

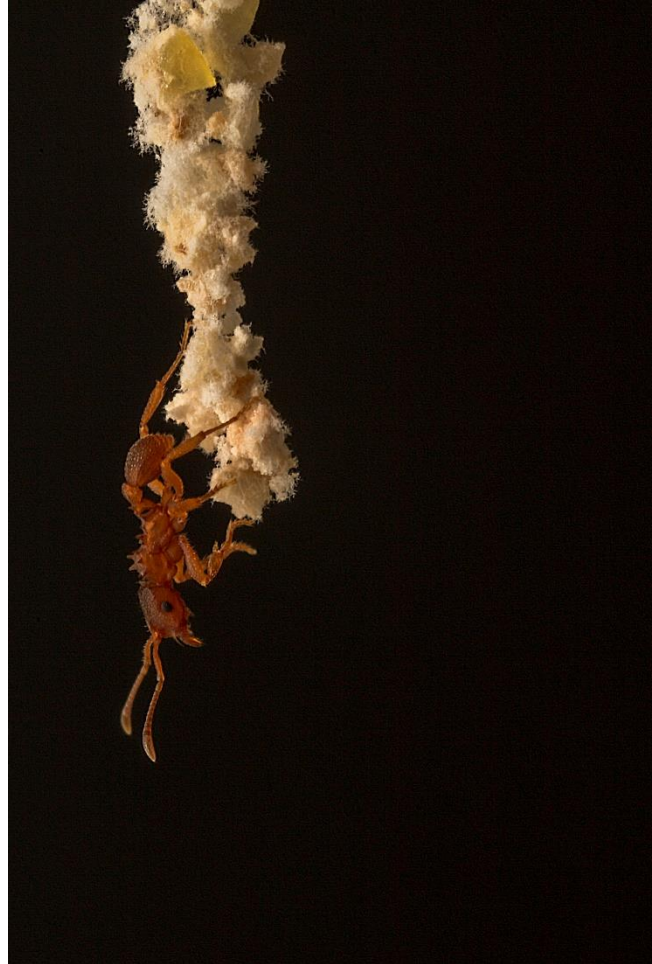
"Eco-physiological tradeoffs and the rise of fungus-farming ant societies"

Dr. Jonathan Shik, University of Copenhagen

Wednesday, December 7, 2016

4:00 – 5:00 PM
Science 2, room 109

A grand challenge of ecological physiology is to explain how traits govern performance across environmental gradients in a changing climate. Progress within this field will hinge upon our ability to predict physiological responses of groups—from genes in genomes, to cells in multicellular bodies, and individuals in societies. Ants provide models for such eco-physiological inquiry, as they enable research at each level of biological organization, inhabit diverse habitats, and exhibit tremendous trait diversity. Dr. Shik will speak about his research exploring these themes using fungus-farming ‘attine’ ants as a model system. These ants are truly remarkable, as they form a lineage with diverse farming practices ranging from small-scale, low-productivity cultivation to massive farms with millions of specialized workers producing domesticated fungal crops. Dr. Shik will also outline future research plans,



involving new eco-physiological tools that integrate seamlessly between the lab and the field while testing novel hypotheses about: the evolution of symbioses, the evolution of diverse farming societies, and evolutionary responses to global change.

Dr. Shik graduated with a B.Sc. in Biology in 2003 from McGill University in Montreal and published an undergraduate thesis titled ‘*The effects of human activity on the ants of a Biosphere reserve*’. He then received a Ph.D. in Ecology and Evolutionary Biology from the University of Oklahoma in 2010, advised by Mike Kaspari with a dissertation titled ‘*The ecological importance of ant colony size*’. From 2011 to 2013, Dr. Shik was a postdoc at North Carolina State University working with Jules Silverman on the nutritional ecology of ant-aphid mutualisms. In 2013, he received a postdoctoral fellowship from the Smithsonian Institution to develop a new research program on the physiological ecology of fungus-farming ants as a full-time resident in Panama, working with Bill Wcislo. He then received a Marie Curie Postdoctoral Fellowship to continue this research at the Centre for Social Evolution at the University of Copenhagen, working with Jacobus Boomsma. During his career, Dr. Shik has published 20 papers in journals ranging from *American Naturalist* to *PNAS*, and has been the co-organizer (2011, 2013, 2015, and now in 2017) of an international graduate-level course located at the Smithsonian Tropical Research Institute in Panama called ‘Tropical Behavioral Ecology and Evolution’.