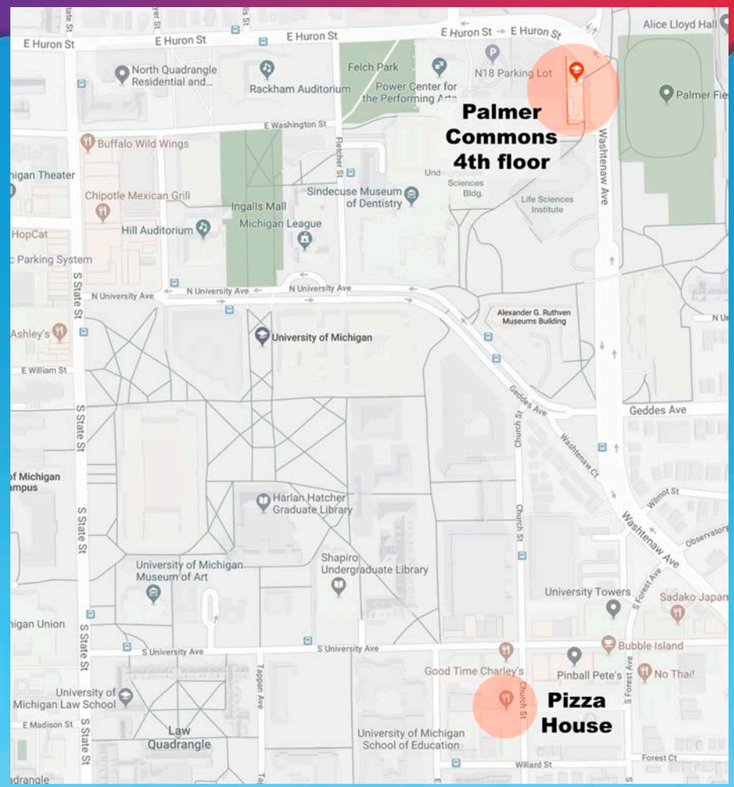
All presentations are in Forum Hall, Palmer Commons, fourth floor



6:30 – 8 p.m., evening reception at Pizza House, second floor

Early Career Scientists Symposium 2018 Committee:

Leslie Decker
Jon Massey
Talia Moore
Alison Davis Rabosky
Carol Solomon
Elizabeth Tibbetts
Oscar Vargas
Lisa Walsh

Illustrations: Clara Lacy. Program backgrounds based on images by Beth Reinke: ventral shells of painted turtles, *Chrysemys picta*, and Nymphalinae butterflies.

The University of Michigan Department of Ecology and Evolutionary Biology presents the

14th Annual Early Career Scientists Symposium

ECOLOGY AND EVOLUTION OF COLOR

Saturday, March 10, 2018
Palmer Commons, fourth floor
Ann Arbor, Mich.

Sponsored by the Department of Ecology and Evolutionary Biology and the David Bay Photography Fund.

M | LSA ECOLOGY AND EVOLUTIONARY BIOLOGY
UNIVERSITY OF MICHIGAN

Morning session

8:15 a.m. **Check-in and continental breakfast, Palmer Commons, fourth floor**

8:45 a.m. **Opening remarks, Elizabeth Tibbetts**
Professor, U-M EEB

9:00 a.m.

Keynote presentation by Molly Cummings

The past, present and future of sensory drive: predicting signal variation from the seen to the unseen

Dr. Molly Cummings is a professor of integrative biology at the University of Texas at Austin. Her research blends sensory ecology, neuroethology and behavioral genomics to identify mechanisms of divergence in communication, behavior and cognitive traits. She has conducted field and laboratory experiments with frogs and fishes, with a particular emphasis on freshwater poeciliid fishes since 2001.

Cummings has used a range of technological tools to study the mechanisms of animal communication and decision making. For her studies in sensory ecology, she has worked with physicists to construct and deploy videopolarimeters for underwater measurements of polarized communication and concealment. And for her explorations inside the brain, she has been employing behavioral genomics to uncover the neurogenomic pathway of mate choice decisions in poeciliid fishes, as well as testing for cognitive variation between individuals and species.

10:00 a.m.

Natasha Bloch

Evolution and genetic basis of color perception and color preferences

Dr. Natasha Bloch is an NSF Postdoctoral Fellow currently working with Dr. Judith Mank at University College London. After obtaining her bachelor's degree from Los Andes University, Colombia, she earned her Ph.D. from the University of Chicago under the mentorship of Dr. Trevor Price. Bloch aims to understand the evolution of color from the perspective of color perception, color preferences and mate choice, by integrating genetics, biochemistry, genomics and neuroscience. For her dissertation research, Bloch focused on the evolution of visual pigments in New World warblers, a colorful and diverse group of birds, to investigate the complex relationship between color vision and color traits. Most recently, her research has focused on identifying the genes and mechanisms at the basis of mate preferences beyond the eye, in the brain of female guppies, another fascinating model of color evolution.

10:35 – 11 a.m. Coffee break and refreshments, Palmer Commons, fourth floor

11:00 a.m.

Courtney Fitzpatrick

The evolution of colorful females; a model for social evolution

Dr. Courtney Fitzpatrick uses field-based empirical studies and mathematical models to investigate the effects of sociality on trait evolution in animals. While there is growing empirical evidence for female ornaments across animal taxa, her research to date suggests that such traits are the outcomes of fundamentally different processes than those that produce the well-understood ornaments displayed by males. Fitzpatrick continues to study these phenotypes in female animals as a model for understanding processes of social evolution more broadly, as well as the effects of these processes on patterns of biodiversity. She received her B.A. with highest honors in visual art from the University of North Carolina-Chapel Hill and a Ph.D. in biology from Duke University, where she collaborated with the Amboseli Baboon Research Project. She was a postdoctoral fellow at the National Evolutionary Synthesis Center before her current NIH Postdoctoral Fellowship at Indiana University as part of the Common Themes in Reproductive Diversity research group.

11:35 a.m.

Matt Koski

Abiotic drivers of floral pigmentation diversity

Dr. Matt Koski is a postdoctoral research associate at the University of Virginia. He received his B.S. from the University of Michigan and did an honors thesis with Dr. Robyn Burnham. He went on to obtain his Ph.D. at the University of Pittsburgh with Dr. Tia-Lynn Ashman exploring the evolutionary ecology of ultraviolet floral color patterning at both micro- and macroevolutionary levels. He currently works on the evolution of pollen pigmentation with Dr. Laura Galloway. Koski's work sheds light on how abiotic factors contribute to diversification of floral color at broad geographic scales, and how abiotic selection can constrain or promote adaptation of floral traits to pollinators.

12:10 – 2:00 pm **Lunch and poster session, Palmer Commons, fourth floor**

Afternoon session

2:00 p.m.

Ricardo Mallarino

How the mouse got its stripes: evolution and development of pigment patterns in rodents

Dr. Ricardo Mallarino is an assistant professor in the Department of Molecular Biology at Princeton University. His research aims to uncover the genetic and developmental mechanisms regulating vertebrate development and how these processes are modified during evolutionary time to produce phenotypic diversity. His lab combines the study of non-traditional model organisms, because of their diverse, naturally occurring and ecologically relevant phenotypes, with traditional model species, because of the powerful molecular and genetic tools available, to explore questions relating to patterning and the evolution of novelty in the mammalian skin. Mallarino received his B.Sc. from Universidad de los Andes, Bogotá, Colombia, and then spent 10 years at Harvard University, where he did his Ph.D. working with Drs. Arkhat Abzhanov and Cliff Tabin and a postdoc with Dr. Hopi Hoekstra.

2:35 p.m.

Julienne Ng

Flower color evolution: pattern and process at the macroevolutionary scale

Dr. Julienne Ng is an evolutionary ecologist fascinated by the diverse array of colors in both plants and animals. Specifically, her research focuses on identifying the ecological and evolutionary causes and consequences of such color diversity at both micro- and macroevolutionary scales. Ng received her B.Sc. from the University of Melbourne, and earned her Ph.D. with Dr. Rich Glor at the University of Rochester where she investigated color signal divergence in Anolis lizards and its role in speciation. She is currently a postdoctoral fellow at the University of Colorado Boulder with Dr. Stacey Smith working on the macroevolutionary patterns and processes underlying flower color diversity.

3:10 p.m.

Beth Reinke

Drivers of color diversity: interspecific and intraspecific variation in butterflies and turtles

Dr. Beth Reinke is an evolutionary ecologist interested in pigment evolution, the non-signaling roles of pigments in integument, and the drivers of color diversity. She uses a variety of approaches including computational and visual modeling, field studies, and laboratory experiments. She received her Ph.D. in Ryan Calsbeek's lab at Dartmouth, and is now about to begin a postdoctoral position in Dave Miller's lab at Penn State after a stint as a postdoctoral researcher with Michelle Lawing at Texas A&M.

3:45 – 4:10 p.m. Coffee break and refreshments, Palmer Commons, fourth floor

4:10 p.m.

Marketa Zimova

Camouflage mismatch in seasonally color molting species

Marketa Zimova is a Ph.D. candidate in Dr. L. Scott Mills's lab at the University of Montana. She is broadly interested in the effects of environmental change on wild populations and their adaptation to novel stressors; specifically, mismatch in seasonal camouflage due to climate change. Her graduate research combines field methods, statistical modeling and downscaled climate data to understand the consequences of camouflage mismatch on multiple species. Some of her most recent work includes investigations of (i) the fitness consequences of camouflage mismatch in snowshoe hares, (ii) evolutionary shifts in molt phenology in Scottish mountain hares, (iii) the role of phenotypic plasticity in adaptation to future mismatch, (iv) the ecological significance of color polymorphism in Arctic foxes. Marketa will receive her Ph.D. in the fall of 2018 and is currently seeking postdoctoral positions at the interface of ecology, evolution and applied conservation.

4:45 p.m.

Keynote presentation by Marcus Kronforst

Characterizing the link between mimicry and mate choice in Heliconius butterflies

Dr. Marcus Kronforst is an associate professor in the Department of Ecology & Evolution at the University of Chicago. His lab focuses on the molecular genetic and developmental basis of adaptation and traits related to speciation, primarily butterfly wing patterns and mate preference. His lab also studies a diversity of related topics, including migratory behavior in monarch butterflies, plant-insect interactions, and color patterning in poison-dart frogs. Kronforst received his B.S. at the University of Miami and his Ph.D. at the University of Texas at Austin. After a postdoc at Rice University, Kronforst became a Bauer Fellow at Harvard University's FAS Center for Systems Biology. In 2012, he joined the faculty of University of Chicago as a Neubauer Family Assistant Professor.

5:45 p.m. **Closing remarks**
6:30 p.m. **Evening reception, Pizza House**