



- All presentations in Room 1324 East Hall
- Lunch on the third floor terrace, East Hall
- Posters in the East Hall atrium
- Dinner reception at the U-M Museum of Natural History



MACROEVOLUTION

FOSSILS, FRAMEWORKS, AND PHYLOGENIES

Early Career Scientists Symposium 2013 committee

Lauren Sallan: U-M EEB, Michigan Fellow, Assistant Professor

Dan Rabosky: U-M EEB, Assistant Professor; Assistant Curator, Museum of Zoology

Yin-Long Qiu: Associate Professor, U-M EEB; Associate Curator, Herbarium

Joseph Brown: Postdoctoral Fellow, U-M EEB

Qixin He: U-M EEB graduate student

Valerie Syverson: U-M Museum of Paleontology, Earth and Environmental Sciences, graduate student

Photo credits:

Paul Harnik (fossil shells)

Andrew Leslie (pine)

micro*scope (microbial eukaryotes)

Richard Shirley (bird)

Wagner et al 2012 (fish)

Saturday, March 16, 2013

University of Michigan

Room 1324, East Hall

Central Campus, Ann Arbor, Mich.



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

Morning session**7:45 – 8:30 a.m. Registration and continental breakfast**

8:30 a.m.

**Opening remarks: Lauren Sallan**

Michigan Fellow and Assistant Professor, U-M Department of Ecology and Evolutionary Biology

9:00 a.m.

**Keynote presentation, Douglas H. Erwin***Changing dynamics in macroevolution*

Doug Erwin is a senior scientist in the Department of Paleobiology at the National Museum of Natural History, The Smithsonian Institution, where his research involves major evolutionary innovations, particularly the Ediacaran-Cambrian diversification of animals, the timing and causes of the end-Permian mass extinction, and the evolutionary dynamics of Paleozoic gastropods. He is the author of several books, including *The Cambrian Explosion: The Construction of Animal Biodiversity* (2013, with Jim Valentine) and *Extinction* (2005).

10:00 a.m.

**Prashant Sharma***How fossils and model organisms inform early arthropod diversification: phylogeny and evolutionary development of Chelicerata*

Prashant Sharma is broadly interested in macroevolution, phylogenetics, biogeography, and morphological evolution. He addresses these questions through an increasingly powerful model system for biogeographical studies, Opiliones, an order of small arachnids commonly known as daddy-long-legs. His current postdoctoral project, co-sponsored by Dr. Katherine St. John (The City University of New York) and Professor Ward C. Wheeler (American Museum of Natural History), investigates the effects of geological dynamism on the biogeography of terrestrial lineages in Southeast Asia. This project incorporates mathematical modeling approaches in order to determine how sea level oscillations affect the inference of phylogenetic relationships among Indo-Malay Archipelago endemics.

10:35 a.m.

Coffee break and refreshments

10:50 a.m.

**Melanie Hopkins***Traits, species and evolutionary modes*

Melanie Hopkins went to graduate school at the University of Chicago, where she worked on within-species variation in Cambrian trilobites and its importance for species longevity. After completing her Ph.D. in 2010, she was awarded the John Caldwell Meeker Postdoctoral Fellowship at the Field Museum of Natural History where she worked on evolutionary modes. Last year, she accepted a postdoctoral position at the Museum fuer Naturkunde Berlin. In February, the position was transferred to the University of Erlangen-Nuremberg, where she continues to work on trilobite diversification as well as new projects on the macroevolution of substrate affinity.

11:25 a.m.

**Graham Slater***Tempo and mode in phenotypic evolution: fossils, phylogenies and realistic models*

Graham Slater obtained a Ph.D. in biology from the University of California Los Angeles in 2009, with a focus on feeding biomechanics in carnivores. From there, he moved to a postdoctoral fellowship at UCLA developing phylogenetic comparative methods to test questions about macroevolutionary pattern and process in vertebrates. He is now a Peter Buck postdoctoral fellow at the National Museum of Natural History, The Smithsonian Institution, where he is studying tempo and mode of ecomorphological evolution in living and fossil members of the dog family Canidae.

12:00 p.m. Lunch and poster session, third floor terrace, East Hall**Afternoon session****Laura Wegener Parfrey***Elucidating the evolutionary history of eukaryotes and complex eukaryotic traits*

Laura Wegener Parfrey's research explores various facets of eukaryotic diversity within a phylogenetic framework. Specifically, she has 1) incorporated a broad sampling of eukaryotes into the tree of life, 2) assessed the time frame of eukaryotic evolution, and the distribution of traits and sex across eukaryotes, and 3) is currently elucidating broad ecological and evolutionary patterns of eukaryotic diversity and distribution. Wegener Parfrey is a postdoctoral associate at the Biofrontiers Institute, University of Colorado. She earned her Ph.D. in organismic and evolutionary biology from the University of Massachusetts in 2011 and received an NSF FIRST IV postdoctoral fellowship for 2011- 2012.

1:30 p.m.

**Andrew Leslie***Function, diversification and macroevolutionary patterns in seed plants*

Andrew Leslie is a paleobotanist and an evolutionary biologist interested in exploring the relationship between form, function, and morphological evolution over long time scales. Currently, he is a postdoctoral researcher at the Yale School of Forestry, working with Dr. Peter Crane and Dr. Michael Donoghue on conifer phylogeny, biogeography, and character evolution. He received his Ph.D. in 2010 from the Department of the Geophysical Sciences at the University of Chicago, working with Dr. Kevin Boyce on the evolution of reproductive structures in conifers and other seed plants.

2:05 p.m.

**Katie Wagner***Macroevolutionary patterns in cichlid fish adaptive radiation*

Katie Wagner is an evolutionary biologist with broad interests in processes of speciation and diversification, particularly in systems of high species diversity. Her research uses population genetic, phylogenetic, and comparative methods to study diversification, from speciation processes to macroevolutionary patterns of diversity. She is a postdoctoral fellow at Eawag, the Swiss Federal Institute of Aquatic Science and Technology and the University of Bern, Switzerland, where her research focuses on adaptive radiation of cichlid fishes in Africa. She earned her Ph.D. in ecology and evolutionary biology from Cornell University in 2011.

2:40 p.m.



Coffee break and refreshments

Paul Harnik*Macroevolutionary consequences of rarity in the marine fossil record*

Paul Harnik is a postdoctoral fellow at the National Evolutionary Synthesis Center. He is interested in the temporal and spatial structure of biodiversity, specifically the factors that drive variation in rates of extinction, speciation, and ecological expansion and contraction. He studies modern and ancient biological systems to understand the processes that have resulted in past biodiversity change and to generate predictions for how lineages might respond to environmental change in the present and future. Harnik received his Ph.D. in evolutionary biology from the University of Chicago in 2009. In fall 2013, he will become an assistant professor at Franklin & Marshall College.

3:30 p.m.

**Keynote presentation by Robert E. Ricklefs***My half century with the taxon cycle*

Robert Ricklefs was a faculty member at the University of Pennsylvania for 27 years before moving to the University of Missouri-St. Louis in 1995. He earned his degrees in biology at Stanford University (A.B.) and the University of Pennsylvania (Ph.D.) and then spent a year on postdoctoral research at the Smithsonian Tropical Research Institute in Panama. His research has addressed biological diversity at several levels from the adaptive significance of avian life histories to island biogeography, the diversity of avian malaria parasites, and patterns of distribution and abundance in regional communities.

4:05 p.m.

**Panel discussion****Dinner reception, U-M Museum of Natural History**

5:05 - 6 p.m.

6 :15 – 8 p.m.