



**THE OHIO STATE
UNIVERSITY**

WEXNER MEDICAL CENTER

Medical Scientist Training Program

April 2019

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A Welcome and an Introduction

*by Don Ntontolo
Program Coordinator*

First, I would like to say thank you to everyone for a wonderful welcome to The Ohio State University. You all have made this an amazing experience and I am thrilled to have the opportunity to work alongside of such good people. My experience here has been beyond what I expected. Prior to my arrival in Columbus, I lived in Dayton, Ohio where I attended Wright State University and graduated with a BS in Public Health. Shortly after graduation, I worked as a health and wellness coordinator at Action for Children, in downtown Columbus. After a few years of being at AFC, I took on a case manager position, this time, in the New Beginning for New Fathers program.

Both experiences were spectacular and helped in guiding me towards where I am today. I was able acquire the skills, knowledge and the experience used each day in my current role. Along the way I also discovered a passion for healthcare; and therefore, I wanted to work alongside of people who were striving towards pursuing their goals of a career in the medical field. Currently, I am pursuing a Master's degree in Healthcare Administration. Aside from joining the Wexner Medical Center, going back to school has been one the best decisions I have made thus far.

Apart from work and school, I enjoy playing and watching sports, reading books, writing, and anything that involves an artistic perspective. Although I grew up playing soccer, basketball is by far my favorite sport. When I'm not playing sports, I love art shows, theater, traveling, sightseeing, reading, and just experiencing something different.

Again, thank you to those of you who have taken the time to stop by and introduce yourself to me, and to those who I have not met. My door is always open and I cannot wait to meet each one of you. I'm honored to be a member of such a great institution.

- Don Ntontolo

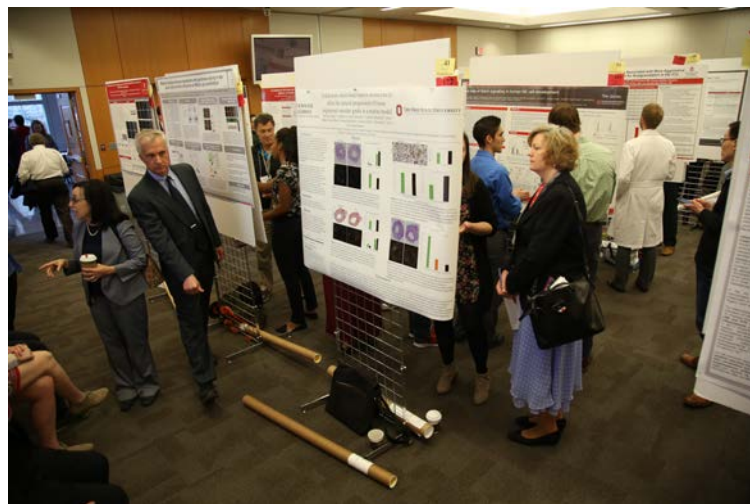
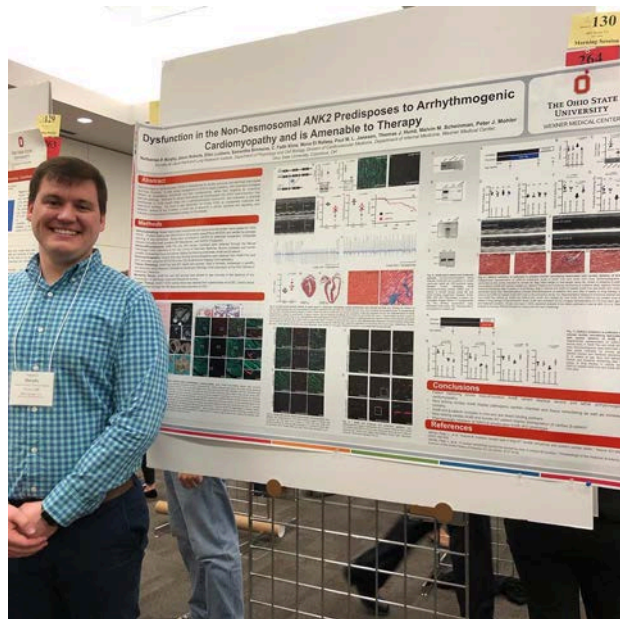


THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER

OSUWMC Trainee Research Day

By Aaren Kettelhut and Kevin Blum



The 18th Ohio State University Wexner Medical Center Trainee Research Day was held on April 11th, 2019 with a successful turnout of 274 trainee posters and 147 judges spread out between morning and afternoon poster sessions. These presentations represented individuals with diverse training and backgrounds including students in undergrad, graduate and medical school, the MD/PhD program, and the Discovery PREP program along with residents, clinical fellows, and post-doctoral trainees. The MD/PhD program had a very strong showing of 35 students presenting posters. Several MD/PhD students were also involved in planning and running the Research Day event including: Kevin Blum, Aaren Kettelhut, Matthew Lordo, Jerry Cui, and Lauren Otto. Accompanying the poster presentations was a keynote speech from Dr. Paul Tang, Vice President, Chief Health Transformation Officer from IBM Watson Health on “Harnessing AI at the Point-of-Care”. This speech was followed by the Allan Yates Memorial Trainee Speaker Series which involved five 10-minute talks selected from submitted abstracts from different trainee groups. Alex Hartlage was selected from the MD/PhD trainee group and presented his work “T Cell Vaccination Elicits Protective Immunity in a Surrogate Rat Model of Hepatitis C Virus Infection”. Both Drs. Lang Li and Deena Chisolm were selected for the afternoon State of the Art Research Update Lecture series. Dr. Li, the Chair of Biomedical Informatics at OSU, spoke on “Learning Health System: Working Toward to A Home Run for Drug Interaction and Pharmacogenetics”. Dr. Chisolm, Director of both the Center for Innovation in Pediatric Practice and Population Health and Equity Research at Nationwide Children’s Hospital, presented “From Translational Research to Transformational Research: Frontiers in Population Health”. Trainee research day ended with the traditional award ceremony honoring students from each trainee group with a travel award of one thousand dollars to attend a conference of their choosing and present their research. In total, ten individuals were chosen including Nathaniel Murphy from the MD/PhD trainee group for his poster presentation on “Dysfunction in the Non-Desmosomal ANK2 Predisposes to Arrhythmogenic Cardiomyopathy and is Amenable to Therapy”. Dr Mireia Guerau-de-Arellano, PhD from the Department of Neuroscience received the Mentor of the Year Award. Overall, this successful event was filled with research-oriented minds coming together from various areas of training to disseminate important findings, practice scientific communication skills, and receive feedback to improve future research endeavors in the biomedical field. Research Day also overlapped with the MSTP Second Look Weekend which allowed potential new students the opportunity to interact with current students and see the breadth of research that occurs on campus.



THE INTERVIEW



Aaron Paul Kithcart MD, PhD
 Clinical Fellow
 Vascular Medicine and Cardiology
 Brigham and Women's Hospital
 Graduate of OSU MD/PhD Class of 2011

Matt Lordo: Can you tell me about yourself (i.e. where you grew up, college, etc.) and what brought you to OSU?

Aaron Paul Kithcart MD, PhD: I grew up in the small town of Chelsea, Iowa: Population 300. My family were farmers, and after attending the University of Iowa I was the first in my extended family to finish college. It was at Iowa where I met Dr. Larry Schlesinger, now former director of the MSTP program at Ohio State. He was my undergrad advisor, and as I was beginning the application process for medical schools, he recommended I consider MD/PhD programs given my interest in biomedical research. He pointed me in the direction of Ohio State's program, at the time led by Dr. Allan Yates. I instantly fell in love with the program, and the rest, as they say, is history.

ML: What are you doing now, career-wise?

Dr. K: I'm currently completing my subspecialty fellowship in vascular medicine at Brigham and Women's Hospital. This is following my specialty training in cardiology, also here at Brigham and Women's Hospital, and my internal medicine training at the University of Washington in Seattle. I'm continuing my research in the roles of inflammation in vascular disease, currently studying the proinflammatory effects of hyperlipidemia on vascular development. My project is funded by a competitive grant through Harvard Medical School, and I'm currently pursuing additional funding to get my own lab.

ML: What factors helped you choose your medical and research specialty?

Dr. K: Like many people, I had a lot of help along the way. The mentors that you meet will have a dramatic effect on the career path you choose. For me, having an actively engaged research mentor at Ohio State, Dr. Caroline Whitacre, helped cement my interest in immunology. As a third-year medical student, I saw the growing importance of inflammation in cardiovascular disease, which of course is now accepted as fact. More importantly, though, I enjoyed clinical cardiology. During my sub-I, I worked with Dr. Quinn Capers. I was proud that our patients would walk out of the hospital after receiving their stent or diuresing off a few pounds better than when we met them. Throughout my training, I tried to keep my eyes open to other opportunities but at the end of the day I knew I would be a cardiologist. In hindsight, I'm glad I was able to combine my research and clinical interests as this supports the bench-to-bedside mission.

ML: Can you describe your typical work-week?

Dr. K: As a subspecialty fellow, most of my time is spent in the lab. My research is primarily bench work using zebrafish as a whole vertebrate system for studying vascular development. I have a technician who handles most of the animal husbandry, but during a typical week I'll find myself in the aquatics facility two or three afternoons and at the bench the rest of the time. I also have a vascular medicine clinic Wednesday mornings. For ten weeks of the year, I'll be on the inpatient vascular medicine consult

service. That week is probably typical of what you would find on a clinical rotation: Rounding on old patients in the morning and seeing new consults in the afternoon. I occasionally take call over the weekend but make a point to take at least one day off a week.

ML: Do you have any advice for MSTP students who are just starting?

Dr. K: Think big! Your training will open up amazing opportunities. Find what excites you the most, not just what is popular right now or what you might be most familiar with based on your past experiences. You're truly undifferentiated at this point so find something that will get you out of bed every morning.

ML: How about advice for our graduating students who are joining the real world?

Dr. K: Remember that each step in your career is an important differentiation. With your MD and PhD, you're a highly sought-after physician scientist and you should use this to your advantage. You'll be the basic science expert on clinical rounds and the grounded scientist in the lab. I know not everyone will continue in biomedical research but try to continue the elements of your training throughout your career even outside the lab.

Continued on next page...



The Interview (Continued)

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

Dr. K: As you will learn in your career, clinical medicine drives profits for hospitals and academic medical centers. Unfortunately, research costs those same institutions money and for that reason anything that takes you away from clinical medicine will decrease your own profitability. You can fill this gap with grants and research awards, the most famous of course are the NIH K and R awards. Apply for funding early and often as that will be the easiest way to continue your research.

ML: What are some of the biggest challenges you have faced during your training and career?

Dr. K: Research can be challenging, sometimes on a daily basis. Experiments don't work, papers get rejected, grants don't get funded. I've had many setbacks along those lines but at each stage I took a step back to make sure this was still my passion. You'll have clinical challenges as well, long hours with tough patients. Don't be afraid to re-evaluate your priorities and make sure you're still pursuing what makes you happy.

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

Dr. K: Anyone who knows me well knows I really like to travel. I'm famous for leaving the lab Friday afternoon and spending the weekend in Europe. This isn't possible for everyone, especially those with children, but my point is to find what makes you happy and make it a priority in your life. It's important to take a break sometimes, and as we're learning unhappy doctors actually make really bad doctors. They provide worse quality of care for their patients and are at a higher risk for harming themselves. Schedule time at least once a week to do something you enjoy, even if it's just reading a non-medical book at Cup O'Joe (my favorite while I was in Columbus!).

ML: What is your favorite part of being a physician-scientist?

Dr. K: I love having a connection to basic science and clinical medicine. I think our training uniquely positions us to be exceptional physicians, truly understanding clinical problems in ways most doctors miss. Your extra training also gives you a great set of problem-solving skills that are often missed on clinical rounds.

ML: Looking back at your experiences, would you change or do anything differently?

Dr. K: Take your time along each step of the way. Even as a first-year medical student, I would always be looking forward to the next subject or course. Use the time that you have to really immerse yourself. On psychiatry, take your time to master the specialty because unless you're a psychiatrist you'll never have it again. Don't rush your training and as your reward you'll be a well-rounded physician scientist.

ML: Any final pieces of advice MSTP students should consider as they progress through the program?

Dr. K: Although they can be challenging, your years in the MSTP are great ones. Make sure to enjoy them!

ML: Any final pieces of advice MSTP students should consider as they progress through the program?

Dr. K: Enjoy your time in Columbus! Some of you may already be from Ohio, but for those who aren't go to the Shoe, watch a basketball game, jump in Mirror Lake (is that still a thing?). Even if you're from Ohio, get to know your colleagues because you'll soon figure out medicine is a small world and you'll come across those people again. Take your time to enjoy life because it will make you a better person and a better doctor.



2019 MSTP Winter Retreat

By Kylie Zane



The dawn of a new year means different things to different people. For myself, it means waiting two agonizing months for another OSU MSTP Winter Retreat, and this year's retreat, held March 2nd at the Davis Heart and Lung Research center, did not disappoint! The day began with a brilliant showcase of the MSTP's greatest passion. No—not research—I'm talking about cooking. Just kidding, Larry, our greatest passion is definitely research— but that doesn't stop us from having some seriously talented chefs. While the program's sous vide owners made their usual strong showing, the first years demonstrated some serious culinary chops with an international flair. Wesley Wang came prepared with black sesame steamed buns, and Ilse Hernandez served up some savory green chilaquiles, while Olga Golubeva prepared some extremely addicting pelmeni, an Eastern European variation on dumplings. While no official vote was conducted to determine the winner of these year's potluck, that doesn't stop me from using the authority given to me by this column to make a selection of my own: the winner of this year's potluck, according to this writer, is Youjin Cho (G3), for her delectable spam musubi sushi.

The potluck was followed by the keynote address, "Space, Surgery, and Research: A Tale of Compromise and Creativity" given by Dr. Peter Lee, MD, PhD, MPH, an assistant professor in cardiac surgery. In his talk, he detailed the desire to be an astronaut and love of space that drove him to pursue an MD and PhD, in addition to his pilot's license, a lab of his own, membership in the National Guard, and Russian. So, if you think you proved yourself to your parents by getting a dual degree, you can think again. Ultimately, it was a story of how it really is possible to combine disparate interests into a unified and successful career in academic medicine. I'm still trying to figure out how to unite my own lifelong dream of becoming a ninja from the Village of the Hidden Leaf with my research career, so this talk gave me a lot of great ideas.

Following an unusually well-coordinated group photo (shout out to Don and the AV guy) and a productive vertical mentoring session, three student presentations were given. Kate Hartmann (M3), returning to medical school after a Fulbright post doc in Brussels, presented 'A case of altered mental status,' illustrated the importance of memorizing all those cranial potential spaces in Neuro. She was followed by Andrew Stiff, who presented on a case titled 'ED and inpatient management of cancer patient with acute medical needs,' illustrating the complex disease risks in cancer patients, not only due to disease, but also therapy. Finally, in a completely novel format for the MTSP Winter Retreat, the third presentation was a joint talk by Alecia Blaszcak, Michael Koenig, and Kristina Witcher, titled 'Bad for Business: When industry and biomedical research clash.' In this talk, the influence of the tobacco industry, the NFL, and the sugar industry on their respective research fields was critically examined, revealing how industry research dollars don't always fund the facts.

The day concluded with a program-wide game of Taboo, resulting in a face-off between two teams: ATP (Awesome Taboo Players) and The Admins. In an epic victory, the final round went to ATP, marking Ansel Nalin's (G3) third (fourth? fifth?) retreat activity championship title. Congratulations Ansel and teammates! We're very proud of you.



Thinking Back on my First Year

By Jasmine Tuazon

I just got back from crushing Jerry and Dima in a game of pool with Wesley in the Student Lounge, so now seems like a good time to open a reflective monologue on the obstacles and treasures of the first year.

As I write this, we are currently hosting our Second Lookers, and memories of meeting my now-family a year ago are constantly flickering through my head. A year ago, with the awkwardness and stiffness of Second Look, I had begun to fear I wouldn't make any friends and would only have a lot of very nice acquaintances that I had to deal with for eight years. However, the moment Jerry started terrorizing us in the elevators at the Sheraton was probably the first sign that things were looking up friendship-wise.

In my M1 MSTP cohort, something must have been in the water because we all have some special combination of enthusiasm, dark humor, sarcasm, and mutual respect for each other which has resulted in a family of MSTP M1s + significant others + pets. "Wesley's Wedding Planning," as our GroupMe is affectionately called (as if Dima and Wesley's bromance wasn't going to ruin that plan), is always down to cook up something good for our 8275th potluck this year, run in pop-up 5Ks, support Akila (and Matt!) in the Professional School Orchestra performances, cheer on Illesound, take Instagram-worthy photos with the Queens of Hosting—Kyleigh and Lauren—during their Halloween/Med Prom/surprise birthday parties, absorb a group of MD M1s into our shenanigans to the point where they're honorary MSTP students, hug Becca until she faints, chaperone Dima to his first Broadway show, hike and ski, and take up the entire back row of Circuit Cycle with some of the M2s like Chris and Daniela. And it isn't weird for the >10 of us to gather in my house to make dumplings, play Olga's Taboo After Dark (or charades or Mafia, some of her other fav party games at the moment), and wade through Netflix's *Bandersnatch* until settling in for a sleepover at 4 AM.

But of course, my first-year experience would be nothing without the solid foundation given to me by the even larger family of the MSTP. Ashley, Don, Dr. Gur, Dr. Kirschner, and Cindy's intimidating aura of "The Admissions Team" has morphed into a spirit of companionship as we embark on our training journey. I will be forever indebted to people like Sankalp, Tiffany, Kylie, Daniela, Steven, Kylene, Kristina, Alex, Rachel, and others for selflessly sharing long emails or conversations worth in advice on PIs with whom I absolutely needed to rotate (and who to avoid like the plague if I didn't want to cry once a week, as some grad students in those labs do). As I finish my role as the M1 MSTP representative on Student Council, I have a much deeper understanding of the systems, directions, and visions of the leaders in our school. I would love to return to this role later in my time here to advocate for more efficient systems on behalf of the program.

With such a strong MSTP community around me, I feel incredibly proud to call myself an MD-PhD candidate at The Ohio State University College of Medicine. Wish us M1s good luck as we begin choosing our PhD labs and buckling down for our summer Host Defense block to ring in the M2 year!



Words of Wisdom from an MSTP Graduate



**By: Andrew Stiff MD, PhD
The Ohio State University
Medicine/Oncology PSTP**

It is astonishing how quickly the last eight years have passed. In thinking about these years, it seems that the common theme is change and growth whether it be related to our program, my career goals, or at a personal level. Unlike most MSTP students I arrived at OSU without a particular research interest, or plans to pursue a PhD at all. However, after starting medical school I found myself spending a lot of time in lab. Spare time turned into a one-year research fellowship, which then turned into applying to the MSTP as an advanced training applicant. I remember how excited I was when I learned I had been accepted into the MSTP, but I didn't have an inkling of what this news would lead to.

Joining the MSTP allowed me the time to develop as a scientist and explore different career paths. One of the great things about training at OSU is the availability of mentors. For me, mentorship was critical to my development as a scientist. Whether it came through my committee, a collaboration, or going to clinic I had a plethora of excellent mentors who helped me better identify important questions, develop the skills to investigate them, and translate them back to patients. I highly encourage current students to take advantage of their clinical hours during their PhD years. Lab is busy, but taking time to be in clinic can be beneficial in so many ways. It allows you to connect with patients experiencing the diseases you're studying, allows you to develop clinical mentors, and probably most importantly, time to see if a particular area of medicine is right for you. For me these experiences were critical to informing my decision-making process, and eventual choice to pursue medical oncology through a PSTP. My time in the MSTP also resulted in personal change and growth. It taught me how to handle adversity and frustration, better balance work with life, and allowed me to meet my wife and get married. For all of these wonderful things I cannot express my gratitude to the MSTP and OSU enough.

Writing this reflection also gave me great appreciation for how much the MSTP has grown and changed in the last eight years. One of the most notable changes to occur was the departure of Dr. Schlesinger. I remember when I first met Dr. Schlesinger and how impressed I was with his dedication to training future physician scientists. This dedication was instrumental in the growth of our program; it's funding by the NIH, and attracting so many of us to Ohio State. I think all of us owe Dr. Schlesinger our most sincere gratitude for everything he did for the MSTP. The fact that the program didn't skip a beat after Dr. Schlesinger left speaks to how fortunate the program was to have Dr. Kirschner become its new leader, and the job he has done since. Dr. Kirschner's energy and passion for supporting and growing our program has been obvious for years, and has also played an enormous role in its success. I'm very excited to see where Dr. Kirschner will take the program in the future. As a graduating student, it is also great to know that he will have a fantastic partner to help him guide the program in Dr. Gur. One area that I think we are all thankful the program hasn't experienced change is Ashley Bertran. Ashley has always been a source of stability, solidarity, and help within the program. All of the leadership past and present, I thank you so much for everything you have done.

I believe that all of these changes, whether they were personal or programmatic, are evidence of a successful MSTP that is achieving its mission to develop excellent scientists, clinicians, and people. With this in mind I encourage you all to explore your interests and gain experiences in new areas in both your personal and professional life. Approach the changes that may come with a sense of opportunity and optimism. My time at Ohio State was full of changes, and at the end I could not have asked for a better experience to prepare me for my career and my life. Best of luck to you all and I wish the entire MSTP continued success.



Student Awards and Achievements

- PhD Graduates
 - Michael Koenig
 - Kristina Witcher
 - Alecia Blaszcak
 - Luxi Chen
 - Nathaniel Murphy
 - Nicole Zalles
 - Ellen Lubbers
 - Giancarlo Valiente
 - Christopher Bobba
- 2019 Trainee Research Day Travel Award Winner – Nathaniel Murphy
- Eileen Hu elected to the APSA Executive Committee for 2019-2020 as the Events Committee Co-Chair.
- Alex Hartlage – APSA Travel Award
- Kevin Blum – AHA Fellowship Winner
- Alex Hartlage – F30 Fellowship Winner
- Ansel Nalin – F30 Fellowship Winner

Upcoming Events

- July 25th-26th – MSTP Summer Retreat

Residency Matches Class of 2019

- Stephen Bergin – Duke Neurosurgery
- Alison Boxwell – OSU Psychiatry
- Andrew Stiff – OSU PSTP Medicine/Oncology

University Fellowships

- Christopher Ayoub
- Sydney Fobare
- Megan Pino

MSTP Leadership and Academic Achievement Award

- Jerry Cui
- Kavin Fatehchand
- Olga Golubeva
- Zachary Hing
- Dmitry Malyshka
- Jasmine Tuazon
- Anisley Valenciaga
- Kylie Zane

Student Publications

- Xiao R, **Bergin SM**, Huang W, Mansour AG, Liu X, Judd RT, Widstrom KJ, Queen NJ, Wilkins RK, **Siu JJ**, **Ali S**, Caligiuri MA, Cao L. Enriched environment regulates thymocyte development and alleviates experimental autoimmune encephalomyelitis in mice. *Brain Behav Immun*. 2019 Jan;75:137-148. doi: 10.1016/j.bbi.2018.09.028. Epub 2018 Oct 1. PubMed PMID: 30287389; PubMed Central PMCID: PMC6279528.
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- **Wenyuan Yin**, Natalie R Gallagher, Caroline M Sawicki, Daniel B McKim, Jonathan P Godbout, John F Sheridan. Repeated Social Defeat in Female Mice Induces Anxiety-Like Behavior Associated with Enhanced Myelopoiesis and Increased Monocyte Accumulation in the Brain. *Brain, Behavior, and Immunity*. 2019 Jan 23. doi: 10.1016/j.bbi.2019.01.015
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