MD/PhD pathway after meeting Robin and a few of the older MSTP students here, then did shadowing and liked it. I thought research made medicine interesting, so I met with Robin and decided to apply here and to other MD/PhD programs.

Paige: What made you decide on UAB?

Kelsey: Really because of Robin—she is so awesome. Anyone who knows her knows she's the best. The MSTP here is like a family of students; it's a good atmosphere. This was the place I thought I'd be the happiest, and I'm glad I chose it.

Paige: That seems to be a common answer among our students! After finishing the first years of medical school, how did you decide on a thesis lab?

Kelsey: My PI [Michelle Olsen, PhD] helped run a course I took in undergrad, so I met her then. I had experience in undergrad working in a bigger lab environment, so I wanted to experience what it was like to work in a smaller lab with a newer PI—one who was really involved with the students. I chose Michelle for my first rotation and thought she was a really nice and really interesting person. After finishing my second rotation, I decided on Michelle's lab because of the size of the lab, her direct involvement with students, her personality—and the research was interesting. The quality of the mentor relationship is the most important.

Paige: 100%. You got thrown a curveball when she moved institutions last year, though, and decided to stay in Michelle's lab but complete your PhD work at UAB. How has that experience been for you?

Kelsey: It's definitely been challenging. We talk every single week and stay in direct contact—she goes out of her way to stay involved in my project. There are challenges even when you are in the same place as your PI, though. Practically speaking, I don't know how much of a difference it makes to not have her here, but it's harder mentally dealing with challenges of any research experience as they come along. You have that extra layer of feeling like you have to figure this out by yourself, that it's your responsibility. I was starting to work on a new project when she was leaving, so that also added to the challenge. I'm working through it, though, and I'm still on track to finish in 4 years. Your PI moving definitely isn't something you think will be an issue when you start out. Part of the reason I chose her in the first place was that she loved UAB and wanted to stay here, but that can change for anyone.

Paige: Has the MSTP been supportive of your decision to stay at UAB to finish your PhD?

Kelsey: Randy and Robin and everyone have been super, super supportive. Robin's first question was what direction I wanted to go with this. She said I had to make the decision about what I wanted. I own a house here and wanted to stay and continue my life here. When she left, I was just finishing my second year in the lab, and had submitted my F30 and was in the midst of analyzing a lot of data. I already had one first author publication, so I was considering the possibility of finishing in the next 12 months, but it looks now like I'll be here two years without her. Everyone has been working with me and has been on my team for whatever goals I want to accomplish. I've learned it's important having open lines of communication with the office and your PI so everyone stays on the same page—there's more

responsibility on you when your PI isn't here. One other lab member stayed here as well, so that's been really helpful too just having another person in the same space to talk through different things (science-related and non-science) with.

Paige: Very awesome. Switching gears a tad, can you give us an elevator pitch of your thesis project?

Kelsey: We have a novel rat model of Rett Syndrome, which is a developmental disorder that affects girls early in life. My first goal was to characterize the rat model to establish it as a useful model to study Rett Syndrome. I spent my first year doing that and got one publication. The project I'm working on now deals with the role of astrocytes in normal and abnormal development in the context of Rett. I'm doing electrophysiology in the brainstem of young animals and seeing how they respond to respiratory changes in carbon dioxide content in the brainstem. Asking what role this is playing in normal development and if it's changed in animals following abnormal development. The initial direction I was going to take this project was looking at glutamate uptake in the cortex, but I didn't see a difference there. But the brainstem is important—obviously—and astrocytes are understudied in that brain region.

Paige: Astrocytes are pretty rad cells. Does this type of research coincide with your clinical interests, or are you interested in another field?

Kelsey: I'm pretty sure I want to do OB/Gyn, but not completely sure yet and have definitely struggled with thinking through all of that from the beginning. I like to do things with my hands and I know I would like surgery, but it's a career path everyone tells you not to do as a physician scientist. OB/Gyn is appealing because it has both medical and surgical aspects. I think regardless, you have to be super passionate about the research you're doing as a physician, so passionate that you are interested in that content in your work-life and outside of your work-life. I've been consistently very passionate about women's health issues, so OB/Gyn seems most obvious.

Paige: Have you struggled at all with having a clinical interest that doesn't exactly align with your current PhD research?

Kelsey: Whether your PhD is directly applicable to your area of interest isn't important. Your PhD allows you to be a researcher, which is the main outcome of the PhD training. One of the advantages I will have going into an area I haven't studied is that I'm very confident in my ability to innovate, and even if I don't have every single tool I need to address a problem, I will be able to address it on my own.

More confidence—that's one positive of your boss leaving. The skills you gain during the PhD are what is really important. You learn how to think about problems and ask questions that will give you useful information.

Paige: Word. While we're on the topic of clinical interest, are you excited about the prospect of starting your rotations in the hospital soon?

Kelsey: People who are in third year right now will probably hate me for this, but honestly the number of hours I work now is way more than what I worked in medical school. I'm looking forward to having a schedule ahead of time where I know when I'm working and when I'll have a day I don't have to be working. The erratic nature of the PhD and not being able to mentally get away from thinking about it is hard. I also just love interacting with patients in the hospital. Every time we do an H/P [history and physical exam] for our clinical continuity course, I'm excited to get back to clinic.

Paige: Looking back over your progress in the program so far, what has been your favorite stage?

Kelsey: Things have gotten harder every single year from the beginning, but I would say now is my favorite time. I'm at my maximum growth in the curve and will just keep increasing from here. I feel the best about myself and I feel confident about where I'm going. Even though sometimes when I'm at home, I'm thinking 'ohhh I can't wait for this part to be over.' Sometimes you feel like it's going to kill you but everyone is ultimately super proud of their accomplishments. It's kind of a screwed up reward pathway because you have so much failure, and then have one little piece of data that refuels you to go through the next few months of inevitable trouble with your experiments. I thought I had a pretty good handle on failure because I did research on a project for several years in undergrad and the data didn't turn out in our favor—so there were a lot of failures. I think it did prepare me pretty well, but it's different when it's your project, your responsibility, your child. Your sweat and blood are put into it and it's on you to make it work or figure out that it won't.

Paige: Rolling on the theme of that my question, what are some lessons you've learned during the program, or advice for your younger colleagues?

Kelsey: The biggest lesson I've learned is that nothing is as big a deal as you think it is. Just take the time to sit back and relax every once in a while. Like, your life is going good. No failure is going to make or break you. A huge component of that is making sure to take time to do things that are important to you. I would advise

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My Greatest Teacher

Emily Hayward

On Saturday, April 8th, the Anatomical Donor Program at UAB held a memorial service to honor those who have selflessly donated their bodies to medical education. In life, these compassionate individuals made the decision to donate the most precious gift they had so that they could be the “first patient” of many future healthcare professionals. As a first year medical student, it has been a unique privilege to learn from our anatomical donors, to actually examine the heart and the lungs and the kidneys as we learn about them in class.

The service was beautiful. It was primarily run by students from various schools that have learned alongside our donors this year: medicine, dentistry, physician assistant, health professions, and more.

Students lit candles, wrote thank you cards, and stood up to read poems or passages. One of my fellow rising second year MSTP students, Andrew Schroeder, sang a breathtaking version of Hallelujah (so proud!!).

My favorite part of the service, aside from simply meeting those who loved our donors so dearly in life, was seeing the table at the front. It was draped in a white tablecloth, and we lit candles to represent each school that has been

touched by someone’s anatomical gift. Each family was able to bring a picture of their loved one and place it at the front of the table, where they all were illuminated by the candles. It was overwhelmingly humbling to see the faces of selfless, compassionate people whose legacy will live on forever through the hands and hearts of myself and my future colleagues.

I also had the incredible honor of writing a passage to our donors and reading it aloud to their families during the service. I would like to share it below. I decided to call it “I Hope You Know.”

To my greatest teacher:

I hope you know that I was scared, the first time I met you. I have never met anyone the way we did, and I know I will never have that treasured opportunity again. I was scared of the things I didn’t know, of being entrusted with such a great gift, and of making mistakes as I walked the long road towards my dream of becoming a doctor.

I hope you know that you represent every part of both who I am and who I hope to be. The science I have learned in these past few months, studying alongside you, is not anything that can be captured in books or in lectures. Yet beyond that, the essence of who you are has inspired me to be greater, to strive for more. To know that you chose to give me an indescribable gift – without ever knowing me, without ever seeing its impact – is mesmerizing.

I hope you know that I will carry your gift with me forever and that it will change who I am as a person. Because of you, I realize that the best gift is not one that proclaims its greatness, but one that gives everything it has to make someone else’s life even a little bit richer. Because of you, I will seek out opportunities to love more, to learn more, and to give greater, even in times when no one notices.

I hope you know that you have been with me, both in my best days and in my worst, and that you have seen me grow in ways that few others will understand. I hope you know, too, that it has been a precious gift to experience each of those days with you.

I hope you know that you have changed not one life, but many. Because of you, dozens of lives in the future will be saved, improved, restarted, or somehow altered. I can only hope that my life will someday matter as much as yours has and forever will.

And, perhaps above all, I hope you know how indescribably grateful I am that you existed and that our paths crossed. Thank you for letting me experience a small portion of your journey, for letting me hold it within my heart as a part of my own journey. Thank you, wholeheartedly, from a medical student to her greatest teacher.

Student Sketch

younger students to have a few things that are really important to them and take time for those things. If you have to sacrifice study time or do front- or back-end work on something in the lab, then do that. Do things with people that are important to you and exercise and do something fun every once in a while. Also try to invest in real estate if you’re able to.

Paige: So what are those things for you?

Kelsey: I like to go outside and go hiking. I’ve turned to running as a therapeutic stress relief, so I run around 5 miles a few times a week. My boyfriend and I also like to go to concerts in Birmingham... death metal concerts. (I don’t know if you’re allowed

to be a professional young person and enjoy death metal concerts, but I do.) And I own a condo in an older building, so I always have a project there I’m working on. I love to do home repairs. I have this plumbing project I just finished where I replaced part of the piping, resoldered it, and built a new vanity for my bathroom. I like to build tables, repaint things, other home improvement/beautification stuff. If you’re failing in lab, you just watch as many YouTube videos as you can about how to do something and it usually turns out pretty good. And it’s a good confidence boost learning how to do something.

MSTP Families (cont.)

few things come to my mind. First off, we don't hate each other. Yesterday, I spent 1.5 hours with Vince (our family 'dad') talking about some bioinformatics stuff. This summer, I worked with Nick (our 'mom') to team-mentor an undergrad student doing his summer research. On a more practical note, though, a great family needs a common vision; we are all from very different places/cultures/etc., but we are all pretty engaged in leadership/recruiting.

If your family had a spirit lab instrument, what would it be and why? I'll have to ask the team about this, but I think we'd be the lab Server, or maybe Siri. She knows everything.

Harold Varmus Family (rep: Patrick Molina)



Why did you pick your family name? Harold Varmus, MD, is a physician-scientist that has contributed greatly to the public through service and research. In 1989, Dr. Varmus was jointly awarded, along with J. Michael Bishop, the Nobel Prize for the discovery of the cellular origin of retroviral oncogenes. Dr. Varmus is an inspiring figure due to his past record as NIH director, during which the organization saw a doubling in research funds, and his continued efforts to engage in basic science research.

Why do you think your family is the best? Our family combines the absolute, unapologetic best of intellectual discovery, grit, weirdness, and friendliness. Actually, that may be a bit of an exaggeration—but we really are a nice mix of outgoing personalities and diligent individuals.

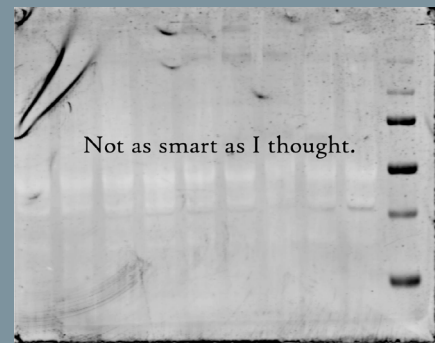
If your family had a spirit lab instrument, what would it be and why? If our family had a spirit lab instrument, it would have to be the ever-popular uncalibrated pipet. [<-menacing]

Awards

- ♦ **Kristin Olson:** UAB Dept of Medicine Annual Trainee Research Symposium, 2nd place (Graduate Student)
- ♦ **Ashleigh Burns-Irwin:** 2017-2018 Schweitzer Fellow
- ♦ **Evida Dennis:** Outstanding Graduate Student in Immunology, UAB Honors Convocation
- ♦ **Tim Kennell:** Technology Chair, National APSA Executive Council 2017
- ♦ **Birmingham:** #1, Zagat's list of America's Next Hot Food Cities



Lamario Williams
featured in
Birmingham Times



Will Webb wins
Honorable Mention for his
"Say it in 6" entry

Dissertations

Congratulations to our new doctors!

Anna Joy Rogers, DrPH

Josh Cohen, PhD Neuroscience

Sara Stone, PhD Immunology

Elizabeth Ma, PhD Nutrition Sciences

Shima Dowla will defend her thesis on June 29, 2017 at 1pm in Ryals SOPH, 507.

Evida Dennis will defend her thesis on July 13, 2017 at 10am in SHEL 105.

Alex Bray will defend his thesis on July 17, 2017.



Six Flags, ATL trip
#wearesocial

Coke geysers at the YMCA
#weareadults



“It's the things at the beginning and at the end that I found most memorable.” -Jarrod Meadows

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- ♦ **Webb WM.** USMLE Step 1 Score Creep Adversely Affects Dual-Degree Students. *Academic Med.* 2017 Jun;92(6):732-33. doi: 10.1097/ACM.0000000000001696.
- ♦ **Dussaq A,** Stackhouse C, Anderson J, Almeida J, Willey C. Creation of an Analytical Platform for Integrative Molecular Profiling of Glioblastoma Xenolines. *Am J Clin Pathol.* 2017 Mar 1;147(suppl_2):S171-S172. doi: 10.1093/ajcp/aqw191.042. PMID: 28339874.
- ♦ **Ramaker RC,** Lasseigne BN, **Hardigan AA,** Palacio L, Gunther DS, Myers RM, Cooper SJ. RNA sequencing-based cell proliferation analysis across 19 cancers identifies a subset of proliferation-informative cancers with a common survival signature. *Oncotarget.* 2017 Apr 8. doi: 10.18632/oncotarget.16961. [Epub ahead of print]. PMID: 28454104.
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- ♦ Fernandez TF, Kraus AC, **Olson KM.** A Call for Residents to Get More Involved With Student-Run Free Clinics. *Acad Med.* 2017 May;92(5):577. doi: 10.1097/ACM.0000000000001653. PMID: 28441200
- ♦ **Figge D,** Standaert DG. Dysregulation of BET proteins in levodopa-induced dyskinesia. *Neurobiol Dis.* 2017 Mar 9. pii: S0969-9961(17)30050-5. doi: 10.1016/j.nbd.2017.03.003. [Epub ahead of print] PMID: 28286180.
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- ♦ **Weaver AN, McCaw TR,** Fifolt M, Hites L, **Lorenz RG.** Impact of elective versus required medical school research experiences on career outcomes. *J Investig Med.* 2017 Jun;65(5):942-948. doi: 10.1136/jim-2016-000352. Epub 2017 Mar 7.
- ♦ **Souder JP,** Gorelick DA. Quantification of estradiol uptake in zebrafish embryos and larvae. *Toxicol Sci.* 2017 May 23. doi: 10.1093/toxsci/kfx107. [Epub ahead of print]



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