Dear Friends:

It is my pleasure to update you about our happenings for this past year. I have completed 13 years (a lucky number) as the department's chair, and I feel fortunate to report an extraordinary array of activities. I will summarize just a few, but other achievements can be found inside.

In the past academic year, we have been training 35 Ph.D. students and 11 Master's students. Five doctoral students defended their dissertations, and 4 Master's students earned their degrees. Six Ph.D. students and 4 Master's students joined our program this fall. Thus, we currently have 41 Ph.D. and 11 Master's students. In addition, we have 43 outstanding postdoctoral trainees in our departmental labs. In all, we are in good hands as we train a very talented next generation of scientists.

We continue to be served by our outstanding administrative staff who support our research, teaching, and service efforts. My hat is off to this outstanding team headed by chief departmental administrator Ann Smith.

We continue to teach 23 courses to medical, graduate, dental, and undergraduate students in the subjects of bacteriology (including the microbiome), virology, immunology, parasitology, and bioinformatics & database management. It is of note that the interest of undergraduates in our course offerings has increased dramatically as the undergraduate microbiology major becomes more popular.

We continue to be Leaders and Best as our faculty assume high level local and national positions of service in our field. Locally, Mary O’Riordan, Ph.D. serves as Associate Dean for Graduate and Postdoctoral Studies and Michele Swanson, Ph.D. is Director for Postdoctoral Studies. Michael Imperiale, Ph.D. has recently been selected as Associate Vice-President of Research - Research Policy and Compliance in the UM Office of Research for the entire university.

Nationally, Dr. Swanson, President-elect of the American Society for Microbiology (ASM; the largest single-discipline scientific organization) will assume the President's role beginning July 1, 2018. Denise Kirschner, Ph.D., President-elect of The Society of Mathematical Biology will serve 4 years beginning July 1, 2018. Katherine Spindler, Ph.D. has been appointed “permanent” Secretary-Treasurer of American Society of Virology, and their national office has relocated here to our administrative space and is open for business. Patrick Schloss, Ph.D. was selected to head the ASM Publications Board, which governs 13 well-respected journals for our disciplines. And Harry Mobley, Ph.D. (yes, that’s I) was selected to serve a two-year term as Distinguished ASM Lecturer as of July 1, 2017, where I will be available to speak nationally at ASM branch meetings.

With respect to research support, our grant funding for fiscal year 2016 ending June 30, 2017 was $15.8 million ($14.0 million from NIH). M&I was ranked 11th in NIH funding nationally among like departments. Estimates for fiscal year 2017 are similar, but we predict breaking into the top 10 this fiscal year for the first time in the department's 115-year history.

Currently, we have 26 primary faculty members appointed on the instructional track. Twenty of our 26 faculty held a grant in FY16 from any source. 18 faculty held 30 NIH grants. Of special note, three primary faculty held large NIH cooperative agreements or “U grants”. These were “Systems biology of Clostridium difficile infection” (Dr. Schloss and Vincent Young, M.D./Ph.D., PIs) and “A multi-scale systems pharmacology approach to TB therapy” (Dr. Kirschner and colleagues, PIs). “The Center for HIV/AIDS related structural biology (cRNA) (Alice Telesnitsky, Ph.D., PI) was renewed for a second five years. Also, Akira Ono, Ph.D. earned a coveted 10-year NIH MERIT award for his mechanistic work on HIV viral assembly.
With respect to challenges, we are anxiously awaiting renovation of some of our laboratory space in 2018. A new space policy will free up new laboratories for our future recruitment. At present, we occupy nearly 40,000 sq ft. of research and administrative space (for reference, this is the size of the average grocery store).

Under the direction of Professors Malini Raghavan, Ph.D. and Dr. Ono, there has been a very meaningful effort to increase Diversity, Equity, and Inclusion in Microbiology & Immunology. This has engaged all constituencies in the department. New members of the department are introduced to the department with a profile of the new member. A blackboard has been installed to list all holidays and key events for all diversity groups, cultures, and religions, helping us to appreciate the celebrations of all departmental members. We hold a biweekly tea in winter months at which time our diversity is celebrated. Thanks to this important committee for their work.

Of course, a few things have been on my plate including the recruitment of the prestigious Nancy Walls Professorship (a $2.5M Professorship). Interviews of a national pool of faculty candidates, selected by our search committee, are underway. I served on the Executive Committee and a number of other medical school committees including co-chairing the search for the school’s Chief Scientific Officer that ended in a successful recruitment of Bishr Omary, M.D./Ph.D. (UM Molecular and Integrative Physiology) for this new leadership role. I also had the privilege of co-directing year 4 of the Host Microbiome Initiative (HMI) funded by FastForward with colleagues Dr. Young and Tom Schmidt, Ph.D.

I invite you now to read more in depth about our plentiful activities and achievements. As always, if you are in the area, please don’t hesitate to stop by to see all the great things going on in the Department of Microbiology and Immunology at UM’s Medical School.

Go Blue!

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

Michigan Memories

This re-discovered photo of Denise Kirschner, Ph.D., Oveta Fuller, Ph.D., Malini Raghavan, Ph.D., Alice Telesnitsky, Ph.D., Michele Swanson, Ph.D., and Cheong-Hee Chang, Ph.D. has given me an occasion to reflect on one of the highlights of my tenure as Chair of Microbiology & Immunology. When I became Chair in 1993, our faculty was mostly white males, at a time when gender equity was just becoming an important issue. The Associate Dean for Faculty Affairs at the time (Jayne Thorson, Ph.D.) was a strong advocate for diversity and circulated the book Why So Slow by Virginia Valian, documenting the slow pace of women's advancement in academia. The National Science Foundation also was concerned specifically about women in science, and established the ADVANCE grants to address this concern. At UM, Abigail Stewart, Ph.D. took the lead and was successful in securing one of the first NSF ADVANCE awards.

Although there were some who opined that an emphasis on hiring from any “special group” versus “the most qualified candidates” would lower standards, M&I felt differently. We had positions to fill and we addressed this issue with determination to show (a) that it was not an either-or issue and (b) that we could recruit successfully at a time when this increasingly involved couples. With these two principles in mind we made regular progress in recruiting the top candidates from our applicant pools, and many were women.

The hiring committee recognized that in the case of a joint recruitment, a high priority would be to ensure the recruiting package included and was attractive to both individuals. We reasoned that this would promote the well-being of both partners and make for a sound investment on the part of the department. M&I was successful in placing partners by negotiating support from the central administration, sister departments, and regional institutions. Indeed, we were so successful, in comparison with other departments, that we became the “poster department” for Dr. Stewart in her formulation of best practices for the ADVANCE project.

This photo is a special testimony to our success, since each faculty member has stayed at Michigan and advanced through the ranks with a broadening scope of recognition. The reputation of the department also has continued to increase over the years that followed the recruitment of these women. I hope I can be forgiven a bit for the pride I still feel in having been a part of this important advance in the history of our department.

-Michael Savageau
You have probably seen elsewhere the article by Michael Savageau, Ph.D. on the original six hires of female faculty in the Department. Today there are equal numbers of male and female faculty! This is the result of a strong sense of community in the department that has fostered an environment for success for everyone, male and female. The departmental chairs starting with Dr. Savageau, then Mike Imperiale, Ph.D., and for more than a decade, Harry Mobley, Ph.D., have each created an impressive environment for collegiality. Harry continues to be committed to diversity, equity and inclusion in all aspects of departmental life.

Most impressive are the many leadership roles that our women faculty (including original and newer faculty hires since 1997) have now attained both in local and global communities. Several professional organizations are now well represented with leadership posts by women from our department: Michele Swanson, Ph.D. as President-elect of the American Society for Microbiology (ASM), Kathy Spindler, Ph.D. as Secretary-Treasurer of the American Society for Virology, and Denise Kirschner, Ph.D. as President of the Society of Mathematical Biology, and Editor-in-Chief of the Journal of Theoretical Biology. Representing our department and UM at the American Association of Immunology (AAI), Malini Raghavan, Ph.D. is on the AAI Committee for Status of Women, has served as the AAI abstract programming co-chair for antigen processing, and has recently been elected as a New Leadership Academy Fellow. Cheong-Hee Chang, Ph.D. serves as a member of the grant reviewers for the AAI Immunologist Program Committee, Alice Telesnitsky, Ph.D. was awarded a very large grant and now heads the Center for HIV RNA Studies, and Oveta Fuller, Ph.D. received a Fulbright Scholarship for her Global HIV outreach efforts. In addition to her role at ASM, Dr. Swanson serves in the UM Medical School as Director, Office of Postdoctoral Studies.

The accomplishments of our subsequent women faculty hires are equally impressive. Kate Eaton, Ph.D. is the co-editor of the first edition of the book, *Gnotobiotics*, and Mary O’Riordan, Ph.D. is Associate Dean for Graduate and Postdoctoral Studies in the UM Medical School. She has received the Frederick C. Neidhardt Collegiate Professorship, a title that is near and dear to the heart of our Department! Our junior faculty have had outstanding trajectories as well. Among our Associate Professors, Christiane Wobus, Ph.D. was the scientific lead for organizing the joint ASM/ASV Conference on Interplay of Viral and Bacterial Pathogens that was held this May in Bethesda, Maria Sandkvist, Ph.D. has been invited to edit the first ASM book on protein secretion in bacteria, and Yasmina Laouar, Ph.D. has served as a council member of the Autumn Immunology Conference. Our newest female assistant professor, Nicole Kropatkin, Ph.D., has just been elected as Co-Chair of the 2019 Cellulases and Other Carbohydrate-Active Enzymes Gordon Conference, and Co-Chair of the 2021 meeting. She is the youngest woman ever to be elected for this meeting since its founding in 1999! The original commitment of the department to increase diversity by recruiting women has not only paid off in numbers but also in significantly increasing the stature and presence of our department and the University internationally.

-Denise Kirschner
Diversity, Equity and Inclusion (DEI) in M&I

Consistent with the University of Michigan's DEI mission, M&I has launched its own DEI initiatives. A departmental DEI committee was formed to address DEI issues at all levels, and members include representatives from students, postdocs, research and administrative staff, and faculty. Highlights of the year’s activities include:

- 126 members of the department (a large percentage of department members) received unconscious bias training.
- Two grants were funded by the Office of the Provost and by Rackham Graduate School to initiate a career platform, with a focus on bringing underrepresented minority (URM) scientists in diverse career areas to campus for better networking opportunities and role model building for students.
- Better appreciation of the multicultural nature of the department was implemented through relevant celebrations, listings, and related Tea@3 celebrations were organized by different diversity groups (and/or their supporters).
- Better inclusion of student and postdoctoral fellow groups was implemented. Students and postdoctoral fellows recruited other students and postdoctoral fellows to the DEI committee and have led many of the department’s listed DEI activities. These include the preparation of a welcome package for new postdoctoral fellows, better assimilation of masters students in departmental activities, and compilations of mental health resources for students.
- Activities towards recruitment of a diverse student pool were expanded. Many of our faculty and students are continuing to engage in key activities that will help recruit and train a more diverse pool of students.

The DEI committee’s key goal is to have each member of the department engage in at least one activity that will ultimately improve DEI at the University of Michigan. We welcome broad participation from all members of the department.

-Malini Raghavan

Legionnaires’ Disease Exacerbates the Flint Water Crisis

In an effort to reduce costs, in 2014, the City of Flint, Michigan switched its municipal water supply from Lake Huron water treated by the Detroit Water and Sewage Department to Flint River water treated by the Flint Water Service Center. Inexplicably, the utility failed to supplement the water with anti-corrosive ortho-phosphate. Within weeks, problems arose. In addition to its odd color, odor, and taste, the water was linked to rashes on children and later, alarming levels of lead in the blood of pediatric patients. Water main breaks were unusually frequent, and high counts of *E. coli* and other coliforms triggered boil-water advisories. Another more insidious, bacterium also made headlines: during the summers of 2014 and 2015, the City and surrounding Genesee County endured consecutive outbreaks of Legionnaires’ disease. The water-born pathogen *Legionella pneumophila* was linked to 87 cases of pneumonia and 12 deaths. After considerable public outcry triggered by the lead contamination, in Fall of 2015, the City switched back to Lake Huron water treated by Detroit Water and Sewage Department. Gradually, the crisis subsided.

With goals of reducing the threat of Legionnaires’ disease and investigating its connection to the corrosive water distribution system, in Fall of 2016, the Michigan Department of Health and Human Services supported the newly formed Flint Area Community Health and Environment Partnership (FACHEP). To conduct active Legionnaires’ disease surveillance in the community, it was essential that the FACHEP team first establish trust, communication and credibility with residents of Flint and Genesee County. To do so, FACHEP partners built an active program of outreach and community engagement with a broad range of stakeholders representing community residents and community organizations. Working in close coordination with local healthcare providers, community organizations, and government agencies, FACHEP researchers integrated environmental monitoring and water testing with clinical education and population-based epidemiologic surveillance. This multi-disciplinary research consortium includes epidemiologists, infectious disease physicians, social workers, communication specialists, water engineers, and microbiologists. Led by Wayne State University, FACHEP includes faculty from Michigan State University, Kettering University, Colorado State University, Henry Ford Health System, and the University of Michigan College of Engineering and Medical School.
Michele Swanson, Ph.D., a Professor in the Department of Microbiology & Immunology, has lead a research group focused on L. pneumophila pathogenesis for more than 20 years. “Although my entire research portfolio has focused on molecular mechanisms that equip L. pneumophila to infect and spread from one macrophage to another, it has been a privilege for me and veteran staff scientist Brenda Byrne to work closely with the FACHEP research team to try to understand what happened in Flint.” Once the FACHEP team isolates L. pneumophila from the kitchen faucet, shower, or hot water heater of a residence in Flint, Dr. Swanson and her colleagues in Ann Arbor conduct the laboratory work-up. So far, they’ve learned that the predominant type of L. pneumophila in Flint residences are Serogroup 6 strains, which unfortunately are not detected by the widely used diagnostic Urinary Antigen Test. Nevertheless, the most common bacterial Sequence Types FACHEP investigators found in Flint have previously been isolated from patients in Israel, Greece, and Spain. Moreover, in the Swanson laboratory’s tests of virulence, the environmental Serogroup 6 strains of L. pneumophila are indistinguishable from Serogroup 1 strains isolated from patients in Southeast Michigan from 2013 – 2016. “We will add our voice to the international call for better diagnostic tests that can detect disease due to Serogroup 6 and other virulent types of L. pneumophila,” says Dr. Swanson.

To learn more about the FACHEP team’s research, tune into the ASM podcast “This Week in Microbiology” episode #155, where Dr. Swanson and TWiM colleagues discuss the Flint Water Crisis from 2:50 to 23:15 min) or read an article in The Scientist (http://www.the-scientist.com/?articles.view/articleNo/49613/title/Legionnaires--Disease-Bacteria-Found-in-Flint-Residents--Water/) on this research project.

-Michele Swanson

Mary XD O’Riordan named first Frederick C. Neidhardt Collegiate Professor

We are delighted to announce that Mary O’Riordan, Ph.D., has recently been approved by the Regents as the first Frederick C. Neidhardt Collegiate Professor. The Professorship was established by the department and approved at the December 2016 Regent’s meeting. This honor was bestowed upon Dr. O’Riordan by now former Provost Martha Pollack and was supported by Executive Vice President for Medical Affairs and Dean Marshall Runge, in recognition of Dr. O’Riordan's scholarship, mentoring, teaching, and service to the department and medical school, with special emphasis on her role as Associate Dean for Graduate and Postdoctoral Studies. We are all impressed with Dr. O’Riordan’s accomplishments!

Background on Dr. Frederick C. Neidhardt (1931-2016)

Dr. Neidhardt was a towering figure in microbiology who dedicated his career to excellence in science, leadership and service. He served as Chair of the Department of Microbiology & Immunology from 1970-1982 and then served as Associate Dean for Faculty of the Medical School and later as UM’s Vice President of Research. He fostered the recruitment of women and minorities to the faculty and facilitated the development of a mentorship system for junior faculty.

Dr. Neidhardt’s leadership in microbiology has been recognized with numerous awards and honors, including the Eli Lily & Co. Award in Bacteriology and Immunology, the Alexander von Humboldt Senior U.S. Scientist Award from Germany, and election to the presidency of the American Society for Microbiology. The department is proud of Dr. Neidhardt’s contributions and pleased that his legacy here will continue.

-Sheryl Smith
Bethany B. Moore named first Galen B. Toews Collegiate Professor

The department is very pleased to announce that Bethany B. Moore, Ph.D. was installed as the first Galen B. Toews, M.D. Collegiate Professor of Pulmonary and Critical Care Medicine on March 8, 2017. This is a particularly great honor since Dr. Toews was Dr. Moore’s mentor for over 12 years. Dr. Moore is Professor of Internal Medicine, Division of Pulmonary and Critical Care Medicine, Professor of Microbiology & Immunology, and Director of the Graduate Program in Immunology at the University of Michigan.

Dr. Moore has had continuous NIH grant funding as a Principal Investigator since 1998. Early in her career, she received a Young Investigator Award from the Central Society for Clinical Research and a Career Development Award from the American Lung Association of Michigan. In 2011, the University of Texas Southwestern Medical Center Immunology Program honored Dr. Moore with its Distinguished Alumnus Award. In 2014, she received a Recognition Award for Scientific Accomplishment from the American Thoracic Society and was inducted that same year into the University of Michigan’s League of Research Excellence. She has also held numerous leadership positions with The American Thoracic Society. She has served as Web Director and Chair of The Assembly on Allergy, Immunology and Inflammation (AII) Membership, as well as on Long Range Planning and Program Committees. She is presently chair-elect of the AII Assembly. At the UM, Dr. Moore has chaired the Biomedical Research Council and the University Committee on the Use and Care of Animals.

Congratulations to Dr. Moore on this well-deserved honor!

Background on Dr. Galen B. Toews (1945 – 2011)
Dr. Toews was a Professor of Internal Medicine and Chief of the Division of Pulmonary and Critical Care Medicine at UM for nearly 25 years. Dr. Toews made innumerable contributions to pulmonary medicine through his passion, professionalism, and dignity that resulted in the UM Pulmonary Division being ranked one of the highest in the United States. He was a dedicated clinician and an innovative mentor who trained more than thirty post-doctoral fellows. Dr. Toews’ contributions to research, education, clinical care, and service, were recognized by awards such as the Paul De Kruif Lifetime Achievement Award from the UM Department of Internal Medicine, the Michigan Thoracic Society’s Bruce H. Douglas Award for pulmonary medicine, and the Distinguished Achievement Award from the American Thoracic Society.

- Sheryl Smith

Vincent B. Young named William Henry Fitzbutler Collegiate Professor

We are delighted to announce that Vincent B. Young, M.D./Ph.D. was named by the Regents as the William Henry Fitzbutler Collegiate Professor of Internal Medicine, effective February 1, 2017.

Dr. Young’s research focuses on understanding the role of the bacterial communities that normally inhabit the human body and how they influence the health status of the host. He has led a number of research projects conducted by interdisciplinary groups of scientists, and this team science approach to complex problems concerning the microbiome has been funded by a series of large grants from the NIH. He is a standing member of the NIH gastrointestinal mucosal pathobiology study section and serves on a committee for the Infectious Disease Society of America. Dr. Young is a co-director of the UM Medical School Fast Forward Host Microbiome Initiative. Dr. Young is an extremely successful researcher in the field of translational microbiology, and is a very deserving candidate for this professorship!

Background on the William Henry Fitzbutler, M.D. Professorship
The Henry Fitzbutler Collegiate Professorship in Internal Medicine was established in 2015 through a generous gift from the
Genzyme Corporation to support the research and clinical efforts of a faculty member in the Department of Internal Medicine. This professorship honors one of UM Medical School’s most distinguished alumni – an exceptional educator, humanitarian and physician who fervently sought to improve the health of African Americans. Dr. Fitzbutler was born on December 22, 1842 in Virginia. The son of a slave, he and his family fled to Amherstburg in Essex County, Canada, via the Underground Railroad. He graduated from Detroit Medical College in 1869 prior to graduating from UMMS in 1872. He was the first African-American to graduate from either of these prestigious institutions. Following graduation, Dr. Fitzbutler and his family moved to Louisville, Kentucky. An outspoken critic of racial discrimination, he successfully lobbied the Kentucky Legislature to allow the establishment of a medical school that could not exclude applicants because of color. He ultimately founded and became dean of the resulting Louisville National Medical College and Hospital for more than two decades. The hospital was recognized as one of the best run hospitals in the country. Although the Louisville National Medical College closed in 1912, Dr. Fitzbutler’s impact on our medical community continues to this day. Our medical students honored him in 2016 by naming one of the houses in the M-Home learning community the Dr. William Henry Fitzbutler House.

—Sheryl Smith

Faculty Promotions, Honors and Awards

Basel Abuaita - AAI Young Investigator Award at Autumn Immunology Conference
Chelsie Armbruster - accepted a position as an Assistant Professor at State University of New York at Buffalo Medical School in the Microbiology and Immunology Department, starting November 2017
Suzanne R Dawid - promoted to Associate Professor, with Tenure, in the Department of Pediatrics and Infectious Diseases and in M&I
Kate Eaton - Co-editor of “Gnotobiotics” with Trenton Schoeb, first edition from Associated Press
Denise Kirschner - manuscript won Best Paper of the Year in the journal Bulletin on Mathematical Biology
Philip E Lapinski - promoted to Assistant Research Scientist
Adam Lauring - received Burroughs Wellcome Fund Investigators in the Pathogenesis of Infectious Diseases award
Gary D. Luker - promoted to Professor, with Tenure, in the Department of Radiology and in M&I
Beth Moore - named the inaugural Galen B. Toews Collegiate Chair of Internal Medicine, named Chair of the Allergy, Immunology and Inflammation Section of the American Thoracic Society
Akira Ono - received the MERIT award from NIAID/NIH
Pat Schloss - Promoted to Professor, named Chair of the ASM Journals Board
Kathy Spindler - Yale Poynter Journalism Fellow, 2017; Appointed Secretary-Treasurer, American Society for Virology

Postdoctoral News

The mission of the Microbiology & Immunology Postdoctoral Association (MIPDA) is to provide M&I postdocs a platform to discuss career-related opportunities, to network with each other and exchange information, and to represent 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 Laura Mike, Ph.D. (Mobley lab), sharing leadership of the group with other active postdoctoral fellows: Kaitlin Flynn, Ph.D. (Schloss lab) was liaison to and co-president of the UM Postdoctoral Association, Marc Sze, Ph.D. (Schloss lab) drafted meeting summaries, and Winnie Wholey, Ph.D. (Dawid lab) organized catering. We used our monthly meetings to enhance the career development of our trainees. Some of the topics included how to prepare a teaching statement (Nicole Tuttle, Ph.D., Center for Research on Learning and Teaching); careers in industry (Scott Berger, Ph.D., Glaxo-Smith Kline); postdoc committees (Michele Swanson, Ph.D., UM Postdoctoral Association); resources for improving diversity, equity and inclusion (Clarissa Love, Ph.D., Office of Health Equity and Inclusion); and opportunities in tech transfer (Anne Juggernauth, Ph.D., Office of Technology Transfer). The MIPDA also sponsored a happy hour over the summer to promote informal networking.
The MIPDA was honored to host two Postdoc Invited Speakers for the 2016-17 seminar series: Lauren Bakaletz, Ph.D., Director of the Center for Microbial Pathogenesis and Vice President of the Research Institute at Nationwide Children's Hospital, and Dana Philpott, Ph.D., an Associate Professor in the Department of Immunology at the University of Toronto. Postdocs met individually with these amazing researchers to discuss research interests and career paths, receive advice on a range of professional development topics, and gain valuable insight into the challenges and rewards of a career at the NIH compared to academia.

M&I postdocs continue to perform high quality research, publishing high-impact articles in *Journal of Biological Chemistry, PLoS Neglected Tropical Diseases, Infection and Immunity, Journal of American Geriatrics Society, PLoS Pathogens,* and *PNAS.* Postdocs also gave both oral and poster presentations at national and international conferences. Our group was well represented at American Society for Microbiology (ASM) Microbe 2017. M&I postdocs also presented their research at the Functional Genomics of Emerging Multi-drug Resistant Gram-negative Pathogens Workshop, the 11th International Symposium on the Biology of Acinetobacter, the Gordon Research Conference (GRC) on Cellulases and Other Carbohydrate-Active Enzymes, Geriatrics Center Research Symposium, Claude D. Pepper Older Americans Independence Centers Annual Meeting, IDWeek, the GRC on Animal-Microbe Symbioses, ClostPath, British Society of Parasitology and Royal Chemistry Society joint meeting on drug discovery, American Society of Tropical Medicine and Hygiene, the GRC on Natural Products and Bioactive Molecules, and the American Urological Association General Meeting. Several postdocs were awarded competitive travel grants to attend these conferences. Dr. Sze and Sébastien Crépin, Ph.D. (Mobley lab) were supported by the departmental Postdoctoral Travel Award and ASM Postdoctoral Travel Award, respectively. Marc Sze was an invited speaker at the University of British Columbia's Brain Center Microbiome Seminar series, and Rebecca Pollet, Ph.D. (Koropatkin lab) received a Best Poster Award at the GRC on Cellulases and Other Carbohydrate-Active Enzymes.

In addition to communicating our research at conferences, many M&I postdocs received prestigious grants, fellowships, and awards this past year. Chelsie Armbruster, Ph.D. (Mobley lab) was approved to move into the R00 phase of her NIH K99/R00 Pathway to Independence award. Dr. Sze was awarded a Canadian Institutes of Health Research fellowship and the Postdoctoral Translational Scholarship Program (PTSP) fellowship from MICHR. Dr. Mike received a Kickstart Award from the University of Michigan's Fast Forward Medical Innovation's MTRAC for Life Sciences Innovation Hub as well as an Outstanding Postdoctoral Fellow Award from the University of Michigan Postdoc Association for contributions in the areas of research, teaching, mentoring, service, and leadership. Jacqueline Esquiaqui, Ph.D. (Telesnitsky Lab) and Kayla Peck, Ph.D. (Lauring lab) were awarded F32 training grants from the Molecular Mechanisms of Microbial Pathogenesis program.

Several M&I postdocs were promoted during 2017 or accepted new positions. Geoffrey Hannigan, Ph.D. (Schloss lab) has taken a position as a Bioinformatics Scientist at Merck. Darrell Cockburn, Ph.D. (Koropatkin lab) started a new position as an Assistant Professor of Food Science at Pennsylvania State University in July. Anna Seekatz, Ph.D. was promoted to Research Investigator in the Division of Infectious Disease of the Department of Internal Medicine. Dr. Crépin was promoted to Research Investigator in the Microbiology & Immunology Department.

We would like to 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 would also like to thank all of the office staff members for their support and assistance.

-Laura Mike
The Organization for Microbiology & Immunology Students (OMIS) is a student-led organization that provides an avenue for graduate student collaboration and communication within M&I. Additionally, OMIS is a great resource for providing feedback between faculty and students. The OMIS president attends monthly faculty meetings and is given an opportunity to present student interests and concerns. For 2017 our OMIS officers are: **Travis Kochan**, President; **Danelle Weakland**, Social Chair; **Allison Dupzyk** and **Robert Glowacki**, PIBS Recruiting Coordinators; **Sukhmani Bedi** and **Megan Procario**, Student-invited Speaker Coordinators; **Ada Hagan**, Press Coordinator; and **Chris Sumner**, Department Photographer. OMIS officers have also served on the department's Committee for Diversity, Equity, and Inclusion. Based on recommendations from the DEI committee, OMIS is creating a new position specifically to facilitate inclusion of Masters students in departmental activities and provide an avenue for them to present any issues or concerns.

UM M&I has a 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 first year fellowships to **Nick Lesniak**, **Stephanie Theide**, **Anna-Lisa Lawrence**, and **Yolanda Rivera-Cuevas**. **Charles Wang** also received a second year of funding. The Cellular Biotechnology Training program awarded funding to **Danelle Weakland** and renewed funding for **Zachary Mendel**. The interdisciplinary Genetics Training Program awarded renewed funding for **Katie Brennan**. **Shawn Hawken** received renewed funding from the Training Program in Translational Research, and **David Lin** was awarded funding from the Training in Basic and Translational Digestive Sciences Training Program. We also had many students receive funding from Rackham: **JT McCrone** received a Rackham Predoctoral Fellowship, **Edmond Atindaana** received the Rackham International Conference travel grant, and **Jess Millar** received the Rackham Merit Fellowship and Bernard Maas Fellowship.

Graduate students also received funding and awards from outside the university. **Travis Kochan** received a second year of funding as a Ruth Kirschstein NRSA Fellow and was also selected to give talks at the ASM Branch meeting this spring and the International Clostridium pathogenesis meeting Clostpath. **Ada Hagan** was awarded best poster presentation at the ASM Branch meeting this spring. **Matt Foley** was selected to give a talk at the Gordon Research Conference about Cellulases and Other Carbohydrate-Modifying Enzymes. **Edmond Atindaana** was selected to give talks at both the Cold Spring Harbor Meeting on Retroviruses and the West Africa Center for Cellular Molecular Biology of Infectious Diseases Annual Conference. Both **Allison Dupzyk** and **David Lin** gave talks at The American Society for Virology annual meeting. **Robert Glowacki** was selected to present for the Hot Papers Journal Club at ASM/Microbe this year and also won best oral presentation at the ASM Branch meeting this fall.

- **Travis Kochan**

Ph.D. Defenses –November 2016 through October 2017


**Ursula Waack** - “The type II secretion system in *Acinetobacter baumannii*: Its role in pathogenesis and translational implications.” March 24, 2017. Mentor: Maria Sandkvist

**Jhansi Leslie** - “Identifying factors that protect the host from *Clostridium difficile* infection.” June 21, 2017. Mentor: Vince Young

**Matthew Jenior** - “Nutrient niche space of *Clostridium difficile* across susceptible microbiomes and the impact of infection on metabolism of the murine cecal microbiota.” July 14, 2017. Mentor: Pat Schloss
MiSciWriters: Trainees Improving Their Science Communication

Can you remember what happened when on holidays, your family asked about your research? Seeing their interest, you probably started enthusiastically describing your research model and experiments. A conversation that started with nods and smiles would usually end with blank stares and a statement “oh, that’s nice,” right? Eventually, they would skip the tutorial and simply ask when you were going to graduate.

During graduate training in M&I, students learn how to communicate their science with other researchers through department seminars, poster presentations, and writing journal articles. But when do they learn how to talk about their research with friends or family who aren’t inculcated with microbiology jargon? That’s where the student group MiSciWriters comes in. Founded in the fall of 2015, MiSciWriters’ (MSW) mission is to help University of Michigan trainees translate their research into compelling stories and language that will engage their friends and family.

The MSW graduate student blog was co-founded by a Ph.D. candidate in the M&I Department, Ada Hagan. She and her fellow co-founder, Bryan Moyers, identified three other UM graduate students, Irene Park, Kevin Boehnke, and Alisha John, to help run the group. Together, they recruited graduate students from programs across campus interested in learning how to better communicate their science through writing.

Since the inaugural post on Tuesday, September 9th, 2015 at 9:00 a.m., MSW has posted more than 95 blog posts that have been viewed by more than 14,000 readers from 104 countries. As part of their mission to make academic research more accessible, MSW has live-blogged campus meetings and begun translating popular posts into Spanish. In addition to blogging and guiding trainees through a rigorous writing and editing process, MSW members meet monthly to discuss popular science articles in a journal club fashion.

Most of the founding members were from the Program in Biomedical Sciences. In order to reach a wider group of scientists and budding science writers across campus, MSW applied for status as a Rackham Interdisciplinary Workshop (RIW). RIW status includes up to $5,000 in funding, which MSW has used to host a science writing career panel, the popular science writer Sam Kean, and editing workshops.

Thanks to the diversity of contributing writers, blog posts on MSW have discussed topics including exercise science, GMOs, cephalopods, bacteriophage, and solar energy storage. MSW also ran a popular series called “Science Behind the Scenes,” which discussed the benefits of basic research, the p-value, and correlation versus causation in approachable terms. So, surprise friends and family at your next gathering with engaging science stories from www.MiSciWriters.com. You can also follow and share MSW’s latest posts on Twitter (@MiSciWriters) and on Facebook.

-Ada Hagan

Total Solar Eclipse 2017
Welcome Doctoral Student Class of 2016!

Edmond Atindaana, B.Sc in Biochemistry, University for Development Studies, Ghana and M. Phil Molecular Cell Biology of Infectious Diseases, University of Ghana (Telesnitsky lab)
Austin Campbell, B.S. in Molecular, Cellular and Developmental Biology, Yale University (Schmidt lab)
Anna-Lisa Lawrence, B.S. in Cell and Molecular Biology, University of Michigan (O’Riordan lab)
Yolanda Rivera-Cuevas, B.S. in Molecular Cell Biology, University of Puerto Rico in Rio Piedras (Carruthers lab)
Matthew Schnizlein, B.S. in Biological Sciences, Northern Illinois University (Young lab)
Stephanie Thiede, B.S. in Biomedical Engineering, Purdue University (Snitkin lab)

Welcome Master’s Student Class of 2017!

Kelsey Stark, B.S. in Biology, Doane University
Michelle Azar, B.S., University of Michigan, Ann Arbor
Tiantai Ma, B.S. in Biological Science, Shandong University, P.R.China
Harihar Mohan, B.Tech. in Biotechnology with Honors, SASTRA University, India

Undergraduate and Beyond

The annual undergraduate research symposium showcases the hard work of students pursuing independent research projects in M&I labs. Students present a ten-minute talk about the goals and major findings from their work. For many students, this is their first experience with communicating research, and it is an important “rite of passage” in their scientific career. This year we had three UM undergraduates and one high school student present their work: Michelle Shoshiev (UM, Phil Hanna lab), Sarah McColm (UM, Michele Swanson lab), Jarret Reichel (UM, Mike Imperiale lab), and Katie Sesi (Huron High School, Joel Swanson lab). While each delivered an outstanding talk, department judges Eric Martens, Ph.D. and Chris Alteri, Ph.D. awarded Michelle Shoshiev the title of Best Presentation for her seminar, “Chemical Inhibitors of Clostridium difficile Spore Germination.” Michelle also received a $100 cash prize supported by the Department of Microbiology & Immunology Research Alternatives and Opportunities fund initiated by Alice Telesnitsky, Ph.D.

-Nicole Koropatkin
Upward Bound Program

As part of our outreach activities, this summer, the Microbiology and Immunology department hosted a group of high school students from the Upward Bound Summer Program at Wayne Memorial High School. The students were introduced to a career in scientific research by visiting different laboratories from our faculty. On July 13, the students visited the Koropatk-in and O’Riordan labs and a second group visited the Carruthers and Imperiale labs on July 27. Each laboratory prepared interactive activities to teach the students about their research and have them experience what it is like to work in a research laboratory. For example, the Imperiale lab had the students prepare and run a DNA agarose gel, while the Carruthers lab simulated a *Toxoplasma gondii* outbreak scenario and had the students determine who was and was not infected with the parasite by an ELISA assay.

-Yolanda Rivera-Cuevas

Alumni

Development Committee and Nancy Walls Professorship

Did you know that M&I has a Development Committee that fosters outreach to departmental alumni and assists in handling philanthropic contributions to the department? Working with Chrissy Barua, Associate Director for the Endowment for the Basic Sciences, and Sheryl Smith, Administrative Specialist, committee members Michele Swanson, Ph.D., Vern Carruthers, Ph.D., and Harry Mobley, Ph.D. help plan opportunities for alumni to reconnect at events throughout the country, consider how to stay connected with our former trainees, and discuss how best to utilize donations aimed at strengthening the training, research, and educational missions of the department. A recent exciting project for the committee has been to help broker an exceptionally generous bequest from Nancy W. Walls, Ph.D. who earned both a master’s and doctoral degree in the Department. Dr. Walls later embarked on a successful, dynamic, and adventurous career as an environmental microbiologist at Georgia Tech University. An experimental scientist, she traveled to every continent, including Antarctica where Dr. Walls collected microbes from the ocean floor. Among many other remarkable accomplishments, Dr. Walls was the first woman to chair a department at Georgia Tech. Throughout her career, Dr. Walls broke through glass ceilings and strongly supported other women in their science careers. Dr. Walls’ donation will support a new Endowed Full Professorship in the department named in her honor. Candidates for the Nancy W. Walls Professor of Microbiology and Immunology will be visiting the department in Fall 2017, and the Professorship will likely be awarded in 2018.

If you’d like to help strengthen M&I alumni networking or research and training in Microbiology & Immunology, please contact Sheryl Smith at sherylhs@med.umich.edu.

-Vern Carruthers

Alumni Updates

Lei Fang (Ph.D. 2004 [UGA Genetics], Spindler) is Senior Director, Product Development and Operation, Predicine (Hayward, CA).

Lisa Gralinski (Ph.D. 2008, Spindler) was promoted to Research Assistant Professor, Department of Epidemiology, University of North Carolina, Chapel Hill.

Miranda Gray (Ph.D. 2011, Sandkvist) joined Faculty 1000 as an Outreach Manager.

Ian Hogue (Ph.D. 2010, Ono) is an Assistant Professor in the Bodesign Center for Immunotherapy, Vaccines and Virotherapy and the School of Life Sciences at Arizona State University.

Matthew Jenior (Ph.D. 2017, Schloss) is a postdoctoral fellow in Biomedical Engineering at the University of Virginia, Charlottesville.

Jhansi Leslie (Ph.D. 2017, Young) is a postdoctoral fellow in the Division of Infectious Diseases and International Health at the University of Virginia, Charlottesville.
Martin Moore (Ph.D. 2003 [UGA Genetics], Spindler) continues as an Associate Professor of Pediatric Infectious Disease at Emory University. He is the CEO of Meissa Vaccines, which has received seed investment funding from FundRx.

Matt D. Pauly (Ph.D. 2016, Lauring) is a postdoctoral fellow in the laboratory of Rachel Whitaker at the University of Illinois studying the viruses of archaea species.

Elsje Pienaar (Postdoc, Kirschner) was promoted to Research Scientist and is now in a tenure track position in the department of Biomedical Engineering at Purdue.

Aleksandra Sikora (Postdoc, Sandkvist) was promoted to Associate Professor at Oregon State University.

Ursula Waack (Ph.D. 2017, Sandkvist) joined the lab of Tracy Nicholson at USDA, Iowa, for her postdoctoral studies.

Hayley Warsinske (Ph.D. 2017, Kirschner) is a postdoctoral fellow in the department of Immunology at Stanford.

Sanjeeva Wijeyesakere (Postdoc, Raghavan) obtained a position at Dow Chemicals in Midland MI.

Harry Zhen (Undergraduate, Sandkvist) joined the Masters Program in the School of Public Health at UM.

Seminars

Brockman Lecture

The Brockman lecture series was established in 1984 in honor of William Brockman, Ph.D. Dr. Brockman was a professor in the M&I department from 1976-1984, and was a pioneer in virus biology. An individual with an outstanding contribution to the field of virology is selected annually to present a seminar and this year, Rozanne Sandri-Goldin, Ph.D., was the Brockman Lecturer. Dr. Sandri-Goldin is a professor and chair in the Microbiology and Molecular Genetics department in the School of Medicine at the University of California, Irvine. In her seminar entitled “Structural and functional analysis of ICP27, a multifunctional herpesvirus protein”, Dr. Sandri-Goldin described the structural analysis of ICP27 and the generation of targeted mutations to determine the structure-function of the ICP27 interactions.

Heritage Lecture

The Heritage Lecture is given annually and recognizes the outstanding achievements of former trainees (students and postdocs). It is an opportunity for them to reconnect with members of the department as well as give current students and postdoctoral fellows a chance to interact with alumni who have achieved success in their career paths. This year’s lecture was given by Aleksandra Sikora, Ph.D., who was a postdoctoral fellow in Maria Sandkvist’s laboratory. Aleksandra joined the Oregon State University College of Pharmacy in 2011, where she is now an Associate Professor. She has been incredibly productive since starting her lab, publishing nine senior author papers along with several reviews. In her seminar entitled “Targeting the ticking time bomb: antibiotic-resistant Neisseria gonorrhoeae”, she described some of the research that she and her lab members have been doing using two model organisms, Vibrio cholerae and Neisseria gonorrhoeae.

-Mae Huynh

Willison Lectureship

The Microbiology and Immunology Department Willison Lectureship was established in 1988 by former M&I doctoral trainee, Frances Willison Bishop, Ph.D. in honor of her parents. On behalf of M&I, Cheong-Hee Chang, Ph.D. hosted Diane Mathis, Ph.D. as the 2017 Willison Lectureship on March 23rd. Dr. Mathis is a faculty member in the Harvard Medical School’s Division of Immunology in the Department of Microbiology and Immunology. Her lecture was entitled “Immunological control of non-immunological processes” in which she described her work involving T-cells.

On October 5th, Nicole Koropatkin, Ph.D hosted Ajit Varki, M.D., Distinguished Professor of Medicine and Cellular & Molecular Medicine at the University of California, San Diego for the second Willison Lecture of 2017. Dr. Varki’s talk was entitled, “Multifarious Roles of Sialic Acids in Many Human Infectious Diseases.”

-Ada Hagan
Donations and Gifts

The Department of Microbiology gratefully acknowledges the generosity of donors to the Department in 2016-2017. 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/#/med/med/microbio

We especially encourage you to consider making a donation on GIVING BLUEDAY, Tuesday, November 28, 2017. It’s your day to be a Victor for Microbiology & Immunology!

http://givingblueday.org/

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