



Welcome!

Issue 2, September 2020

Welcome!

We are delighted to present the Fall 2020 edition of the Center for Evolutionary Biology and Medicine (CEBaM) newsletter, which provides recent information about our members, updates and scientific accomplishments. Founded in 2017, we want to continue to stimulate interactions between evolutionary groups.

Congratulations to our 2020 Catalyst Award Program Recipients, James Budnick and Amanda Kowalczyk!



James (Jimmy) Budnick is a second year postdoctoral fellow in the lab of Dr. James Bina within the Department of Microbiology and Molecular Genetics at the University of Pittsburgh School of Medicine. Jimmy is supported by the NIH-funded University of Pittsburgh Training Program in Antimicrobial Resistance (TPAR) in the Department of Medicine. He received his Ph.D. in Biomedical and Veterinary Sciences in Dr. Clayton Caswell's lab at Virginia Tech where his research was focused on characterizing mechanisms of transcriptional regulation in the bacterial pathogens *Brucella abortus* and *Agrobacterium tumefaciens*.



Amanda Kowalczyk is a PhD candidate in the Clark and Chikina labs through the Carnegie Mellon University-University of Pittsburgh joint PhD program in Computational Biology. Her research focuses on using comparative genomics strategies to link convergently-evolving phenotypes in mammals to their associated genes and regulatory elements. Outside of her research, Amanda is actively involved in outreach efforts in the greater Pittsburgh area and beyond, including participating in the Letters to a Pre-scientist program, co-organizing the TECbio REU at the University of Pittsburgh, and founding the Greensburg Salem High School Outreach Program. She is also an avid writer and regularly publishes science blogs through popular online forums to help make science accessible to the general public.

Check out more about their research [here](#).

Faculty Spotlight: Daria Van Tyne



Daria Van Tyne is an Assistant Professor at the University of Pittsburgh School of Medicine in the Division of Infectious Diseases and the Center for Innovative Antimicrobial Therapy. She attended Vassar College as a Biochemistry major, and was a Fulbright Scholar in Spain for a year in between college and grad school. Dr. Van Tyne completed her PhD at the Harvard T.H. Chan School of Public Health, where she studied the evolution of drug resistance in the malaria parasite. She then moved on to a post-doc at Harvard Medical School, where she worked to understand how antibiotic-resistant bacteria adapt during human infection. Dr. Van Tyne started her lab at Pitt in 2018.

The Van Tyne lab studies how bacteria evolve during human infection to resist antibiotics and the host immune system, using comparative genomics and functional approaches. Researchers in the lab sequence the genomes of bacteria isolated from human infections, and use functional genomics to identify and characterize novel resistance mechanisms. These include the ability of bacteria to resist the host immune system, or to persist in the face of antibiotic pressure. Dr. Van Tyne's research is also focused on developing new antimicrobial therapeutics, including novel chemical compounds and bacteriophages. To read more about Dr. Van Tyne, click [here](#).

New and Notable Publications

[One gene, multiple ecological strategies: A biofilm regulator is a capacitor for sustainable diversity](#)

[Evolution of vancomycin-resistant *Enterococcus faecium* during colonization and infection in immunocompromised pediatric patients](#)

[Quantitative Translation of Dog-to-Human Aging by Conserved Remodeling of the DNA Methylome](#)

[Synteny-based analyses indicate that sequence divergence is not the main source of orphan genes](#)

[Experimental Evolution In Vivo To Identify Selective Pressures during Pneumococcal Colonization](#)

If you haven't heard.....

Read The Washington Post article, [Genetic data show how a single superspreading event sent coronavirus across Massachusetts – and the nation](#), where our own **Vaughn Cooper** was quoted.

Be sure to mark your calendars and check out [Club EvMed](#) - a web series launched in April 2020 to keep the evolutionary medicine community connected during a time of pandemic-related social distancing. These regularly-held virtual meetings are styled around the idea of a journal club, with a different topic and discussion leader each time. Organized by the International Society for Evolution, Medicine, and Public Health (ISEMPH) and five evolutionary medicine centers: the Triangle Center for Evolutionary Medicine (TriCEM), the UCLA Evolutionary Medicine Interdisciplinary Center, the ASU Center for Evolution and Medicine, the **Pittsburgh Center for Evolutionary Biology and Medicine**, and the University of Zurich Institute of Evolutionary Medicine – all are welcome!

We'd Like to Hear From You!

Do you have some news you would like to share? Recent publications? Let's keep sharing information! Please send your news to: Kristie Bowman, BOWMANKL2@UPMC.EDU