Check out the latest updates from the UMB Microbiology and Immunology Community! Winter 2016 Edition.

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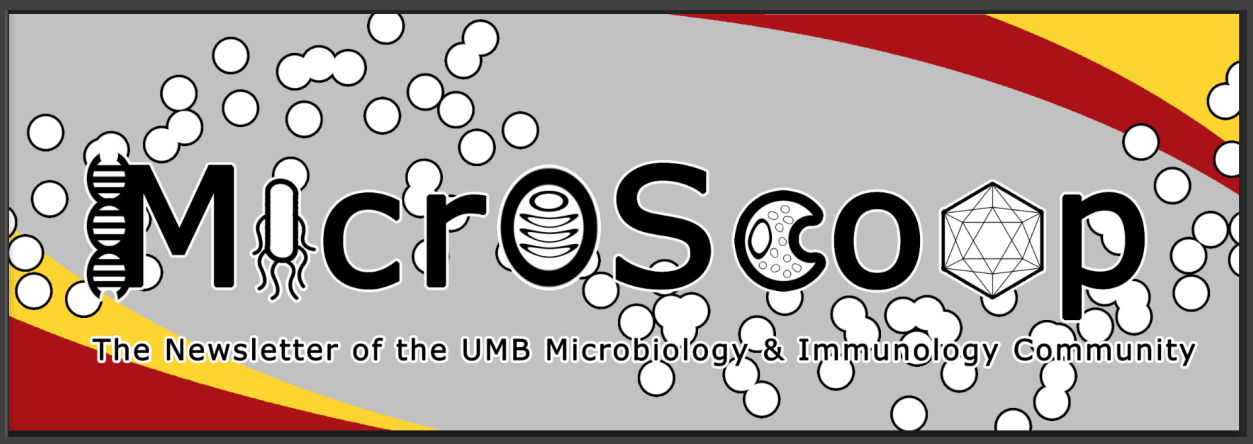

Welcome to the newest edition of the Microscoop!

***PLEASE NOTE:**

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In This Issue:

We hope you enjoy the new format of the Microscoop!

We must send a big THANK YOU to our very own MMI PhD Student, Eric Kong, for his excellent graphic design skills in making our NEW Microscoop Banner!

Please let us know if there were any technical difficulties and tell us how you like this new format!

Please send all comments/questions to: stephanie.lehman@umaryland.edu

Getting to know new faculty member Dr. William Jackson

by Kyle Tretina

- Where are you from?

I grew up in western New England, just outside of Springfield, MA, birthplace of the Springfield Rifle and the Basketball Hall of Fame.

- Please give an outline of your educational background.

I was an undergraduate at MIT, where I did my undergrad research with Dr. Rick Young on projects involving both yeast transcription and dimerization of the HIV Gag protein. I went to UC Berkeley for my PhD, where I worked on cell cycle-dependent transcriptional control in yeast with Dr. Steve Martin. I moved on to do a postdoctoral fellowship at the Stanford School of Medicine with Dr. Karla Kirkegaard, where I began my work on picornaviruses and the cellular responses they induce, including autophagy.

- What attracted you to this department at UMB?

I knew Matt Frieman from his work and had met him at virology meetings. Somewhat incidentally, he is a fellow twitter-addicted virologist. Of course I knew the Institute for Human Virology, and I was familiar with the work the Institute for Genome Sciences had done in sequencing human rhinovirus in conjuction with my fellow (at the time) Wisconsinite Ann Palmenberg. When I saw the job opening posted I applied almost immediately, after asking around about the department as a whole and hearing only great things from everyone I asked. The resources available at UMB are really unparalleled, from the outstanding faculty in the Center for Vaccine Development, to departmental and interdepartmental colleagues with expertise in immunology, bacteriology, and cell biology, to the tremendous core facilities. The opportunity to get back to the east coast was a bonus, and my family and I are already enjoying the variety of recreational opportunities around Baltimore/DC.

- Please summarize your current research in three sentences or less.

We use culture cells to probe the infectious cycle of simple human viruses, and, conversely, we use these viruses to understand basic processes in cell biology. Our favorite viruses, poliovirus and rhinovirus, encode very few proteins, yet they induce massive changes in the cell, from a near-complete inhibition of transcription, translation, and classical secretion, to a striking physical rearrangement of intracellular membranes into a series of vesicles, tubes, and double-membraned autophagosomes. We study how these changes promote virus replication and how the virus interacts with the host cell to dramatically remodel it into a virus factory.

- What is your favorite place to eat in the area?

My family and I have eaten at the White Oak Tavern in Ellicott City quite a bit, they have excellent farm-to-table food and a huge beer list. We have also become addicted to Bonchon Chicken in Ellicott City. It's near our home (maybe too near) and just amazing- it's best when it's fresh, but that's not a problem because there are almost never leftovers.

- Are you looking for graduate students to rotate in your lab?

Yes. I'm happy to talk to anyone who is interested about potential projects!

-What do you like to do outside of the lab?

Mostly spending time with my kids. My 4-year old, Cora, never tires of hitting a baseball off the tee or doing art projects, and my 10-year-old, Ian, likes basketball and our weekly viewings of Doctor Who. I'm a fan of Japanese *daikaiju* (giant monster) movies: I have seen every Godzilla movie ever made (30 and counting) and have most of them at home for essential repeat viewings. Of course, if the Patriots are playing you'll find me in front of a TV cheering them on, when I can't be at the stadium myself.

Annual Welcome Picnic

By Susannah Shissler

This year's 15th annual picnic welcomed the incoming students and new faculty into our community. The Patapsco State Park easily accommodated our group with a large pavilion and lots of open green space for games. Food and drink was overly abundant and delicious as always. Students, faculty and staff brought side dishes and desserts, and the MMI Graduate Program and the Departments of Microbiology & Immunology SOM and Microbial Pathogenesis SOD sponsored main dishes and drinks. Directly following lunch, most of the attendees sat around catching up with each other or playing relaxed games like corn hole and Frisbee. After some time to recover from their overindulgence, some participants played a spirited but friendly game of kickball with the winning team inching to gold by one point. Overall, another successful start to the school year!

MMI Student Alison Scott wins the newly named James Kaper Award:

The James Kaper (formerly Ollie Eylar) award is presented annually to an MMI senior or recently graduated student who has made both outstanding academic achievements and has contributed significantly to the program and their peers. The winner is selected by a committee of leadership members of the program. To be considered, students must have published at least one first author peer-reviewed research paper and presented their work at a national or international conference.

This past June at the annual Graduate Student Symposium, Alison Scott, a recently graduate MMI student from the lab of Dr. Bob Ernst, was presented with this year's award. Due to renaming of this achievement from the Ollie Eylar, award, Alison Scott becomes the first recipient of the newly named James Kaper award. As a great honor and admirable achievement for an MMI student, we asked Alison to share her thoughts on receiving the award.

Q: *In your opinion, what does this award mean as an MMI student?*
A: I am honored to be awarded the first annual James Kaper Award for Graduate Studies given by the Department of Microbiology & Immunology. Dr. Kaper's generous endowment of this new award is inspiring and illustrates his dedication to students training in Microbiology & Immunology, now and for years to come. The MMI program has a reputation for training strong, talented, and engaged students; to be honored among my respected peers made this award very special.

Q: *What other accolades and accomplishments have you received prior to the James Kaper award?*
A: I was lucky that the technology driving my project allowed me to work with so many different people in the UM community, across campuses and schools, leading to a number of unique invitations and awards. Clearly I am biased, but I cannot image a more supportive and enthusiastic group as the faculty of the Departments of Microbiology & Immunology (SOM) and Microbial Pathogenesis (SOD). They helped guide and challenge me along the way and I am grateful for their support.

Q: *What words do you have for current MMI students and future award winners?*
A: The future is bright for MMI! There are so many talented students, I look forward to meeting the next winner of the James Kaper Award.

ASM New Orleans 2015:

"The Maryland-Michigan Party"

By Stephanie Lehman

It all started in the 80's. Harry Mobley and Jim Kaper shared the cost of a room at the meeting of the American Society for Microbiology and invited a few friends over for drinks and networking after the conference.

Can you find Dr. Shirtliff...?

This gradually became a tradition, even when Dr. Mobley moved to the University of Michigan. It was soon known as "The Maryland-Michigan Party." The number of friends invited grew and grew, until finally they had to book a block of rooms and a dining hall at a hotel for everyone to be together.

This year's ASM Maryland-Michigan Party was the biggest event yet. Held at the Hotel St. Marie in New Orleans, the number of attendees reached over 80 people, all hailing from universities across the country. UMB's Grace Maldarelli, Jane Wilhelm, and Mark Shirtliff were there, as well as former UMB trainees Tim McDaniel, Nate Archer, Anna Seekatz and Alfredo Torres. Other universities represented included Northwestern, Harvard, University of North Carolina, University of Washington, University of North Carolina Chapel Hill and Charlotte, Michigan State, University of Illinois, University of Texas Medical Branch.

The Maryland-Michigan party is fast becoming the best reason to stay for the last day of the conference!

Graduated Students

By Eric Kong

This year's graduates are: Kyle Wilson, Grace Maldarelli, Hal Neely, and Becca Pelc.

Kyle Wilson succeeded in defending his thesis: "NK1.1+B220+ Cell Depletion Enhances the Rejection of Established Melanoma by TAA-Specific CD4+ T Cells". He completed his dissertation research in the lab of Dr. Paul Antony and was a recipient of the departmental NIH T32 training grant. Currently Kyle, as an M.D./Ph.D. student, is continuing his academic career and is currently in his third year of medical school, on track to finish in June of 2017. To new and current students, Kyle shares his own bit of advice: *"Forgive the cliche, but success in this career is more about who you know than what you know. With that in mind, never skip happy hour, stay as involved as possible with the rest of the department. Go to speaker lunches, organize journal clubs, and try to attend at least one meeting every year. You never know which of these relationships you will be able to make use of later on. That may sound utilitarian, but others will corroborate: We lean on our friends from graduate school to help launch our careers."*

Grace Maldarelli successfully defended her thesis: "Function of PilJ in the *Clostridium difficile* Type IV Pilus". Having completed her dissertation research in the lab of Dr. Michael Donnenberg, Grace was supported by an F30 fellowship from the NIDDK. As an M.D./Ph.D. student, Grace has returned to the medical school portion of her career and is currently in her third year. She is set to to graduate with her medical degree in Spring of 2017 and will then proceed to start her residency. For the benefit of new and current students, Grace imparts her wisdom: *"Try lots of different experiments, collaborate with different labs, do lots of writing, learn when to say no, find a friend to bounce crazy ideas off of, coffee is your best friend. Good luck!"*

Hal Neely has successfully defended his thesis: "Ontogeny and Phylogeny of the Splenic White Pulp". His dissertation research was completed in the lab of Dr. Martin Flajnik and was supported by NIH T32 training grant in Infection and Immunity. Moving forward, Hal is set to further his education and training through a post-doctoral appointment in the lab of Ulrich von Andrian at Harvard University.

Rebecca Pelc succeeded in defending her thesis: "Barriers to Infection: Tick Immune Effectors and Vectored Bacteria". She completed her dissertation research in the lab of Dr. Shane Ceraul and during her time here she was also a recipient of an American Society for Rickettsiology travel award. Going forth, Becca will be working as a contractor at the NIH on their Phase 2 Chikungunya Virus vaccine trial. And to current students, Becca offers her own advice: *"Exercise is a great stress reliever!"*

Departmental O's Game

By Susannah Shissler

There were a few memorable experiences at **Orioles vs. Mariners game on Thursday, May 21st, 2015,** but the Grand Slam was the most defining. On this dreary Thursday, the MMI department trekked over to Camden Yards. Despite the threatening skies, there was a wonderful turn out of faculty, students and staff.

The game started out with an extraordinary occurrence. In the very first inning, Steve Pearce pulled off a career first Grand Slam, rocketing the O's into a 4 point lead. For the next 2 innings, the O's held their ground, only conceding 1 point to the Mariners. Unfortunately, at this point the rain decided it could wait no more.

Having experienced the food and drinks of the stadium, most of the audience, including the MMI department, left for the warmth of lab (or maybe home and possibly a satisfying afternoon nap)...

The rain delay lasted slightly over 2 hours. Upon restarting, the Mariners came out swinging and quickly tied up the score. Fortunately, in the top of the 8th inning, the O's pulled off one more run, taking them into the lead and to **victory**!!

New GPILS Podcast for Students and Post-docs – Beyond the Abstract!

By Kyle Tretina

Beyond the Abstract is a new podcast for students/post-doctoral trainees meant to create collaboration, spread new ideas, form connections between departments, and just enjoy science. Whether you're a graduate student, Professor, technician, lab manager, post-doc, collaborator, science enthusiast, the proud momma of a student, or anywhere in between, if you want to know about the scientific research going on at the University of Maryland, Baltimore, we hope that this is a resource for you to do so. So far we have explored the research of several students on campus, including students in the MMI program and soon to include at least one Nobel Prize winner!

This is a great way to publicize your lab and your work to help you one day get your next job, so if you want to be interviewed, help out with the podcast or have a suggestion for an interviewee, please email KTretina@som.umaryland.edu with suggestions. Episodes are typically 15-30 minutes long and can be done individually or in a small group.

You can find the podcast at this link: http://lifesciences.umaryland.edu/Podcasts/. We hope to hear from you soon!

– The Beyond the Abstract Team.

A small team of your local, friendly scientists have started a science blog, including three **MMI students**, Elizabeth Weingartner, Eric Kong, and Stephanie Lehman, as well as Maggie Matern, a Human Genetics and Genomic Medicine PhD candidate, and Jean-Paul Courneya, a Bioinformationist at the UMB Health Sciences Library.

As a nod to our great city, we've called it 'Bench to B'more**.'**

The mission is simple – we are scientists dedicated to connecting with our peers and science enthusiasts over the "stuff" we all find cool. From **science in the local and national news** to our own **research**, we want to communicate in a way that fosters **curiosity** and **collaboration**.

Check out cool articles like:

- Lessons from Women Leading Science
- Logical Fallacies and Cognitive Biases: The Straw Man Fallacy
- What can a “science nerd” learn from a “sports jock?”
- Mendeling in your affairs: understanding the term “Mendelian Disease”

Baltimore and the greater Maryland/DC area are booming with scientific research and development, and we hope to meet others who share our passion. Check out what we have to offer, **let us know** if you are interested in **contributing**, and let us know what you think!

2nd Annual Arthritis Foundation Fundraiser!

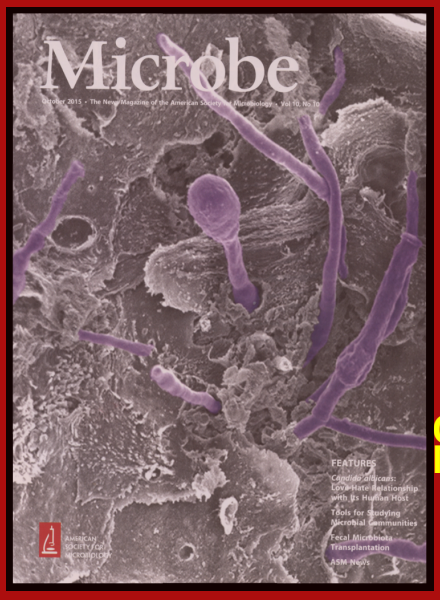
Did you see all those green shirts at the MMI holiday party?

For the second year in a row, **MMI's own Elizabeth Weingartner** successfully raised funds for the Arthritis Foundation by coordinating a team to run in the annual Baltimore Jingle Bell Run/Walk, as well as selling long sleeve shirts emblazoned with the science-pun thought up this year by **MMI's Mark Rudolph: "Santa may be fat, but he has some killer Abs!"** Cartoon designed by **Mark and Eric Kong**.

Keep an eye out for next year's fundraiser and another great science pun!

Announcements!

Congratulations to newly weds Mark and Rhiannon Rudolph!



Cover image of Microbe taken by lab of Mary Ann Jabra-Rizk.

Publications

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Funding

- NIH R21 AI119566 "Sphingosine-1-phosphate signaling in pertussis pathogenesis and therapeutics", P.I. **Nicholas Carbonetti**, Ph.D., 6/15/15 – 5/31/17
- **Jacques Ravel**, PhD, Professor, Department of Microbiology & Immunology, Associate Director, Genomics at the Institute for Genome Sciences is a co-Investigator on a five year, $3,527,206 RO1 award from the National Institute of Allergy and Infectious Diseases (NIAID) for “A longitudinal study on the role of the vaginal microbiota in protecting women from sexually transmitted infections lead by **Rebecca Brotman**, PhD, MPH, Assistant Professor, Department of Epidemiology and Public Health and the Institute for Genome Sciences. The project began May 1, 2015

Presentations

- **Boudová S**, Divala T, Mungwira R, Mawindo P, Tomoka T, Taylor TE, **Laufer MK**. The effect of malaria during pregnancy on infant susceptibility to malaria. 64th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Philadelphia, PA, 2015
- **Boudová S**, Divala T, Mungwira R, Mawindo P, Tomoka T, Taylor TE, **Laufer MK**. The effect of malaria during pregnancy on infant susceptibility to malaria. Infectious Diseases Society of America, IDWeek, San Diego, CA, 2015.
- **Boudová S**, Divala T, Mungwira R, Mawindo P, Tomoka T, Taylor TE**, Laufer MK**. The effect of malaria during pregnancy on infant susceptibility to malaria. Gordon Research Conference/Seminar: Translating Malaria Research to the Field, Girona, Spain, 2015.
- **Boudová S**, Divala T, Mungwira R, Mawindo P, Tomoka T, Taylor TE, **Laufer MK**. The effect of malaria during pregnancy on infant susceptibility to malaria. 30th Annual MD, PhD National Student Conference, Keystone CO, 2015.
- **Jacques Ravel**, PhD, Professor, Microbiology and Immunology, Associate Director, Genomics, Institute for Genome Sciences, has presented, “The vaginal microbiota and women’s health” at INSERM SCHOOL; a post-Master scientific sessions of MD-Pharm D/PhD Program, Mar 20-22, 2015, Paris, France.
- **Jacques Ravel**, PhD, Professor, Department of Microbiology & Immunology, Associate Director, Genomics, Institute for Genome Sciences was an invited speaker at The International Society for STD Research (ISSTDR) in Brisbane, Australia; Sep 13-16, 2015 and at the European Institute of Microbiology and Infectious Diseases (EIMID), in Stockholm, Sweden, Sep 23-25, 2015, where he presented " The many facets of the vaginal microbiome in health and disease."
- **Jacques Ravel**, PhD, Professor, Department of Microbiology & Immunology, Associate Director, Genomics, Institute for Genome Sciences, co-chaired session 2 : Microbiota Signature & Predictive Medicine, at the 3rd World Congress on Targeting Microbiota, Institut Pasteur, Paris, France, on October 22nd, 2015. Dr. Ravel also gave a presentation entitled “The interaction between the host, the vaginal microbiota and sexually transmitted infections.”
- **Martin Flajnik,** May, 2015. History of the Complement System. Course on the history of the immune system, Erlangen, Germany.
- **Martin Flajnik,** October, 2015. Evolution of Antigen Receptors. University of California Davis, Davis CA.
- **Martin Flajnik,** November 2015. Emergence of lymphoid tissues. Loyola University, Chicago, IL.
- **Mary Ann Jabra-Rizk.** FEMS Congress of European Microbiologists; Maastricht, The Netherlands June, 2015
- **Mary Ann Jabra-Rizk.** FWO Research Community “Biology & Ecology of Bacterial & Fungal Human Biofilms” Conference; Antwerp, Belgium September 2015
- **Tettelin H.** (2015) Comparative genome analyses. “WS-16 Do-it-yourself Microbial Genome Sequence Analysis” workshop, 115th American Society for Microbiology General Meeting, New Orleans, LA, USA. [May 30-June 2, 2015]
- **Tettelin H.** (2015) Genomycobacteriology to the rescue: Applications for the clinical laboratory. Next Generation Mycobacteriology session, 115th American Society for Microbiology General Meeting, New Orleans, LA, USA. [May 30-June 2, 2015]

Awards

- **Jacques Ravel**, PhD, Professor, Department of Microbiology & Immunology, Associate Director, Genomics, Institute for Genome Sciences has been selected as one of the twelve University System of Maryland's PROMISE AGEP Outstanding Faculty Mentors, for 2015-2016. (AGEP = Association for Graduate Education and the Professoriate)
- **Jacques Ravel**, PhD, Professor, Department of Microbiology & Immunology, Associate Director, Genomics, Institute for Genome Sciences has been named a 2015-2017 Blaise Pascal International Research Chair, a selection made by a scientific committee of 18 distinguished and multidisciplinary members. He is one of two Blaise Pascal Chairs selected, and he will be in residence at the Pasteur Institute in Paris. Dr. Ravel will address the following central question: “Can a pathogen, to be successful, becomes a commensal, by subverting the fine tuned balance between the host and the microbiome?”
- **Sarah Boudová** was awarded the **American Society for Tropical Medicine and Hygiene-Elsevier Clinical Research Award, 2nd Place, 2015**; and the **American Society for Tropical Medicine and Hygiene Young Investigator Award, First Tier Mention, 2015**

In the News

- **Jacques Ravel**, PhD, Professor, Department of Microbiology & Immunology, Associate Director, Institute for Genome Sciences, was quoted on an online article by MotherBoard. Motherboard is an online magazine and video channel dedicated to the intersection of technology, science and humans. The link is http://motherboard.vice.com/read/enter-the-vaginome?utm_source=mbtwitter.

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