Welcome Letter from the Administrative Director

By Ashley Bertran

I would like to say hello to all of the Alumni of the program who I have met over the years, and to those that I haven’t. I have been at The Ohio State University and working with the Medical Scientist Training Program since late 2002. I began my time with the MSTP under the leadership of the late Dr. Allan Yates. I received my BS from Miami University in Computer Science and Statistics and my Master’s degree in Human Resources from The Ohio State University Fisher College of Business. In 2014, I was promoted to MSTP Administrative Program Director. In my current role, I manage all aspects of the MSTP, including recruitment, student advising, curricular management, grant preparation, and program activities. With the help of MSTP Program Associate, Megan Sprague, I also oversee the SUCCESS program, which is our summer undergraduate research experience. In addition, I serve on a number of University and College committees, many of which are aimed at increasing student wellness and success. The busiest time of year from me is the autumn, as I am typically traveling for recruitment conferences or preparing for upcoming applicant interview sessions. One of the aspects of my job that I enjoy most is getting to know each of the students and to follow their journey through the program. I’m always very proud when our students graduate from the program and take the next steps in their training career. Many of the Alumni would be thrilled at how much our MSTP has grown and flourished – record numbers of applicants, an encouraging and dedicated leadership team, innovative curricular programming, and a wonderful MSTP student body. As the MSTP at OSU continues to grow, my interest in strengthening ties with program alumni has also grown. I am currently involved in organizing an effort to increase alumni/student interaction and hope to create a robust alumni network that encourages connection and mentoring.
2015 MSTP WINTER RETREAT

By Alex Hartlage, Y1

The 2nd annual Ohio State MSTP Winter Retreat was held on Saturday, February 28th with Sankalp Malhotra serving as master of ceremonies. The day started with a potluck style lunch providing an opportunity for students to come together and socialize. In addition, the potluck lunch allowed students to display their culinary skills through a cooking competition. Based on popular vote Gracia Ng was the winner of the cooking competition and received a Fitbit for her delicious chocolate chip cookie dough brownies. Lunch was followed by a talk given by keynote speaker, Brian Becknell MD, PhD. Dr. Becknell, an alumnus of the program, talked broadly on his experiences during various stages of his training, from being a student to becoming a junior faculty member. Throughout the day there were also several talks given by students covering topics such as patient case presentations, cancer biology, and neuroscience. Brian Hansen was awarded an Amazon Kindle for his talk entitled “Microanatomic Intramural Reentry as a Localized Driver of Atrial Fibrillation in Explanted Human Hearts.”

The day ended on a high note with the 2nd OSU MSTP talent show. Acts included musical performances, impersonations of fantasy characters, and Old English recitations. Simon Cowell (Dr. Schlesinger), Randy Jackson (Dr. Kirschner), Paula Abdul (Ashley Bertran), and Christina Aguilera (Megan Sprague) judged the performances. Russell Ault, Gracia Ng, and Lisa Heisterberg were the winners of the talent show for their performance titled “The Fellowship” that included a highly accurate rendition of Gollum from The Lord of the Rings. Their outstanding performances earned them a Bruegger’s Bottomless Mug Club membership. To round out the awards and recognitions, Zach Hing won best MSSO attendance and took home a Chromecast.
Jillian Liu: Where are you from? Where did you go to school?  
Carl Allen, MD, PhD: I grew up in Tucson, AZ, then went to Duke for undergraduate. I didn’t really know what I wanted to do with my life at that point but ultimately studied Biology and Economics. I worked in a lab with David Cooper trying to understand the pathogenesis of Chediak-Higashi Syndrome. Though my first job was pretty monotonous, I got to work with Lai-Chu at the same time working on genomic aspects of ZAS3, and it was great to have a scientific colleague and social collaborator in lab. I am still collaborating with Lai-Chu on extensions of my grad school projects.

JL: Why did you choose to do a research-residency? Can you tell us about the training?  
DrA: My residency choice was relatively easy since my wife matched at OSU in OB/Gyn the year before I went through the match. The Research Track was a new option recently approved by the ABP, and the Residency Program at Columbus Children’s/Nationwide developed a curriculum where I could spend 1 of the 3 years doing research. Columbus Children’s also offered fantastic clinical training. My intern year was the same as everyone else. During 2nd and 3rd year, I alternated 3 months in lab, 3 months in clinic. I worked with John Barnard studying signal transduction in solid tumors, which was an opportunity to move in a new direction. I think this integrated research approach helps to remember how to hold a pipette during the 5-8 year break between defending a thesis and getting back into lab during fellowship. More importantly, it keeps part of your brain thinking about science. During residency, you begin to develop more focus on specific populations and clinical problems that lead to translational ideas you can at least begin to discuss during lab meetings. While it is critical not to short change clinical training, I think a well-designed residency research program is a great opportunity.

JL: Which factors made you choose OSU and the lab you trained in?  
DrA: I came to OSU because it is the best medical school in the country. Also, my family moved to Columbus when I was in college so it was my state school. I initially was in the standard medical track, but Sue O’Dorisio gave a few of us late-bloomers a chance to transition into the MD/PhD program during 1st year.

I decided to work with Lai-Chu Wu, who had recently been recruited from Cambridge where she was working on regulation of V(D)J recombination. I thought this was an interesting problem with clinical importance in lymphoma and normal immune function. She had cloned a gene (ZAS3) with interesting features of DNA and protein binding that suggested it could be important in lymphocyte development. I worked on characterizing function of this gene with biochemical, in vitro and animal model approaches. It was a great way to learn a broad spectrum of techniques and scientific approaches. Mark Hicar (MD/PhD ’02) was in the lab with me at the same time working on genomics aspects of ZAS3, and it was great by potential MD/PhD applicants. Was it worth it? On paper, no. It’s probably at least a $1 million loss in personal opportunity costs compared to traditional medical career. So, I would not do it if the goal is to get a leg up in the match for Neurosurgery or ENT. However, if you think you might be interested in a career in translational research, I do think it is very helpful. If you stay in academic medicine, the experience will give unique and valuable viewpoint.

My bias is that it is optimal to have a focused clinical expertise with a matched narrow scientific interest. For example, I only have clinic ½ a day a week, but I see ~4 patients with histiocytosis and ~2 with lymphoma or lymphoproliferative disease every week. At this point, I have seen hundreds of LCH patients. So, even though I am a “25 percent”, I can still develop clinical expertise in some areas. I also then get an opportunity to enroll my patients on studies, make observations to bring to lab, then bring new therapies back to our patients. I would not be able to do what I do now without the foundation of experiences in the MD/PhD program at OSU.

JL: Can you speak on the concept of team-based science?  
DrA: I think there is a transition in academic medicine away from the model of a single PI slogging away at a problem in isolation toward team-based approaches. Hypothesis-driven mechanistic questions are still the core of research, but there is also room for discovery science and increased emphasis on ability to translate research to improve patient outcomes. To get your discoveries to patients, you not only need bench scientists, but...
also clinicians, data managers, research nurses, and a network of collaborators.

**JL:** Can you touch on the importance of business knowledge when running a lab?

**DrA:** I think most graduate programs today do integrate some aspects of business and leadership in curriculum, but there wasn’t much discussion of writing a budget, managing conflict, or program development strategies when I was in grad school. I'm not sure we all need MBAs, but there are complex processes involved in growing from a lab of 1 person to a team of 15 that are not intuitive. I think it also helps to try to understand the organizational dynamics of the institution you work in so you can take advantage of resources and understand potential constraints. I advise my students/fellows to start writing grants as soon as possible. It’s nice to get the funding, and the process is a good exercise that forces you to explain your project and to develop a plan to achieve your goals.

**JL:** What is your advice for maintaining work/life balance?

**DrA:** I don’t do a very good job of this, but in theory endorse the concept. My family is very supportive of my career with significant time away at work and travel. For example, I think it is helpful to have appropriate expectations – I advise new fellows that 1st year (a very intense period of clinical training) is not the time to think about starting to train for your first ironman. However, one of the nice aspects of academic medicine and science is that during most stages of training and career there is generally some flexibility in schedule to carve out time for yourself and your family. If work is fun, it doesn’t seem like such a struggle to separate “work” from “life”.

**JL:** Do you have advice for the students in our program?

**DrA:** Have fun. Work hard. Pay attention to your patients. Write lots of grants. Don’t worry, everything will work out. Go Bucks (and please apply for the Baylor Pediatrician-Scientist Training and Development Program for residency).

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The 14th annual OSUWMC Trainee Research Day took place on April 15 and 16, 2015, and featured hundreds of research presentations spanning the trainee spectrum from undergraduate, medical, graduate and MSTP students to post-doctoral, resident and clinical fellow researchers. This year, 24 MSTP students presented posters at the event. First-year, Brian Hansen, and sixth-year, Dylan Nielson, won travel awards for their top scoring poster presentations. Fifth-year MSTP student, Amanda Harper, was selected by the student organizing committee to represent the MSTP at the Allan Yates Memorial Trainee Speaker Series, which was moderated by Dr. Larry Schlesinger. She gave a presentation of her research entitled “Co-stimulation of the Fc receptor and interleukin-12 receptor on human natural killer cells leads to increased expression of CD25.” Many of our MSTP students were involved in organizing Research Day this year, including Kelly Regan (Chair), Alecia Blaszczak and Michael Koenig (Vice Chairs) and Organizing Committee members: Seemaab Ali, Jae Chung, Youjin Cho, Kavin Fatehchand, Alexander Hare, Ellen Lubbers, Sankalp Malhotra, Gracia Ng, Steven Scoville, Jason Sui, Andrew Stiff and Kristina Witcher.

This year featured a two-day schedule, as well as two keynote presentations, in order to accommodate a growing number of participating trainees, which has now doubled since its inception. Sanjay Rajagopalan, MD, Professor of Medicine and Physiology, Melvin Sharoky Endowed Professor in Cardiovascular Medicine and Division Head of Cardiovascular Medicine at the University of Maryland School of Medicine and Co-Director of the University of Maryland Heart Center, presented “The Environment and Non-Communicable Diseases: The New Frontier for Sustainable Global Health” on April 15th. J. Keith Joung, MD, PhD, Professor of Pathology at Harvard Medical School, Associate Chief of Pathology for Research and Director of the Molecular Pathology Unit at Massachusetts General Hospital, Associate Member of the Broad Institute and Affiliated Faculty Member of the Harvard Stem Cell Institute, presented “Targeted Genome and Epigenome Editing to Study Biology and Treat Disease.” Students of the organizing committee had the opportunity to have dinner with Dr. Joung, and discussed career opportunities in pathology for MD/PhD students. Other highlights included the State of the Art Research Update Lecture Series faculty talks given by Steven Kolb, MD, PhD and Christopher Waiker, PhD. Dr. Peter Mohler moderated a biomedical research advocacy panel discussion featuring Ohio legislators Jim Hughes (State Senator), Bob Hackett (State Representative), Joe Gilligan (U.S. Senator Sherrod Brown Regional Director) and Grant Shaffer (U.S. Representative Steven Stivers District Director). Finally, Gary Smith, DrPH, MD was awarded the Research Mentor of the Year Award based on nominations submitted by students.
The best word to summarize what the MSTP Program offered me at OSU is opportunity. I came to the OSU MSTP Program in 2006 after graduating from the University of Toledo. From the very first month on campus I was able to simultaneously study medicine and work with world-class researchers including my advisor, Dr. Michael Caligiuri. Throughout my PhD training I was given the chance to collaborate with laboratories on and off campus, present findings at multiple international meetings, mentor outstanding undergraduate students and also engage our community partners through the Pelotonia ride for cancer research. My medical training allowed me to participate twice in Honduras with the student-led PODEMOS medical brigade. Through support of the College of Medicine’s global health office I also spent over two months of my final year of medical school working at the INCAN cancer hospital in Guatemala City, Guatemala. The wide scope of the university also afforded me the chance to work across disciplines with students from public health, pharmacy, dentistry and the law school towards projects focused on access to medicines. While it may seem obvious for a program that spans 7-9 years, the challenge and experiences of the MSTP offer students a fantastic period of personal growth and development. I am thrilled to be starting an internal medicine residency at Boston University with a career focused on global health and the ever-increasing incidence of cancer in low- and middle-income countries. Finally, throughout my journey I have had the consistent support of both the program administration and my fellow MSTP students for which I am forever grateful.  - Edward Briercheck, MD, PhD

As I reflect back on the past several years, I remember many times people looking at me with disbelief, confusion, or disgust saying, “Why an MD and PhD?”, “Eight years… and then residency… why?”, and the ever popular “You are crazy”. While I long ago embraced the idea of being slightly crazy, the questions of “why” have stung as I found myself routinely reciting my interview-like answers of “translating basic bench research to help more people clinically”. However, as I made my way through the OSU MSTP, I have begun to rediscover my own answers to these questions.

I first stumbled upon combined MD/PhD programs while fulfilling premed prerequisites working in cancer therapeutics research. I could see the enormous gap between basic research and actually improving the ability to diagnose and treat disease. Once I heard about dual degree training as a pathway to becoming a “bridge” between the non-clinical and clinical research worlds, I was sold. I was thrilled to be accepted by the former Dr. Allan Yates into The Ohio State University MD/PhD program, and was naively off on my way to cure cancer on Monday, diabetes on Tuesday, and then start working on the other less common diseases for the rest of the week.

After this enthusiastic start, I began to discover the challenges of this pathway which we have all embarked. I failed several tests during Med2. Ouch. (Note: Buying a house that needs serious work at the end of Med2 before Step 1 = bad idea). I joined Dr. Muthu Periasamy’s lab to study cardiac muscle in mice with Type 2 diabetes. The only problem was that it turns out that diabetic mice don’t really have a diabetic cardiac phenotype. Then there was grant writing… who knew before starting that you spend a lot of your time writing grants about research instead of actually doing ground-breaking research. With my wife Megan, I was blessed to have two kids, Addie and Tyler during these years… so much fun and so much work. Then there was the 6 months of trying to get one antibody to work for western blots. In other words, my idealism was slashed and battered as the realities of life and research set in. However, as the days of work added up, I did discover that when you are persistent and passionate, that you eventually reach your goals. We ended up publishing about skeletal muscle biochemistry and physiology and I was able to complete my PhD.

My return to clinical medicine was even more difficult as I found that nobody really cared what I knew about ubiquitin ligases, but instead cared about clinical topics that my brain had long before forgotten. Which statin is most potent? Shoot, rosuvastatin wasn’t even in clinical use when I learned about statins. My presentation skills were perfectly refined during my PhD so why is my attending yawning, fidgeting, and trying to not roll their eyes 5 minutes into my patient presentation? After persistently trying, I learned to adapt to the new expectations and style of clinical medicine, and have found it fascinating, frustrating, and rewarding. After exploring different areas, I decided to pursue a career in Physical Medicine and Rehabilitation (I matched at UT-Southwestern).

Over the last several months, I have been able to mentally step back and begin to reprocess “Why an MD and a PhD?” Even as I think of my patients I saw today, I can clearly see the limitations of diagnostic studies, the inadequacy of many treatments, the many grey areas of clinical medicine, and the unquenched suffering of patients. Then I think of the tools from my PhD, my trained ability to criticize the status quo, and experience in developing and pursuing testable alternate approaches and hypotheses. Dual MD/PhD training is crazy, difficult, long, and frustrating. However, I have realized that it is a privilege it is to have this training, to be uniquely situated to have contribute and provide insight to research from a clinical and research perspective with the ultimate goal of helping people. So, to my fellow physician-scientist trainees – thanks for all your friendship and support... and never give up just because something is hard. - Joseph Ostler, MD, PhD
Thinking Back

MS1 has been a whirlwind. I think back and I can only remember a frenzy of lectures, modules, labs, and small events. Every day there was something new and interesting for me to learn in medicine - which meant there was more that I had to remember, and more that I would probably forget. Every time I triumphantly took down an exam, there would be another exam hiding a few weeks ahead in my VITALS calendar.

The first week of April marks the beginning of Cardiology/Pulmonology, which is our last block of the Med 1 twister before the start of the summer. Soon, I know I’ll be back in the lab and at least a little bit removed from the intensity of constant studying and the exams lined up one after the other. Sometimes I get so entrenched in the work that it’s hard to take a step back to see just how far I’ve come. With the last block of the year starting and lab rotations just around the corner, now is probably a good time to look back and reflect on what was so challenging.

There is a lot that I wish I had known before starting medical school. As an applicant I learned about how classes and exams work, and I had a bit of a sense for the time I would need to spend studying every day. However, I was not prepared for the anxiety. There is anxiety after reviewing for a test and the exams lined up one after the other. Sometimes I get so entrenched in the work that it’s hard to keep track! Knowing which resources to take advantage of and which to put aside is key for time management, but it takes a long time to figure out which resources work best for you.

So a database of these resources is cultivated over the course of two years in preparation for Step 1, and then it is quickly made irrelevant for you and made obsolete for any rising medical student within a year or two. That said, the earlier someone starts preparing for Step 1, the better. I probably do not need to begin direct preparation any sooner than I am, but I am slowly becoming familiar with the relevant resources in anticipation of Step 1 early next year. It is a long process, and another item that I manage with schedules.

In the end it has been a difficult but rewarding year. I expected it to be hard, I expected it to be eye-opening, and it was both of those and more. I am looking forward to a summer in the lab, and I am actually excited for MS2 in the coming fall. I do expect MS2 will be just as much a whirlwind as this year has been – but like with any real tornado, it pays to be prepared.

Moving Forward

By Seemaab Ali, Y1

Undergraduate Institution: Yale University

This stress certainly isn’t stifling; we all find our ways to keep moving forward. I have settled into Columbus nicely and am living comfortably, which is a great help. With a group of friends I can find small outlets: after a difficult exam, the first years in the MSTP regularly celebrate the end of the block in the form of a brunch. Perhaps most importantly, though, I started making schedules and task lists to stay on top of all of the work we have. These schedules let me prepare for work in advance and help reduce my anxiety.

I also wish I had known from the beginning of the year which books are really necessary. To anyone else this may sound like a simple enough request. As it turns out, a lot of our textbooks are mostly supplemental reading, but our classmates consider a select few essential. The school gives us dozens of resources, and we are recommended dozens and dozens more by faculty and other students. There is also an internet’s worth of medical student advice out in online forums and blogs and subreddits – it’s hard to keep track! Knowing which resources work best for you.

Student Awards and Achievements

- Bin Ni won 3rd place for her poster at the CMIB Research Symposium in October 2014
- Sankalp Malhotra tied for first place in the graduate student poster competition at the CMIB Research Symposium in October 2014
- Amanda Harper presented a poster at the Society for Immunotherapy of Cancer Annual Meeting in November 2014
- Sankalp Malhotra was selected to present a poster at the 2014 AMA Research Symposium in November 2014
- Alex Hartlage presented at the American Society of Hematology Annual Meeting in December 2014
- Kelly Regan presented a poster at the AMIA 2015 Joint Summits on Translational Science in March 2015
- Steven Scoville and Thomas Hirschauer presented a poster at the ASCI/AAP meeting in April 2015
- Kelly Regan was inducted to the Sigma Xi Scientific Research Society in April 2015
- Bin Ni received an AAI Trainee Abstract Award and was selected for oral presentation at the American Association of Immunologists Annual Meeting in May 2015
- Brian Hansen was selected to present a poster at the Cardiac Electrophysiology Society annual meeting in November 2015
- Michael Sharponack received the CTRIP fellowship from the National Library of Medicine
- Congratulations to the 2015 MSTP Leadership and Academic Achievement Award winners: Russell Ault, Alex Hartlage, Ansel Nalin, Gracia Ng, Nima Milani-Nejad, Bin Ni, Obada Shamaa, and Edward Briercheck
- Congratulations to University Fellowship Award winners: Eileen Hu, Michael Koenig, Ellen Lubbers, Nat Murphy, and Nicole Zales
- Congratulations to Kyle Beckwith, Zach Hing, and Steven Scoville for receiving prestigious F30 Fellowship awards

Congratulations, students!
Dinner for Twelve Buckeyes – MSTP Dinner
By Jillian Liu, Y3

On January 26, 2015, the Ohio State University Alumni Association hosted the “Dinner for 12 Buckeyes,” which aims to connect recent OSU alumni with students in their academic field. The OSU MSTP took part in this event for the first time, and in attendance were alumni, Dr. Sameek Roychowdhury, Dr. Aharon Freud, Dr. Huizi Chen, Dr. Ryan Roberts, and Dr. Chadwick Wright, as well as current MSTP students, Jillian Liu, Russell Ault, Aaron Victor, Steven Scoville, Kate Hartmann, and Amanda Harper. This was a pleasant and informative evening, which gave alumni a unique opportunity to share their experiences and career advice with students.

If you are an alumnus who is interested in participating in future Dinner with 12 Buckeye events, please contact the MSTP (mdphd@osumc.edu).

Student Publications


Alumni Update

Ene Fairchild, MSTP class of 2012, will be starting her Neonatal/Perinatal Medicine Fellowship at Cincinnati Children’s Hospital in July 2015. Congratulations Dr. Fairchild!

Send us your updates!
mdphd@osumc.edu