Dear Friends,

I am delighted to update you about events over the last year in the Department of Microbiology and Immunology. Much has happened in a short year since we last spoke. Have a look inside for all the news!

We continue in our missions of research, teaching, and service, not only at the local level, but nationally and internationally. In addition to running our own department and laboratories, our faculty continue to serve in high level administrative positions, making a difference in graduate and postdoctoral programs, research administration and serving our scientific societies at the highest levels. Adding to the list I outlined last year, we are pleased that Nicole Koropatkin, Ph.D. has been named an Associate Director of the Program in Biomedical Sciences, our graduate program, and Christiane Wobus, Ph.D. was chosen to lead the Institutional Biosafety Committee, a critical oversight group.

One of our most important responsibilities is to train the next generation of scientists. Since arriving at Michigan in 2004, I have seen the department train and graduate more than 80 doctoral students. These trainees have gone on to conduct postdoctoral fellowships at the best institutions, join the faculty at research-intensive or education-intensive academic institutions, garner positions in federal agencies including the NIH and USDA, work in biotech and pharmaceutical companies or as scientific writers, and even serve as a brew master (that’s real microbiology!).

In the past academic year, we have been training 35 Ph.D. students and 6 Master’s students. Ten doctoral students defended their dissertations. This year, we strengthened the pipeline by welcoming 21 students into our department. Ten Master’s students and 11 Ph.D. students have matriculated into our program (the largest number of students to matriculate in any given year in our department’s history) and have begun taking classes, conducting laboratory rotations, and deciding on their research direction. Thus, we now have 38 Ph.D. and 16 Master’s students. In addition, we have 36 outstanding postdoctoral trainees in our departmental labs. Overall, our future is in good hands as we train a very talented next generation of scientists.

We have also celebrated this year the following well-deserved faculty promotions: Akira Ono, Ph.D. to Professor with tenure, Adam Lauring, M.D., Ph.D. to Associate Professor with tenure, Andrew Tai, M.D., Ph.D. to Associate Professor with tenure, My-Hang (Mae) Huynh, Ph.D. to Associate Research Scientist, Simeone Marino, Ph.D. to Associate Research Scientist, Karla Passalacqua, Ph.D. to Assistant Research Scientist and Mark Anderson, Ph.D. to Research Assistant Professor. Congratulations to these faculty who have earned this recognition from the University.

Margaret Allen, our grants administrator extraordinaire, retired in December 2017 after 42 years of service at UM and more than 18 in M&I. We had a wonderful party for her, attended by people from all over the university. We miss her, but we know she is enjoying her retirement!
This year in our department, our faculty, postdocs, graduate students, technical staff and undergraduates have participated in hypothesis-driven discovery in the fields of bacteriology – including microbiome research, virology, cell biology, parasitology, and immunology. Using methods ranging from computational biology to structural biology to high throughput genomic screens to high resolution microscopy and other methods, our laboratories have published the results of over 100 scientific studies and have won more research funding than at any time in our 116-year history. All of this is brilliantly supported by our talented administrative staff. The future is bright.

I invite you now to take a look inside at all the great things going on in the department and, by all means, let us hear from you. As always, if you are in the area, please don't hesitate to stop by and say hello.

Go Blue!!

Harry L.T. Mobley, Ph.D.
Frederick G. Novy Distinguished University Professor & Chair
Faculty News
Faculty Promotions, Honors, and Awards

Mark Anderson, promoted to Research Assistant Professor.
Oveta Fuller, received the 2017 Trumpet Award for Community Service, 18th Annual Herald Awards of the Metropolitan Christian Council of Detroit-Windsor area.
Mae Huynh, promoted to Associate Research Scientist.
Denise Kirschner, serving as President, Society of Mathematical Biology; elected as Fellow, Society of Mathematical Biology.
Nicole Koropatkin, appointed Co-Associate Director, UM PIBS; elected Co-Chair of the Gordon Research Conference on “Carbohydrate-Active Enzymes for Glycan Conversions”.
Adam Lauring, promoted to Associate Professor with Tenure, Departments of M&I and Internal Medicine.
Simeone Marino, promoted to Associate Research Scientist.
Akira Ono, promoted to Professor with Tenure.
Karla Passalacqua, promoted to Assistant Research Scientist.
Anna Seekatz, Research Investigator, accepted an Assistant Professor of Biological Sciences position at Clemson University.
Joel Swanson, Co-Chair, First International Conference on Macropinocytosis, sponsored by the Royal Society, in Chicheley, England.
Michele Swanson, serving as President, American Society for Microbiology.
Andrew Tai, promoted to Associate Professor with Tenure, Departments of M&I and Internal Medicine; recipient of the Richard D. Judge Award for medical student teaching, UM Medical School.
Alice Telesnitsky, recognized with the 2018 Rackham Distinguished Graduate Mentor award.
Christiane Wobus, appointed Chair, UM Institutional Biosafety Committee.

Introducing the Honorable Harry Mobley

The M&I Department now has a Kentucky Colonel! Mike Dority, Ph.D. orchestrated the nomination of Harry Mobley, Ph.D., for the highest honor given by the Commonwealth of Kentucky. Following nomination by either an active Colonel or the Governor of Kentucky, Kentucky colonelships are appointed by the Governor for an individual’s contributions to his or her community, state, or nation and for special achievements. Dr. Mobley was raised in Kentucky, and he certainly has made extensive contributions in microbiology to our community, the state of Michigan, and the United States. Dr. Dority presented Dr. Mobley with the Colonel’s Commission at the Department picnic in September 2018. Harry was quite surprised and delighted to receive it, commenting, “Wow, this is cool! The only two other people I know of who have received this honor are Harland Sanders (Kentucky Fried Chicken founder) and my father.”

-Kathy Spindler

Kentucky colonelship of Harry Mobley at the M&I Department Picnic 2018
Leaders in Scientific Societies

The M&I Department has a legacy of leadership in scientific societies that includes former M&I Chairs Drs. Frederick Novy (fifth president of the Society of American Bacteriologists) and Frederick Neidhardt (president of the American Society for Microbiology, ASM). Scientific societies have long been champions of research and training by publishing the most reputable journals in their fields, hosting conferences, providing opportunities for trainees, and promoting lobbying efforts on behalf of their respective fields. This year, the M&I Department is home to four faculty with influential roles in their respective scientific societies.

The American Society for Virology found a new Secretary-Treasurer in Katherine Spindler, Ph.D., an appointment that resulted in the ASV moving their national office to the M&I Department. The Administrator to the Secretary-Treasurer, Andréa Garcia, heads the office in its new location. Denise Kirschner, Ph.D., began a two-year term as President of the Society for Mathematical Biology last year, following a two-year term as president-elect. She has the honor of being the third female president since the society’s founding in 1972. In July, Michele Swanson, Ph.D., began her one-year term as President of the American Society for Microbiology, marking the first time in the society’s history that all three presidents (president-elect, president, and past president) are women. Also at the ASM this year, Patrick Schloss, Ph.D., became Chairman of the Journals Board and successfully negotiated for a postdoctoral research fellowship to investigate research trends and biases in peer-review at ASM journals. This position was filled by M&I alumna Ada Hagan, Ph.D.

-Ada Hagan
Postdoctoral News

The mission of the Microbiology & Immunology Postdoctoral Association (MIPDA) is to provide M&I postdocs a platform to discuss career-related opportunities, network with each other, and exchange information. MIPDA also represents the interests and issues of postdocs within the department. All M&I postdocs are welcome to join our community and attend our monthly meetings.

This year the MIPDA was chaired by Josie Libertucci, Ph.D. (Young lab), sharing leadership of the group with other postdoctoral fellows: Jay Vornhagen, Ph.D. (Bachman lab) was liaison to and co-president of the UM Postdoctoral Association (UMPDA), Marc Sze, Ph.D. (Schloss lab) drafted meeting summaries, and Rebecca Pollet, Ph.D. (Koropatkin lab) aided in drafting meeting agendas. We used our monthly meetings to enhance the career development of our trainees. Some of the topics included how to write a successful grant [led by Anna M. Seekatz, Ph.D., (Young lab)], discussing DEI (diversity, equity and inclusion), and scientific communication [Ada Hagan, Ph.D., American Society for Microbiology (ASM) Journals fellow and senior contributor for ASM’s Microbial Sciences Blog].

Many postdocs within M&I have taken on leadership roles, both within the department and across the university. Dr. Pollet played a significant role in organizing the 2018 undergraduate research symposium. Dr. Libertucci was the postdoc representative to the DEI committee. And three of our postdocs are board members for the university-wide postdoctoral association (UMPDA): Dr. Vornhagen is co-president; William Close, Ph.D. (Schloss lab), leads postdoctoral affairs; and Lisa Abernathy Close, Ph.D. (Young lab), is a co-chair for the networking committee. The UMPDA provides valuable resources for postdocs, organizes events that support career development and well-being, and advocates for postdocs at the university level.

The MIPDA was honored to host three postdoc-invited speakers in 2018 as part of the M&I annual seminar series. In April, Garry McDowell, Ph.D., visited us from the Future of Research, and in September we had two invited speakers: Elizabeth Shank, Ph.D., (Assistant Professor at the University of North Carolina at Chapel Hill) and Jennifer Gardy, Ph.D., (Associate Professor at the University of British Columbia). Dr. Libertucci hosted all three speakers, and postdocs were given the opportunity to meet individually with each of the speakers to discuss research interests, career paths, and receive advice on a range of professional development topics.

M&I postdocs continue to perform high quality research and publish high-impact articles. This year, postdocs have published work as follows: Dr. Libertucci, Nature Microbiology, Scientific Reports, and American Journal of Physiology-Gastroenterology Liver and Physiology; Dr. Abernathy Close, Mucosal Immunology and PNAS; Dr. Close, Frontiers in Microbiology and Human Herpesviruses; Dr. Sze, mBio; Begüm Topçuoğlu, Ph.D., (Schloss lab), Environmental Microbiology; Marissa Renardy, Ph.D., (Kirschner lab), PLOS Computational Biology; Caitlin Hult, Ph.D., (Kirschner lab), Immunological Reviews, Stephanie Evans, Ph.D., (Kirschner lab), Lancet and European Journal of Epidemiology; Timothy Wessler, Ph.D., (Kirschner and Linderman labs), Journal of Controlled Release, Geetha Kannan, Ph.D., (Carruthers lab), Traffic.
Postdocs also gave both oral and poster presentations at national and international conferences. Our group was well represented at ASM Microbe 2018. Arwen Frick-Cheng, Ph.D., (Mobley lab), Allyson Shea, Ph.D., (Mobley lab), Anna Sintsova, Ph.D., (Mobley lab), and Laura Mike, Ph.D. (Mobley lab) all presented posters at ASM Microbe. Sarah Tomkovich, Ph.D. (Schloss lab) presented both a talk and a poster at ASM Microbe. Matt Ostrowski, Ph.D., (Martens lab), Dr. Pollet, and Ana Luis, Ph.D., (Martens and Koropatkin labs), presented posters at Beneficial Microbes. Dr. Pollet also presented a talk at the ASM Conference for Undergraduate Educators (ASMCUE). Dr. Renardy presented talks at both the Society for Industrial and Applied Mathematics (SIAM 18) annual general meeting and SIAM Conference of Life Sciences (SIAM LS18). Drs. Hult and Wessler both presented posters at the Society for Mathematical Biology annual general meeting (SMB2018), while Dr. Evans presented a talk. Dr. Hult also presented a talk at the American Mathematical Society (AMS) fall sectional meeting. Ajay Kumar, Ph.D., (Chang lab) presented talks at both the Immunometabolism Symposium and the American Association of Immunologists (AAI) annual general meeting. Drs. Abernathy Close and Libertucci both presented posters at the Madison Microbiome Meeting. Dr. Libertucci also presented a poster at Anaerobe 2018 and was the co-chair for the Canadian Society of Microbiologists Forum on Microbiology Education (CSMFOME). Dr. Sze presented a talk at the Keystone Symposium on Microbiome Host Resistance and Disease.

In addition to communicating our research at conferences, many M&I postdocs received prestigious grants, fellowships, and awards. Several postdocs were awarded competitive travel grants to attend conferences. Dr. Kumar was awarded a travel grant from AAI and also from the department of M&I. Joyce Wang, Ph.D., (Snitkin lab) was awarded a Canadian Institutes of Health Research (CIHR) fellowship. In May, David Hill, Ph.D., (Young lab) was awarded Pilot and Feasibility Project funding of $25,000 from the UM Center for Gastrointestinal Research (UMCGR) for a proposal entitled “Identification of host-microbial interaction networks that mediate epithelial barrier function in human intestinal organoids.” Dr. Sze was awarded the M&I Outstanding Postdoctoral Fellow Award. Finally, Dr. Seekatz was awarded a K01 from the National Institutes for Health (NIH) for her grant entitled “Critical functions of the gut microbiota that mediate recovery from recurrent Clostridium difficile infection.”

Three of our M&I postdocs were finalists in the Postdoc 180 (P180) competition, Kayla Peck, Ph.D., (Lauring lab), Dr. Hult, and Dr. Vornhagen. This is a competition for postdocs to communicate their scientific research with one slide and 180 seconds. Postdocs across the Medical School prepared and submitted videos of their Postdoc 180 speeches to be evaluated by a panel of expert judges from several biomedical disciplines. Only 10 finalists were selected from the submissions and in the end, Dr. Vornhagen won the competition!

Several M&I postdocs have been promoted or have accepted new positions. Dr. Hill was promoted to Research Assistant Professor in the Department of Internal Medicine, Division of Gastroenterology on July 1. Dr. Sze has accepted a position as a Senior Scientist at Merck. Dr. Seekatz has accepted an Assistant Professor position in the Department of Biology at Clemson University (to start in January 2019). Kaitlyn Flynn, Ph.D. (Schloss lab), has started a position as a Bioinformatician at the Benaroya Research Institute in Seattle.

We express our sincere thanks to the department chair, Harry Mobley, Ph.D., for his continued support of the MIPDA and his dedication to promoting our professional development. We also thank all of the office staff members for their support and assistance.

-Josie Libertucci
Graduate News

The Organization for Microbiology & Immunology Students (OMIS) is a student group that provides an avenue for graduate student collaboration and communication within M&I. Additionally, OMIS facilitates feedback between faculty and students. The OMIS president attends monthly faculty meetings and is given an opportunity to present student interests and concerns. For 2018 our OMIS officers were: Danelle Weakland (Mobley lab), President; Yolanda Rivera-Cuevas (Carruthers lab), Social Chair; Megan Procario (Imperiale lab) and Stephanie Theide (Snitkin lab), PIBS Recruiting Coordinators; Edmond Atindaana (Telesnitsky lab), Press Coordinator; Dishari Mukherjee (Ono lab), Department Photographer; Michelle Azar (Huffnagle lab), Masters Student Liaison. OMIS officers have also served on the department’s Committee for Diversity, Equity, and Inclusion.

UM M&I students continue to maintain its proud record of student accomplishment, including a long-standing history of obtaining traineeships from UM training programs (T32 awards). The Molecular Mechanisms of Microbial Pathogenesis Training program awarded fellowships to Megan Procario, Helen Warheit-Niemi (B. Moore lab), and Madeline Barron (Young lab). Anna-Lisa Lawrence (O’Riordan lab), and Yolanda Rivera-Cuevas, Stephanie Theide also received a second year of funding. The Cellular Biotechnology Training Program renewed funding for Danelle Weakland, and Christopher Sumner (Ono lab) was awarded an F31 NIH Individual Predoctoral Grant.

Many graduate students received funding from Rackham; Edmond Atindaana and Matt Schnizlein (Young lab), received a Rackham Graduate Student Research Grant (Pre-candidate), and Stephanie Theide received a Rackham Graduate Student Research Grant. Shawn Hawken (Snitkin lab) received a Rackham Predoctoral fellowship in addition to a University of Michigan Operating Committee of the Endowment for the Basic Sciences (EBS) 2018 Endowment for the Development of Graduate Education (EDGE) Award, and an IDSA IDWeek Mentorship Program travel award for IDWeek 2017. Matt Schnizlein also received an honorable mention for his National Science Foundation Graduate Research Fellowship proposal.

Some students participated in training courses and conferences within and outside UM. Yolanda Rivera-Cuevas participated in a Biology of Parasitism course at the Marine Biological Laboratories in Woods Hole, MA; and Danelle Weakland completed an internship in the Infectious Disease department at Genentech this summer. Matt Schnizlein presented a poster both at Anaerobe 2018, Las Vegas, NV (Finalist: Young Investigator’s Competition), and Madison Microbiome Meeting, Madison, WI; Shawn Hawken was selected for a plenary presentation at the Michigan Medicine Dept. of Internal Medicine Research Symposium 2018; and Edmond Atindaana was selected for a talk at the Conference on Retroviruses and Opportunistic Infections (CROI) 2018, Boston, MA.

-Edmond Atindaana
Ph.D. Defenses - October 2017 through October 2018

Nathan Thomas Porter  Mentor: Eric Martens  October 26, 2017
“Capsular polysaccharides in Bacteroides thetaiotaomicron and their role in mediating interactions with host immunity and bacteriophage”

Ada K. Hagan  Mentor: Phil Hanna  January 8, 2018
“Inside or Out: Characterizing petrobactin use by Bacillus anthracis”

Thomas D. Zaikos  Mentor: Kathleen Collins  March 12, 2018
“Characterization and elimination of the HIV reservoir”

Olivia McGovern  Mentor: Vern Carruthers  March 16, 2018
“Endocytic trafficking in Toxoplasma gondii”

J.T. McCrone  Mentor: Adam Lauring  March 20, 2018
“Influenza virus evolution within and between human hosts”

Aric J. Schultz  Mentor: Vern Carruthers  March 21, 2018
“An analysis of LCAT in regards to egress in Toxoplasma gondii”

Matthew Harrison Foley  Mentor: Nicole Koropatkin  May 4, 2018
“Glycan scavenging at the cell surface: The Bacteroidetes Sus-like paradigm”

Courtney Luterbach  Mentor: Harry L.T. Mobley  June 1, 2018
“Investigating the coordinated regulation of adherence and motility in uropathogenic Escherichia coli”

Travis Kochan  Mentor: Phil Hanna  June 13, 2018
“Characterizing the early events of Clostridium difficile spore germination”

David Lin  Mentor: Andrew Tai  August 29, 2018
“Characterization of flavivirus host-cell interactions”
Welcome Doctoral Student Class of 2017!

Left to right, standing: Filipe Cerqueira, Madeline Barron, Lisa Tran, Aric Brown; seated: Helen Warheit-Niemi, Amanda Photenhauer

**Madeline Barron**, B.S. in Molecular, Cellular, and Integrative Biology, Beloit College (Young lab)
**Aric Brown**, B.A. in Cell & Molecular Biology and German, Washington & Jefferson College (Mobley lab)
**Filipe Cerqueira**, B.S. in Microbiology, University of Texas at Austin (Koropatkin lab)
**Amanda Photenhauer**, B.S. in Microbiology, University of Michigan (Koropatkin lab)
**Lisa Tran**, B.A. in Microbiology and B.S. in Psychology, University of California, Davis (Vecchiarelli lab)
**Helen Warheit-Niemi**, B.S. in Microbiology, University of Washington (B. Moore lab)

Welcome Master’s Student Class of 2018!

Left to right, back: Boning Yang, Chenxian Ye, Keerthikka Ravi, Nanditha Ravishankar, Chong Zhao, Xin Sun
Front: Peter Shin, Aaron Prater, Eliese Potocek, Chenhua Zeng

**Eliese Potocek**, B.S. in Microbiology, Western Illinois University
**Aaron Prater**, B.S. in Biomolecular Science, University of Michigan
**Keerthikka Ravi**, B.S. in Genetic Engineering, SRM Institute of Science & Technology, India
**Nanditha Ravishankar**, B.S. in Biotechnology, PES University, India
**Cheon Jee (Peter) Shin**, B.A. in Biology, Taylor University
**Xin Sun**, B.S. in Biological Engineering, University of Missouri; B.S. in Biological Science, East China University of Science & Technology
**Boning Yang**, B.S. in Animal Science, China Agricultural University
**Chenxian Ye**, B.S. in Pharmacy, Shanghai Jiatong University, China
**Chenhua Zeng**, B.S. in Biotechnology, Soochow University, China
**Chong Zhao**, B.S. in Biotechnology, Changchun University of Science & Technology, China
Undergraduate News

Experiences and lessons from the 2018 Zambia Immersion Team

From July 11 – August 6, 2018, I traveled to Zambia with six undergraduate teammates in a UM Medical School immersion course, Microbiology 450, “The Global Impact of Microbes: Fieldwork.” The 2018 UM team was guided by Professors Oveta Fuller and Cheong-Hee Chang and was the seventh cohort to go to Zambia. This experiential learning focuses on understanding HIV/AIDS and includes appreciating impacts of other infectious diseases such as cholera, tuberculosis, malaria, etc.

We assisted with Trusted Messenger intervention workshops designed to equip religious leaders with understanding of the biology of HIV/AIDS. Since faith, particularly Christianity, plays a vital role within Zambian communities, engaging religious leaders provides a trusted network with accurate information to help stop spread of HIV and its associated stigma.

Much of our additional time was spent within Zambian communities to appreciate factors that influence health care, microbial spread and infectious disease control.

Each team member was welcomed into the home of a host family. I lived with an extended family of twelve in the Chalala neighborhood of Lusaka. Of all of the amazing experiences in Zambia, I learned the most by spending time with my host family, playing with the kids, and having late night conversations with the adults about everything from making nshima (a staple food in Zambia) to issues that affect our world. For their hospitality, kindness, and willingness to let me be a part of their family, I am most grateful.

After visiting Zambia for only four weeks, I cannot call myself an expert of Zambian people and culture. However, upon my return to the USA I have contemplated the work performed, people met, and experiences shared. Here are several items that my 2018 team considers among the most important things learned during this immersion.

- Africa, a continent of 54 countries, is often greatly misunderstood. Many of the stereotypes I had of sub-Saharan Africa were misunderstandings due to my lack of knowledge.
- Africa is not one big culture like many people think, but many cultures of different people and traditions. Zambia alone has 73 different tribes and over 70 languages.
- Many of the same values and ways of life are shared among people from Zambia, the United States, and other countries.
- The most important lesson I learned is that fear stemming from a lack of knowledge is dangerous and hinders progress in a globalized world. This applies not only to lack of biological understanding for stopping HIV/AIDS, but fear of and lack of knowing about each other.

I cannot wait to go back and visit my second family. I encourage everyone to travel to such a great country as Zambia, or to take advantage of at least one of the many study abroad opportunities at UM. It will change your perspective and your life forever.

-Andrew Jaeger, UM Class of 2020
Undergraduate Research Symposium

The annual Undergraduate Research Symposium was held on August 28, 2018. It was organized by Rebecca Pollet, Ph.D., a postdoc in Nicole Koropatkin’s lab. Following six excellent presentations, Amanda Haag was awarded the undergraduate research award for her work and presentation. Haag’s work in Akira Ono’s lab is aimed at developing and characterizing a fluorescently-labeled viral protein that allows live cell imaging of the influenza A virus particle assembly process.

-Rebecca Pollet

Alumni News

Zack Abbott (Ph.D. 2015, M. Swanson) is the Founder and CEO of ZBiotics, San Francisco, CA.
Amal Amer (Postdoc 2004, M. Swanson) is an Associate Professor at Ohio State University.
Chelsie Armbruster (Postdoc, Mobley), is an Assistant Professor in the Department of Microbiology and Immunology at the Jacobs School of Medicine and Biomedical Sciences, University of Buffalo, NY.
Shanna Ashley (Ph.D. 2016 [Immunology], B. Moore), has accepted a position as Senior Scientist II at AbB Vie, Worcester, MA.
Michael Bachman (M.D., Ph.D. 2002, M. Swanson) is an Associate Professor at University of Michigan Medical School.
Niel Baxter (Ph.D. 2016, Schloss; Postdoc 2018, Schmidt) is a Research Scientist at Elanco Animal Health, Greenfield, IN.
Zachary Benet (Ph.D. 2017 [Immunology], Grigorova) is a postdoctoral scholar with David R. Fooksman at Albert Einstein College of Medicine, NY.
Ariel Brumbaugh (Ph.D. 2014, Mobley) is a postdoctoral scholar with Michael Fischbach at Stanford University.
Andrew Bryan (M.D., Ph.D. 2011, M. Swanson) is Assistant Director of Clinical Microbiology and Acting Assistant Professor at the University of Washington, Seattle.
Elizabeth Cameron (Ph.D. 2014, Martens) has a joint postdoctoral appointment between labs at UT Southwestern and University of Minnesota.
Paul Carlson (Postdoc, Hanna) is a Principal Investigator in the Laboratory of Mucosal Pathogens and Cellular Immunology, Center for Biologics Evaluation and Research, Office of Vaccines Research and Review, US Food and Drug Administration, Silver Spring, MD.
Katie Carr (Ph.D. 2010, Hanna) is a Major in the U.S. Army at Fort Detrick, MD, currently working in project management to develop infectious disease solutions to protect U.S. service members, including the recently FDA-approved malaria prophylactic drug, Tafenoquine.
Stephen Cendrowski (Ph.D. 2004, Hanna) is currently Head of the Toxinology Laboratory for the National Bioforensic Analysis Center, which is part of the National Biodefense Analysis and Countermeasures Center in Fort Detrick, Frederick, MD.
Darrell W. Cockburn (Research Investigator, Koropatkin) is now an Assistant Professor in the Food Science Department at Pennsylvania State University.
Sebastien Crepin (Postdoc 2014, M. Swanson) is a Research Investigator at the University of Michigan Medical School.
Zach Dalebroux (Ph.D. 2010, M. Swanson) is an Assistant Professor at the University of Oklahoma Health Sciences Center.
Mahesh Desai (Postdoc, Martens) is a tenure-track faculty member at the Luxembourg Institute of Health.
Rachel Edwards (Ph.D. 2008, M. Swanson) is a Research Scientist at Washington University, St Louis, MO.
Mike Eftman (Postdoc, Wobus) is an Assistant Professor of Immunology, Central Michigan University College of Medicine.
Estaband Fernandez Moreira (Postdoc 2006, M. Swanson) is an Assistant Professor at the Universidad de las Americas Ecuador.
Nate Fisher (Ph.D. 2006, Hanna), is Associate Director and Head of Bacteriology for the Drug Development Division of Southern Research, in Birmingham, AL.
Kaitlin Flynn (Ph.D. 2015, M. Swanson; Postdoc, Schloss) has accepted a position as Bioinformatician at Benaroya Research Institute, Seattle, WA.

Matthew Foley (Ph.D. 2018, Koropatkin) is a postdoctoral fellow with former UM fellow Casey Theriot, at North Carolina State University.

Maris Fonseca (Postdoc 2010, M. Swanson) is an Associate Professor at Monroe Community College, Monroe, MI.

Jonathan Giebel (Ph.D. 2011, Hanna), is the Program Lead for Bayer’s LifeHub, Boston, MA. He is creator and host of the new “Plugging In” podcast about innovation topics in the life sciences.

Mariam Gonzalez-Hernandez (Ph.D. 2014 [Immunology], Wobus) is a Scientist at Meso Scale Diagnostics in Rockville, MD.

Ada Hagan (Ph.D. 2018, Hanna) is a postdoctoral research fellow with Pat Schloss and funded by the American Society for Microbiology Journals Department to investigate trends and biases in academic publishing.

Brian Hammer (Ph.D. 2001, M. Swanson) is an Associate Professor at Georgia Institute of Technology, Atlanta, GA.

Tien-Huei Hsu (Ph.D. 2012, Spindler) is Senior Medical Director with Harrison & Star, New York City, NY.

Jingga Inlora (Ph.D. 2105, Ono) is a Bioinformatics Scientist with Viome, Cupertino, CA.

Matthew Jenior (Ph.D. 2017, Schloss) is a postdoctoral research fellow at the University of Virginia.

Amrita Joshi (Ph.D. 2000, M. Swanson) is a Research Laboratory Specialist at University of Michigan Medical School.

Bjorn Kafsack (Ph.D. 2008 [JHU], Carruthers) is an Assistant Professor at Weill Cornell Medical College, New York City, NY.

Travis Kochan (Ph.D. 2018, Hanna) is a postdoctoral scholar in Alan Hauser's lab at Northwestern University, where he is investigating novel virulence factors associated with carbapenem-resistant Klebsiella pneumoniae.

Courtney L. Luterbach (Ph.D. 2018, Mobley) is a postdoctoral research associate with David van Duin in the Institute for Global Health and Infectious Diseases at the University of North Carolina at Chapel Hill.

Mike McConnell (M.D./Ph.D. 2006, Imperiale) is a Tenured Scientist, Department of Bacteriology, National Center for Microbiology (Centro Nacional de Microbiologia), Madrid, Spain.

John T. (JT) McCrone (Ph.D. 2018, Lauring) is a postdoctoral fellow with Andrew Rambaut at the University of Edinburgh, Scotland.

Olivia McGovern (Ph.D. 2018, Carruthers) is an Epidemic Intelligence Service Officer with the Centers for Disease Control and Prevention.

Ari Molofsky (M.D./Ph.D. 2005, M. Swanson) is an Assistant Professor at UC San Francisco.

Karla Passalacqua (Ph.D. 2007, Hanna) is now an Assistant Research Scientist, UM M&I.

Matt Pauly (Ph.D. 2016, Lauring) is an ORISE Fellow in the Division of Viral Hepatitis at the Centers for Disease Control and Prevention.

Pilar Perez-Romero (Postdoc, Imperiale) is a Tenured Scientist, Department of Virology, National Center for Microbiology (Centro Nacional de Microbiologia), Madrid, Spain.

Jeff Perry (Ph.D. 2012, Wobus; Postdoc, Tai) is a Research Scientist II at Progenity, Inc., Ann Arbor, MI.

Nathan Porter (Ph.D. 2017, Martens) is doing a postdoctoral fellowship at Chalmers Technical University in Gothenburg, Sweden.

Theresa Rogers (Postdoc, Martens) is an Assistant Professor at California Lutheran University in Thousand Oaks, CA.

Marijo Roiko (Ph.D. 2013, Carruthers) is the Microbiology Program Director for Altru Health System in Grand Forks, ND.

John-Demian Sauer (Ph.D. 2006, M. Swanson) is an Assistant Professor at University of Wisconsin, Madison.

Alyx Schubert (Ph.D. 2015, Schloss) is a Staff Fellow in the laboratory of Paul Carlson, Laboratory of Mucosal Pathogens and Cellular Immunology, Center for Biologics Evaluation and Research, Office of Vaccines Research and Review, US Food and Drug Administration, Silver Spring, MD.

Aric Schultz (Ph.D. 2018, Carruthers) is pursuing entrepreneurial opportunities in Denver, CO.

Lynne Shetron-Rama (Postdoc 2003, M. Swanson) is an Associate Professor and Program Director for Clinical Laboratory Science at Eastern Michigan University in Ypsilanti, MI.

Sheila Sturgill-Koszycki (Postdoc 1999, M. Swanson) is a Senior Medical Science Liaison in the pharmaceutical industry.

Stefan Taube (Postdoc, Wobus) was promoted to W2 Professor (Associate Professor equivalent), University of Lübeck, Department of Structural and Molecular Virology, Lübeck, Germany.

Brendan Thomason (Ph.D. 2005, Hanna) is a Program Manager on the Discovery and Translational Sciences team at the Bill & Melinda Gates Foundation, Seattle, WA.

Gabrielle Todd (Postdoc, Ono) is a postdoctoral researcher at SUNY Albany, with Annalisa Scimemi.

(Continued on page 14)
Alumni News (Continued)

Jackson Turner (Ph.D. 2017 [Immunology], Grigorova) is a postdoctoral fellow with Ali Ellebedy at Washington University in St. Louis, MO.

Ursula Waack (Ph.D. 2017, Sandkvist) is an Animal Model of Serious Bacterial Infection Fellow at the US Food and Drug Administration, Rockville, MD.

Hayley Warsinske (Ph.D. 2017, Kirschner) is a postdoctoral scholar in the laboratory of Purvesh Khatri in the Department of Immunology, Stanford University. She will receive the M&I MacNeal Award in November 2018.

Natalie Whitfield (Ph.D. 2009, M. Swanson) is the Director of Scientific and Medical Affairs at GenMark Diagnostics, Carlsbad, CA.

MJ Wilson Flannery (Ph.D. 2012, Hanna) is Chair of the Science Department, teaching Honors & AP Chemistry at Muchin College Prep School, serving low income students, Chicago, IL.

Ping Ye (Ph.D. 2001, Kirschner) is an Investigator at Avera Cancer Institute, Sioux Falls, SD and Adjunct Associate Professor, College of Pharmacy and Allied Health Professions, South Dakota State University, Brookings, SD. Ping serves as Secretary of the Society of Mathematical Biology.

Joseph Zackular (Ph.D. 2014, Schloss) is an Assistant Professor at University of Pennsylvania and Children’s Hospital of Philadelphia.

Departmental News

Neidhardt-Freter Symposium

On October 9, 2017, M&I hosted its 6th annual Neidhardt-Freter Symposium in Bacterial Physiology and Virulence. Each year, two speakers are invited to share their work in microbiology fields established by Frederick Neidhardt, Ph.D. and Rolf G. Freter, Ph.D. Neidhardt established the field of microbial proteomics, focusing on gene regulation and molecular physiology of bacterial growth, while Freter is remembered for his research on host-human interactions that established the importance of the intestinal microbiota in host defenses.

Harry Mobley, Ph.D. and Christopher Alteri, Ph.D. hosted Susan Gottesman, Ph.D., an NIH Distinguished Investigator in the Center for Cancer Research and head of the Biochemical Genetics Section, at the NIH National Cancer Institute, and Jeff F. Miller, Ph.D., from the University of California-Los Angeles and director of the California NanoSystems Institute. Gottesman’s talk, “Post-transcriptional control of stress response regulons”, described her work investigating the small regulatory RNAs of stress regulons in E. coli, such as RpoS. Miller’s talk followed lunch and was entitled “Accelerated evolution by diversity-generating retroelements in phage, bacteria, and human microbiomes.” Here, Miller described his lab’s discovery of a phage reverse transcriptase that enables directed mutation of phage surface attachment proteins and thus a greater host tropism.

-Ada Hagan
MacNeal Dissertation Award

The MacNeal Dissertation award honors Ward J. MacNeal (A.B. 1901, Ph.D. 1904, M.D. 1905, Honorary Sc.D. 1939), a pathologist who specialized in cancer research and was a noted authority on bacteria and phage. The award is given each academic year to a Ph.D. graduate from a pool of nominees for their scholarly credentials, significant contribution to the field, and effective writing. The 2017 MacNeal Scholar was David Collins (Ph.D. 2015, Kathleen Collins lab), a postdoctoral fellow in the laboratory of Dr. Bruce Walker at the Ragon Institute of Massachusetts General Hospital, Massachusetts Institute of Technology and Harvard University. During his October 27, 2017 presentation, Dr. David Collins described his ongoing research aiming to define determinants of durable CD8+ T cell-mediated HIV suppression, and mechanisms of immune escape in patients who lose virologic control.

-Edmond Atindaana

Heritage Lectureship

Joel Swanson, Ph.D hosted his former graduate student, Adam Hoppe (Ph.D. 2003) in December 2017 as the Heritage Lecturer. Hoppe is now an Associate Professor in the Department of Chemistry & Biochemistry, South Dakota State University. He has developed genetic and microscopic techniques to elucidate a systems biology viewpoint of macrophage function. Dr. Hoppe’s talk, entitled “Fc-receptor dependent, antibody-mediated killing mechanisms interrogated by high-resolution microscopy and CRISPR-based screening strategies in macrophages”, described the rules that govern the cellular and molecular mechanisms of antibody-dependent cellular phagocytosis, and progress towards his goal of improving therapeutic antibody development for treatment of cancer and viral infections.

-Edmond Atindaana

Brockman Lecture

The Brockman Lecture is held yearly in honor of William Brockman, Ph.D. Dr. Brockman was a professor in the Microbiology and Immunology department from 1976 to 1984 whose research focused on the molecular biology of animal viruses. In November 2017, Herbert W. “Skip” Virgin IV gave the 2017-2018 Brockman Lecture. He is a member of the National Academy of Sciences and at the time, was the Edward Mallinckrodt Professor and Chair of the Department of Pathology & Immunology at the Washington University School of Medicine. He is now Executive Vice President of Research and Chief Scientific Officer at Vir. Dr. Virgin's research is focused on the host/pathogen/symbiont interface. In his lecture, he described new findings in norovirus biology using murine norovirus, a model that is used widely to study the fastidious human noroviruses. Specifically, he presented data about the identification of the first norovirus protein receptor, the role of bile acids and interferon lambda during infection, and a novel tropism of this virus for tuft cells during the persistent phase of the infection.

For the 2018-2019 seminar series, Doug Lowy, M.D. was the honored Brockman Lecturer. Dr. Lowy is a Distinguished Investigator at the NIH and the Acting Director of the National Cancer Institute (NCI). He is most well-known for his research with John Schiller, Ph.D. that enabled the development of preventive vaccines for human papillomavirus (HPV) and earned the pair the 2017 Lasker-DeBakey Clinical Medical Research Award. During his seminar presentation entitled “Vaccination and Screening to Control Cervical Cancer and Other HPV-associated Diseases”, Dr. Lowy discussed the current trends in HPV vaccination across multiple countries. He also presented ambitions for future vaccine improvements, such as reducing the number of required doses. Finally, Dr. Lowy stressed the importance of HPV detection as a screening mechanism for precancerous cells.

-Christiane Wobus and Kayla Peck
Diversity, Equity, and Inclusion (DEI) in M&I

The Department continues to promote the University’s DEI mission and M&I’s own DEI initiatives this year. The departmental DEI committee, established in 2016 with representatives from students, postdocs, research and administrative staff, and faculty, implemented a wide variety of activities to promote DEI at all levels. There were a number of newly-initiated activities:

- More than 40 members of faculty and staff received bystander training where they learned best practices for how to respond when they hear or see something that isn’t in line with our values.
- Approximately 60 members of faculty and staff received training on mental health and suicide prevention.
- M&I instituted a program for peer-to-peer mentoring of incoming students, along with a student committee to select and invite speakers of diverse career perspectives, funded by a new grant from the Rackham Graduate School.
- We had department-wide participation in community services, including volunteering at Food Gatherers.
- To further the appreciation of the multicultural nature of our department, we organized multi-culture social gatherings. One was the Diversity Potluck on May 1, 2018 that attracted over 60 people with more than 30 dishes that represented a variety of areas and heritages in the US and the world.
- During the summer, M&I held monthly Story Time where department members told non-scientific, personal stories. This activity provided opportunities for better understanding of others in the department and appreciation of differences and similarities among us.
- Many of our faculty and students are continuing to engage in activities that will help recruit and train a more diverse pool of students, such as updating our personnel directory for potential students to feel welcome submitting their applications.

An increasing number of students, postdoctoral fellows, research and administrative staff, and faculty have been spearheading and/or actively participating in M&I’s DEI activities. The DEI committee’s goal is to have each department member engage in at least one activity that will ultimately improve DEI in the department and the University. We welcome broad and continued participation from all members of the department.

-Akira Ono
Leading Role for M&I in New Partnership between UM and the Mbarara University of Science and Technology, Uganda

Two delegations from Mbarara University of Science and Technology (MUST) visited UM in 2018, coordinated in part through the UM Medical School’s Global Reach program. MUST has chosen UM as a key strategic partner for MUST’s new Africa Center of Excellence for Pharm-Biotechnology and Traditional Medicine. This is a World Bank-funded project that explores how emerging biotechnologies might leverage herbal remedies to identify new drugs and therapies. UM is a partner in that effort, which seeks to build training programs and boost capacity for the commercialization of products in biotechnology and traditional medicine. Representatives from the UM Pharmacy, Nursing, and Business colleges joined Medical School leaders for the signing of the Memorandum Of Understanding in April, which was led by the UM Vice Provost for Global Engagement and Interdisciplinary Academic Affairs, James Holloway and the MUST Vice Chancellor and Professor of Pharmacology, Celestino Obua.

M&I was one of the hosting units in the Medical School and played a key role in establishing the formal partnership throughout the visit. Early collaboration between Professor Patrick Ogwang of MUST and UM M&I Professor Cheong-Hee Chang, Ph.D. led to the pharm-biotech partnership. In addition, support from the UM African Studies Center enabled the Chang lab to host MUST graduate student Silvano Twinomujuni for three months of training in immunological techniques. The partnership between MUST and UM focuses on student and learning exchanges.

Subsequently, M&I hosted a second delegation, namely Dr. Joel Bazira, the Chair of the MUST Department of Medical Microbiology, from May 1-17. He met with various M&I faculty, administrators and leaders to discuss potential collaborations between MUST and UM, focused on biomedical sciences and pharmacy research. Dr. Bazira also had the opportunity to observe ongoing research programs in our department. The visit provided an opportunity for him to gain a broader understanding of the biomedical research programs at a major academic medical center in US. The new partnership will host additional MUST scholars in the coming years, benefiting the students, faculty, and communities at both institutions.

-Cheong-Hee Chang
M&I Departmental Retreat

Members of the M&I Department gathered at the Kellogg Biological Station from October 14-16, 2018 for the biennial retreat. This retreat was a break from previous years, with less emphasis on scientific talks, and instead, a theme of careers outside of the traditional instructional track. For the first evening session, a M&I alumnus spoke. Mike Mowatt, Ph.D. (Ph.D. with Wes Dunnick, Ph.D.), is Director of Technology Transfer and Intellectual Property Office at the National Institute of Allergy and Infectious Diseases at the National Institutes of Health and talked about his career path and job opportunities and fellowships at the NIH in tech transfer. The next day, attendees heard from Shoba Subramanian, Ph.D., Director of Curriculum and Educational Initiatives in the UM Office of Graduate and Postdoctoral Studies about holistic career planning. M&I alumna Laura Bauler, Ph.D. (Ph.D. with Mary O’Riordan, Ph.D.), is a Medical Editor/Assistant Professor at Western Michigan Medical School and talked about her job search strategy and creating her niche in a new medical school. All three spoke on the diverse paths they took to reach their current positions and provided advice to the trainees on navigating their careers.

There was a panel moderated by Kate Eaton, D.V.M., Ph.D. that included Evan Snitkin, Ph.D., Nicole Koropatkin, Ph.D., and M&I alumnus Brian Gray, Ph.D. (Ph.D. with Kate Eaton). They addressed topics of starting your own lab, work-life balance, and teaching at a small college (York College, Pennsylvania), respectively. This included a Q&A session with active audience participation. In the afternoon there was a Science Slam: students and postdocs presented a five minute research “elevator pitch” using only 1-2 slides. The poster session that immediately followed was made more interactive with a scavenger hunt with clues located on the posters.
On the second evening, postdoctoral associates Josie Libertucci, Ph.D., Rebecca Pollet, Ph.D., Jay Vornhagen, Ph.D., and Begüm Topçuoğlu, Ph.D. led a thought-provoking dialogue about diversity, equity, and inclusion (DEI), culminating with a list of actions that can be taken by our department to promote DEI, an important mission at UM overall. On the final morning, Ph.D. candidate Amanda Photenhauer led a delightful session that began with BINGO. The board consisted of activities that graduate students are involved with outside of the lab. This was a fun way to get to know the non-science side of the M&I students. The session concluded with an introduction to the Citizen Science Alliance, a way that scientists can get help from and excite non-scientists.

As in years past, the social events were led by the postdocs and graduate students. Drs. Libertucci, Pollet, and Vornhagen refereed Lab Olympics on behalf of the postdocs. It was a grand time, with teams testing their abilities at the bench with events such as filling pipette boxes, calculating plaque forming units, and guessing liquid volumes. Amanda Photenhauer and graduate students orchestrated the second evening’s event with a slide deck improv. M&I lab heads showcased some amazing hidden talents while improvising a presentation of a random slide deck. Some highlights were dancing by Joel Swanson, Ph.D. and Christiane Wobus, Ph.D.; an airlift à la Dirty Dancing of Akira Ono, Ph.D. by Vern Carruthers, Ph.D.; interesting ideas about squirrels presented by Denise Kirschner, Ph.D. and Harry Mobley, Ph.D.; and a re-enactment of a presidential debate over science by Vince the Young Trump, Ph.D. and Mary Clinton O’Riordan, Ph.D.

The retreat itinerary was planned by Kate Eaton, Mae Huynh, Ph.D., and Heidi Thompson, who coordinated the logistics for lodging, meals, and travel. Multiple participants commented that they enjoyed the less-science-intensive schedule, getting to know other members of the department, and overall, they deemed it a success!

-Geetha Kannan and Mae Huynh
Donations and Gifts

The Department of Microbiology gratefully acknowledges the generosity of donors to the Department in 2017-2018. The Department manages several endowments that provide support for student stipends, tuition expenses, and other scholarly activities in the Department. These funds are essential to further our mission of academic excellence. Details can be found at our website:

https://leadersandbest.umich.edu/find/#!/mimed/mimed/microbio

We especially encourage you to consider making a donation on GIVING BLUEDAY, Tuesday, November 27, 2018. It's your day to be a Victor for Microbiology & Immunology!

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