

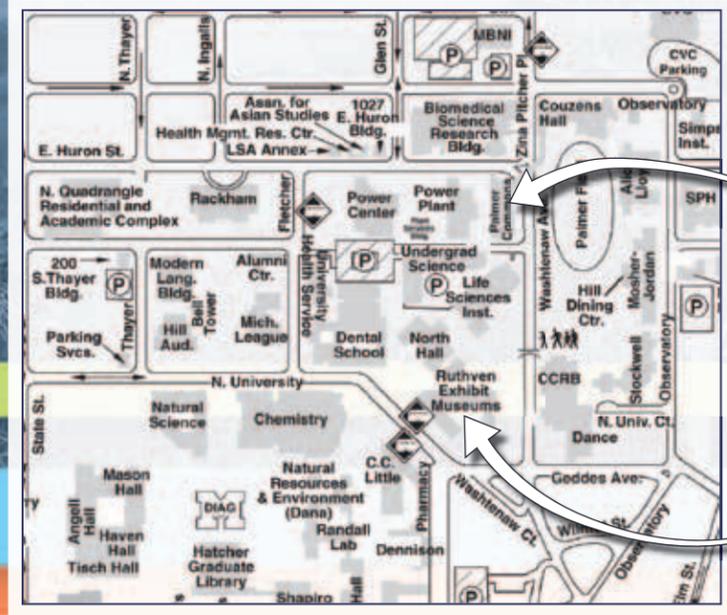
Eighth Early Career Scientists Symposium

BIODIVERSITY INFORMATICS



All presentations in Forum Hall,
fourth floor, Palmer Commons
Lunch in the Great Lakes Room,
fourth floor, Palmer Commons

Dinner reception at the
University of Michigan
Museum of Natural History



Early Career Scientists Symposium 2012 committee

Christopher Dick

Associate Professor, Ecology and Evolutionary Biology, Associate Curator, U-M Herbarium

Phil Myers

Professor, Ecology and Evolutionary Biology, Curator, U-M Museum of Zoology

Stephen Smith

Assistant Professor, Ecology and Evolutionary Biology

Evan Economo

Michigan Fellow, Ecology and Evolutionary Biology

Hayley Lanier

Postdoctoral Fellow, Ecology and Evolutionary Biology, U-M Museum of Zoology

Ya Yang

Postdoctoral Fellow, Ecology and Evolutionary Biology

Photo credits

- Bluebird by Morgan W. Tingley
- Series of U.S. maps by Jessica Blois
- Undersea painting by Bob Nicholls (Lauren Sallan)
- Brazilian rainforest by Mauro Teixeira, Jr.
- Maps of Africa and U.S. by Monica Papeş
- Australian border by Dan Rosauer
- NEEMO project by Vizzuality/NASA (Andrew Hill)

Department of Ecology and Evolutionary Biology
University of Michigan

Sunday, March 25, 2012

Palmer Commons, Forum Hall,
Ann Arbor, Michigan



Made possible by the generous support of alumna Dr. Nancy Williams Walls

8:50 - 9 a.m. Opening remarks

Christopher Dick, Associate Professor, Ecology and Evolutionary Biology,
Associate Curator, Herbarium, University of Michigan

9 – 9:35 a.m. Andrew Hill***Biodiversity informatics – strengthening the ties between science and the community***

Andrew Hill spent nearly a decade studying biology in Boulder, Colo. During that time, he not only came to love the pursuit of scientific knowledge, but became excited about how new technologies could drive scientific questions and the process of creating that knowledge in new ways. His biology research has always had a technology bent, focusing on informatics and the use of big data. This has allowed him to move across diverse domains within biology, including epidemiology, microbiology, biodiversity informatics, and phyloinformatics. Hill is now the senior scientist at Vizzuality, where he tries to advance the Earth sciences with an array of tools from citizen science to large-scale geospatial analysis.

9:35 – 10:10 a.m. Ana Carolina Carnaval***Understanding diversity patterns in the Brazilian coastal forests: Bayesian computation meets correlative models and evolutionary physiology***

Ana Carolina Carnaval is an assistant professor at the City University of New York. She was born and raised in Rio de Janeiro, Brazil, where she obtained her undergraduate biology degree and a master's degree in zoology from Museu Nacional. She has a Ph.D. in evolutionary biology from the University of Chicago, where her advisor was John Bates at The Field Museum. Before joining CUNY in 2010, Carnaval was an NSF-funded postdoctoral fellow in the Museum of Vertebrate Zoology at the University of California Berkeley, where she worked with Craig Moritz.

10:10 – 10:45 a.m. Monica Papeş***The role of museum and herbaria specimens in predicting present and future potential distributions of species***

Monica Papeş is an assistant professor in the Department of Zoology at Oklahoma State University. Her research focuses on species' environmental and spatial occurrence patterns, and covers both theoretical and applied aspects of distributional biology, including remote sensing applications for mapping biodiversity, conservation of data-deficient species, and predicting areas at risk of invasive species. Dr. Papeş received her Ph.D. in ecology and evolutionary biology with honors from the University of Kansas in 2009. She has published over 20 articles in journals including *Conservation Biology*, *Global Ecology and Biogeography*, and *Journal of Biogeography*.

10:45 – 11 a.m. Coffee break**11:00 – 11:35 a.m. Jessica L. Blois*****Climate controls on temporal variation in beta diversity***

Jessica Blois is a postdoctoral research associate at University of Wisconsin - Madison. Blois received her B.S. in 2000 in ecology, behavior, and evolution from the University of California, San Diego and then worked as a biological technician for the U.S. Forest Service in Oregon and California. After earning her M.A. from Humboldt State University in 2005, she attended Stanford University, receiving her Ph.D. in biology in 2009. Her dissertation research focused on examining the ecological and evolutionary responses that mammals have shown to paleoclimate change in northern California. Her current research focuses on examining climatic controls on plant and mammal diversity since the Last Glacial Maximum.

11:35 – 12:15 p.m. Dan F. Rosauer***Toward a predictive model of phylogenetic beta diversity***

Dan Rosauer is a postdoctoral associate in ecology and evolutionary biology at Yale University and received his Ph.D. at the University of New South Wales, Australia. His research in the fields of biogeography and biodiversity informatics includes new methods to map phylogenetic endemism, and a predictive spatial model of phylogenetic relatedness. He is currently looking at how current and paleo environment data can help to explain the distribution of phylogenetic endemism in the world's terrestrial mammals. Before completing his Ph.D., Rosauer worked for government, managing a biodiversity information system to inform conservation decisions. His work is published in journals including *Molecular Ecology*, *Journal of Biogeography*, *Proceedings B* and *Ecography*.

12:15 – 2 p.m. Lunch and poster session

Great Lakes Room, fourth floor, Palmer Commons

2 – 2:35 p.m. Zhiheng Wang***Large-scale patterns of woody plant diversity in China: climatic and evolutionary determinants***

Zhiheng Wang is a Marie Curie Postdoctoral Fellow at the University of Copenhagen in the Center for Macroecology, Evolution and Climate. His research interests lie in macroecology, especially the causes of the geographical patterns of species diversity and range size, and the responses of species to climate change. For the last few years, his work was mainly focused on the compilation of the Database of China's Woody Plants, and the geographical patterns of plant diversity in eastern Asia and North America. Dr. Wang's current research combines phylogeography with macroecology to explore how climate and species evolution collectively determines local and regional species diversity, and how future climate change influences species distribution. Wang received his Ph.D. from Peking University in 2009.

2:35 – 3:10 p.m. Lauren Sallan***After the end: how the end-Devonian extinction shaped vertebrate biodiversity***

Lauren Sallan is a graduate student at the University of Chicago in the Program in Integrative Biology. She will join the Department of Ecology and Evolutionary Biology at the University of Michigan as a Michigan Fellow and assistant professor in September 2012. Sallan's research interests include macroevolution, early vertebrate paleobiology, biodiversity, macroecology, mass extinction, ichthyology, herpetology and biomechanics. She is expected to receive her Ph.D. in integrative biology from the University of Chicago in June 2012. Her research has been featured internationally by various news outlets including the BBC, Los Angeles Times, Scientific American, El Mundo, and the Tehran Times.

3:10 – 3:45 p.m. Morgan W. Tingley***Understanding the future through unlocking the past: historical data and climate change inference***

Morgan Tingley is a postdoctoral researcher and David H. Smith Conservation Research Fellow with the Program in Science, Technology and Environmental Policy in the Woodrow Wilson School at Princeton University. In 2011, he received his Ph.D. in environmental science, policy and management from the University of California, Berkeley and in 2004, an M.Sc. in zoology from Oxford University. His research focuses on avian community ecology, and the environmental and anthropogenic factors that cause changes in bird distributions and community assemblages over time.

3:45 – 4:10 p.m. Coffee break**4:10 – 5:10 p.m. Keynote presentation Robert Penn Guralnick*****Mapping life: challenges with overcoming the Wallacean shortfall and documenting global scale biodiversity change***

Robert Guralnick is an associate professor in the Ecology and Evolutionary Biology Department at the University of Colorado Boulder and curator of zoology, invertebrates, at UC's Museum of Natural History. Dr. Guralnick is a biodiversity scientist whose research focuses on what causes spatiotemporal changes in genetic and species diversity. His lab takes an integrative approach to global change biology utilizing wide-ranging skills from occupancy modeling, spatial ecological modeling, and landscape genetics to molecular phylogenetics. Because so much of the lab work uses primary species and population occurrence data available from natural history collections and citizen science naturalists, they are very involved in ecological and biodiversity informatics initiatives to increase the quality, availability and utility of such datasets at the global scale. Guralnick primarily works on gastropod molluscs but his students work on a variety of organisms including mammals, snakes, insects and viruses. Their work often has applied utility in the area of conservation biology. Guralnick has published dozens of peer reviewed journal articles including in *PLoS Biology*, *Trends in Ecology and Evolution*, and *Nature Biotechnology*.

5:15 - 6 p.m. Panel discussion

6 - 8 p.m. Dinner reception, Museum of Natural History