

Junior Faculty Research Awards

Mark Emmerson, *City College of New York*



Mark Emerson is an Assistant Professor in the Biology Department at the City College of New York. Since joining CUNY as a developmental biologist in the fall of 2012 he has quickly established a research presence, built an active research group, and enhanced the neuroscience research program and the biology department.

The Emerson Lab's research focuses on understanding the molecular and cellular mechanisms that underlie the development of the vertebrate retina. This allows them to investigate fundamental questions regarding the development of the nervous system. In particular, the lab looks at cone photoreceptors, which are "highly specialized cells that play a critical first step in the perception of bright light sensory stimuli that make up most of human visual stimuli."

Dr. Emerson is a graduate of Oberlin College and completed his doctorate and post-doctoral work at Harvard University and Harvard Medical School. He has been an active mentor throughout his postgraduate career, working with both undergraduate and graduate students and participating in an outreach program which brings middle school students into research labs. Recently, Dr. Emerson was awarded an RO1 from the National Eye Institute to study transcriptional networks involved in cone photoreceptor genesis and a grant from the Retina Research Foundation to generate a stem cell model of these cells.

Mandë Holford, *Hunter College*



Mandë Holford is an Associate Professor in Chemical Biology at Hunter College. Collaborating with colleagues in France, Germany, and Panama, she has already begun making a significant impact in her field. Holford's research focuses in the discovery, characterization and delivery of peptide therapeutics from venomous marine snails and has included the design of a carbohydrate peptide chip for screening peptidic snail toxins. Her lab identifies rich peptide toxins from a venom source, develops high-throughput methods for characterizing structure-function peptide interactions, and produces novel peptide targets for therapeutic development. This evolutionary approach to drug discovery and development puts her at the forefront of Venomics, an emerging scientific field.

Since joining CUNY in 2008, Holford has played an active role in both the development of her lab and in encouraging research and scientific education more broadly. She developed educational outreach programs to high school students at both the American Museum of Natural History and at the Utah Museum of Natural History. She also cofounded RAISE-W (Resource Assisted Initiatives for Science Empowerment for Women) with funding from the NSF.

Holford graduated from York College and the Rockefeller University. She completed postdoctoral work at the University of Utah, the Max Delbrück Center for Molecular Medicine and the Muséum National d'Histoire Naturelle in Paris.

David Lohman, *City College of New York*



David Lohman is an Assistant Professor in the Biology Department at the City College of New York. His work focuses on the role that geography plays in biological diversification.

Dr. Lohman's lab researches the ecology, evolution, biogeography, and conservation of butterflies and other organisms in Southeast Asia to examine patterns of biodiversity and the processes that generate them. Lepidoptera (butterflies and moths) are the best characterized insects, making them ideal for comparative analysis. Recent projects investigate the role that Buddhist temples play in biodiversity conservation, dispersal patterns of flying foxes that can vector human pathogens, and adaptive radiation of butterflies across the Indo-Australian Archipelago. Dr. Lohman collaborates with scientists in Indonesia, Nepal, Panama, the Philippines, Singapore, Sri Lanka, Taiwan, and in Thailand, where he helped establish a biological research station in collaboration with the Center for Tropical Forest Science of the Smithsonian Institution.

Dr. Lohman joined CUNY in 2009. He currently also serves as a visiting scientist at the American Museum of Natural History, as a Research Associate at the National Museum of the Philippines, and as a Research Associate at the Museum of Comparative Zoology at Harvard University. He is a graduate of Bradley University, was a Fulbright Scholar at Griffith University in Australia, and completed his Ph.D. and postdoctoral work at Harvard, with further postdoctoral work at the National University of Singapore.

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Ryan Murelli, *Brooklyn College*



Ryan Murelli joined the Department of Chemistry at Brooklyn College as an Assistant Professor in 2010. Over the past five years Dr. Murelli has created an impressive research program that is making significant contributions to the fields of chemistry and medicine. His group has secured over \$2,000,000 in federal funding, and has established an international network of collaborators spanning over a dozen institutions from all over the world.

Dr. Murelli's research is aimed at identifying challenges and opportunities in biology and medicine that are in need of new advances in synthetic organic chemistry. These studies can range from developing and improving individual reactions to establishing multi-reaction routes to valuable molecular targets. The group's main research area involves α -hydroxytropolones, which are promising lead therapeutic targets for dozens of human diseases. The group has developed a powerful new route to access these molecules, and is using it in as part of collaborative research programs in search of clinically viable drugs for HIV, Hepatitis B and Herpes Simplex Virus, antibiotic resistant bacteria and more.

A graduate of Hamilton College in Upstate New York, Dr. Murelli completed his Ph.D. at Boston College and postdoctoral work at Yale University. He is a zealous mentor to graduate and undergraduate students, both inside and outside of his lab, and has a diverse and active teaching load. He has also been highly active in service to the college, most notably for his work over the last three years as the chairman of both the Chemistry Department's Friedman Lectureship Series and Brooklyn College's annual Science Retreat.

Joshua Sussan, *Medgar Evers College*



Joshua Sussan joined the Department of Mathematics at Medgar Evers College as an Assistant Professor in 2012. Over the past few years he has become a leading expert in applications of Representation Theory to low dimensional topology, the study of shapes in three or four dimensions.

Dr. Sussan's current research is in the field of Categorification. Using sophisticated mathematical machinery in collaboration with colleagues at Columbia, Yale and other institutions, he has worked on categorifying classical knot invariants. With these collaborations Dr. Sussan is at the forefront of this exciting, fertile new field, which should quickly grow in significance and applications. He is also working on categorification of quantum objects at roots of unity.

In addition to his academic research, Dr. Sussan organized a 2013 Columbia University conference on "Hecke Algebras in number theory and categorification." He is also a co-organizer of the weekly CUNY Representation Theory Seminar at the CUNY Graduate Center. Dr. Sussan is a graduate of MIT. He completed his Ph.D. at Yale University and postdoctoral work at the University of California, Berkeley. Prior to joining CUNY he was a visiting scholar at the Max Planck Institute for Mathematics in Bonn and an Assistant Professor at Mercy College.
