

Jonathan Z. Shik

Assistant Professor

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EDUCATION

- 2004-2010 Ph. D., University of Oklahoma, Graduate Program in Ecology and Evolutionary Biology
Advisor: Dr. Michael Kaspari
Dissertation: The ecological importance of ant colony size
- 2001-2003 B.Sc., McGill University, Biology
Advisor: Dr. Martin Lechowicz
Thesis: The effects of human activity on the ants of a biosphere reserve

PROFESSIONAL APPOINTMENTS

- 2018-present Assistant Professor, Centre for Social Evolution, University of Copenhagen
- 2016-2018 Postdoctoral Researcher, Centre for Social Evolution, University of Copenhagen
- 2014-2016 Marie Curie Postdoctoral Fellow, Centre for Social Evolution, University of Copenhagen,
advisor: Jacobus Boomsma
- 2013-2014 Postdoctoral Fellow, Smithsonian Tropical Research Institute, advisor: Bill Wcislo
- 2011-2013 Postdoctoral Research Associate, Department of Entomology, North Carolina State
University, advisor: Jules Silverman
- 2010 Research Associate, NSF research: The stoichiometry of brown food webs, advisors: Michael
Kaspari and Adam Kay
- 2009 Research Fellow: Alumni Fellowship, University of Oklahoma

PUBLICATIONS, PRESENTATIONS, AND MANUSCRIPTS

Publications Accepted to Refereed Journals:

24. Hamilton, N., Jones, T.H., Shik, J.Z., Wall, B., Schultz, T.R. Schultz, Blair, H.A., Adams, R.M.M. (2018) Context is everything: Mapping Cyphomyrmex-derived compounds to the fungus-growing ant phylogeny. *Chemoecology*, X:X-X
23. Rodrigues da Costa, R., Vreeburg, S.M.E., Shik, J.Z., Aanen, D.K., and Poulsen M. (2018) Can interaction specificity in the fungus-farming termite symbiosis be explained by nutritional requirements of the crop fungi? *Fungal Ecology*, X:X-X.
22. Shik, J.Z., Rytter, W[^], Arnan, X., Michelsen, A. (2018) Disentangling nutritional pathways linking leafcutter ants and their co-evolved fungal symbionts using stable isotopes. *Ecology*, 99:1999-2009.
[^]Supervised masters student
21. Shik, J.Z., Consilio, A. [^], Kaae, T. [^], Adams, R.M.M. (2018), Farming ants nutritionally manage fungal mutualists and social parasites. *Ecological Entomology*, 43:440-446.
20. Shik, J.Z., Gomez E.B., Kooij P.W., Santos, J.C., Wcislo W.T., Boomsma, J.J. (2016) Nutrition mediates the expression of cultivar-farmer conflict in a fungus-growing ant. *Proceedings of the National Academy of Sciences, USA*, 113:10121-10126.
19. Guenard, B.*, Shik, J.Z.*, Booher, D., Lubertazzi D., Alpert G. (2016) Extreme polygyny in the

- previously unstudied subtropical ant *Temnothorax tuscaloosae* (Hymenoptera: Formicidae), with implications for the biogeographic study of the evolution of polygyny. *Insectes Sociaux*, doi: 10.1007/s00040-016-0498-7.
- *Authors contributed equally to the study
18. Rytter, W.[^], Shik, J.Z. (2016) Liquid foraging behavior in leafcutting ants: The lunchbox hypothesis. *Animal Behaviour*, 117:179-186.
[^]Supervised masters student
 17. Shik, J.Z., Schal C., Silverman, J. (2014) Diet specialization in an extreme omnivore: nutritional regulation in glucose averse cockroaches. *Journal of Evolutionary Biology*, 27:2096-2105.
 16. Shik, J.Z., Kay, A., Silverman J (2014) Aphid honeydew provides a nutritionally balanced resource for incipient Argentine ant mutualists. *Animal Behaviour*, 95:33-39.
 15. Shik, J.Z., Santos, J.C., Seal, J.N., Kay A., Mueller, U.G., Kaspari, M. (2014) Metabolism and the rise of fungus cultivation by ants. *American Naturalist*, 184:364-373.
 14. *Shik, J.Z., Donoso, D.D., Kaspari, M. (2013) The life history continuum hypothesis links traits of male ants with life outside the nest. *Entomologia Experimentalis et Applicata*, 149:99-109.
* invited review paper
 13. Bednar, D., Shik, J.Z., Silverman, J. (2013) Prey handling performance facilitates behavioral dominance of an invasive over a native keystone ant. *Behavioral Ecology*, 24:1312-1319.
 12. Shik, J.Z., Silverman, J. (2013) Towards a nutritional ecology of invasive establishment: aphid mutualists provide better fuel for incipient Argentine ant colonies than insect prey. *Biological Invasions*, 15:829-836.
 11. Shik, J.Z., Flatt, D.[^], Kay, A.D., Kaspari, M. (2012) A life history continuum in the males of a Neotropical ant assemblage: refuting the sperm vessel hypothesis. *Naturwissenschaften*, 99: 191-197.
[^] mentored undergraduate
 10. Shik, J.Z., Hou, C., Kay, A., Kaspari, M., Gillooly, J.F. (2012) Toward a general life history model of the superorganism: predicting the survival, growth, and reproduction of ant societies. *Biology Letters*, 8:1059-1062.
 9. Spicer Rice, E., Shik, J.Z., Silverman, J. (2012) Effect of scattered and discrete hydramethylnon bait placement on the Asian needle ant, *Pachycondyla chinensis* Emery. *Economic Entomology*, 105:1751-1757.
 8. Kay, A.D., Shik, J.Z., Van Alst, A., Kaspari, M. (2012) Diet composition does not affect ant colony tempo. *Functional Ecology*, 26:317-323.
 7. Shik, J.Z., Kaspari, M., Yanoviak, S. (2011) Preliminary assessment of metabolic costs of the nematode *Myrmeconema neotropicum* on its host, the tropical ant *Cephalotes atratus*. *Journal of Parasitology*, 97:958-959.
 6. Shik, J.Z. (2010) The metabolic costs of building ant colonies from variably sized subunits. *Behavioral Ecology and Sociobiology*, 64: 1981-1990.
 5. Kaspari, M., Stevenson, B., Shik, J.Z., Kerekes, J. (2010) Scaling biodiversity: how bacteria, fungi, and ant communities respond to the same tropical landscape. *Ecology*, 91:2221-2226.
 4. Shik, J.Z., Kaspari, M. (2010) More food, less habitat: how necromass and leaf litter decomposition combine to regulate a litter ant community. *Ecological Entomology*, 35:158-165.
 3. Shik, J.Z., Kaspari, M. (2009) Male lifespan in ants linked to mating systems. *Insectes Sociaux*, 52: 131-134.
 2. Shik, J.Z. (2008) Ant colony size and the scaling of reproductive effort. *Functional Ecology*, 22: 674-681.

1. Shik, J.Z., Francoeur, A., Buddle, C.M. (2005) The effect of human activity on ant species (Hymenoptera: Formicidae) richness at the Mont St. Hilaire Biosphere Reserve, Quebec. *The Canadian Field Naturalist*, 118:38-42.

Manuscripts in Review:

Sapountzis, P., Zhukova, M., Shik, J.Z., Schiøtt, M., and Boomsma, J.J. (*In Revision, eLife*)
Reconstructing the symbiotic functions of intestinal Mollicutes in fungus-growing ants.

Shik, J.Z., Arnan, X., Oms, C.S. ^A, Cerda, X., Boulay, R. (*In Review, Journal of Animal Ecology*)
Evidence for locally adaptive metabolic temperature sensitivity with elevation in the ant *Aphaenogaster iberica*.

Other Publications in Refereed Journals:

Shik, J.Z., Nichols, L.M, Lucky, A, Hoefnagels, M.H. (2013) Ants as model organisms to study species coexistence. Proceedings of the 34th Workshop Conference of the Association for Biology Laboratory Education, 34:233-239.

Manuscripts In Preparation:

Krabbe, B.A., Arnan, X., Lannes, P., Echtvad Bergstedt, C., Stenbak Larsen, R., Pedersen, J.S., Shik, J.Z. Nutritional dimensions of a widespread invasive species: defining the fundamental macronutrient niche of the ant *Monomorium pharaonis*

Shik, J.Z., Kooij P.W., Donoso D, Gomez E.B., Franco, M, Santos, J.C., Wcislo W.T., Boomsma, J.J. Cryptically diverse cultivars provide diverse performance benefits for fungus-farming ants.

Kooij, P.W., Dentiger, B.M., Donoso, D., Shik, J.Z., and Gaya, E. (*Insect Science*) Cryptic diversity in Colombian edible ants, *Atta* spp. Fabricius, 1804 [Hymenoptera: Formicidae: Attini].

Bill, B.E., Kaspari, M.E., Shik, J.Z., Wright, S.J., Stevenson, B.S. (*FEMS Microbial Ecology*) The effect of long term NPK fertilization on bacterial communities in leaf litter from a lowland tropical rainforest.

GRANTS AND AWARDS

2017	European Research Council Starting Grant, €1.5 million Finalist, for CNRS position at Pierre and Marie Curie University (Paris)
2014	BIO Incentive grant to support international PhD course (Faculty of Science, U.
2013	Copenhagen – together with Rachele Adams and Koos Boomsma), €9,000 Marie Curie International Incoming Postdoctoral Fellowship, €240,000
2012	Smithsonian Tropical Research Institute, Postdoctoral Fellowship, €55,000
2011	Association for Biology Lab Instructors Conference, Major Workshop, €170 honorarium National Inst. for Mathematical and Biological Synthesis, short term research grant: €1700
2004-2010	Alumni Fellowship from the Graduate College at the University of Oklahoma: €22,000 Graduate Research Supplemental Stipend, U. Oklahoma, Dept. Zoology: €2,200
2009	University of Oklahoma Biostation, summer research grant: €2,200
2008	NSF teaching grant to redesign introductory zoology: €1,400 Adams Summer Research Fellowship: €2,200 Gordon Research Conference on the Metabolic Basis of Ecology: Competitive stipend for delivering invited seminar: €1,400
2007	Graduate Student Senate Research Stipend: €400 Adams Summer Research Fellowship: €2,200

- 2006 Adams Summer Research Fellowship: €2,200
 2005 Adams Summer Research Fellowship: €2,200
 Smithsonian Tropical Research Institute, Short Term Fellowship: €2,200
 Honorable Mention: NSF Graduate Research Fellowship

Presentations for Professional Meetings:

- Shik, J.Z. (2018) Nutritional dimensions in insect-fungus co-evolution. Mini Symposium: Fungal ecology and evolution. Section for Ecology and Evolution, University of Copenhagen.
- Pedersen J.S., Krabbe, B.A., Shik, J.Z. (2018) Pharaoh ant workers regulate nutrition to prioritize colony growth over individual survival. International Union for the Study of Social Insects. Brazil.
- Shik, J.Z., Oms, C.S., Arnan, X., Cerda, X., Boulay, R. (2018) Metabolic temperature sensitivity in ants. International Union for the Study of Social Insects. Brazil.
- Oberweiser M, Beres Z, Shik J.Z., Adams, R.M.M. (2017) Unraveling a Panamanian caterpillar/ant mutualism. Ohio State University Student Research Symposium, 2017.
- Mularo, A.J., Shik, J.Z., Adams, R.M.M. (2017) Dynamics of pseudoscorpions in a neotropical rainforest. Ohio State University Student Research Symposium, 2017.
- Kooij, P.W., Gaya, E., Shik, J.Z., Dentinger, B.T.M. On the origin of mutualisms: where did fungus farming in ants begin? European Society of Evolutionary Biology, Groningen, The Netherlands, 2017.
- Kooij, P.W., Gaya, E., Shik, J.Z., Dentinger, B.T.M. On the origin of mutualisms. 8th Brazilian Congress for Mycology, Florianopolis, Brazil, 2016.
- Shik, J.Z., Wcislo, W. T., Boomsma, J.J. Nutrition mediates the expression of cultivar-farmer conflict in a fungus-growing ant. IUSSE Europe, Helsinki, Finland, 2016.
- Rytter, W., Michelsen, A., Shik, J.Z. Tracing the flow of nutrients through the complex symbiotic network of the leafcutter ant *Atta colombica* using stable isotopes. IUSSE Europe, Helsinki, Finland, 2016.
- Rytter, W., Shik, J.Z. The leafcutter lunchbox: linking digestive physiology and foraging behavior of four Panamanian leafcutter ant species. Oikos, Turku, Finland, 2016
- Shik, J.Z., Wcislo, W. T., Boomsma, J.J. Transitions in farming performance across the attine phylogeny. Oikos, Turku, Finland, 2016.
- Shik, J.Z., Wcislo, W. T., Boomsma, J.J. Physiological consequences of social transitions in ants. International Congress of Entomology, Orlando, Florida, 2016.
- Shik, J.Z., Gomez, E., Wcislo, W.T., Boomsma, J.J. Nutrition mediates cultivar-farmer conflict in a primitive fungus-growing ant. European Society for Evolutionary Biology, Lausanne, 2015.
- Wall, B.M., Jones, T.H., Shik, J.Z., Adams, R.M.M. Evolution of alarm signals: a comparative study of exocrine gland chemistry in attine ants with a special focus on alarm pheromones. International Society of Chemical Ecology, Stockholm, 2015.
- Shik, J.Z. Nutritional adaptations in the cultivars grown by fungus-growing ants. Plant-Insect-Microbe Interactions Symposium. University of Copenhagen, Denmark, 2015.
- Kooij, P.W., Shik, J.Z., Gomez, E., Wcislo, W., Boomsma, J.J. Fast-growing fungal crops grown by the ant *Trachymyrmex cornetzi* appear more resistant the fungal pathogen *Escovopsis*. Northwest European Society for the Study of Social Insects, London, 2014.
- Shik, J.Z. Physiological transitions in farming ants. In the symposium: Nutrition: Behavior and Life History, International Society for Behavioral Ecology, New York, 2014.
- Shik, J.Z., Gomez, E., Santos, J.C., Kaspari, M., Boomsma, J.J., Wcislo, W.T. Physiology and the transition from hunting to farming in ants. International Union for the Study of Social Insects, Cairnes, Australia, 2014.
- Shik, J.Z. The evolutionary ecology of fungus growing ants. Smithsonian Fellows Symposium, Panama City, Panama, 2014.
- Shik, J.Z. Linking the traits of male ants with the ecological demands of diverse mating systems. Association of Tropical Biology and Conservation, San Jose, Costa Rica, 2013.
- Silverman, J., Shik, J.Z., Schal, C. Nutrient regulation and post-ingestive utilization in glucose averse German cockroaches. Entomological Society of America, Knoxville, TN, 2012.
- Shik, J.Z. Toward a general life history model of the superorganism. In the symposium: Social

- Insects and the emergence of novelty: from local rules to global behaviour. Entomological Society of America, Knoxville, TN, 2012.
- Shik, J.Z., Kay, A.D., Silverman, J. Energy subsidies from aphid mutualists fuel invasive establishment by Argentine ants. Ecological Society of America, Portland, OR. 2012.
- Shik, J.Z. Towards a comparative physiology of insect societies. The Gordon Research Conference: Metabolic Basis of Ecology, Biddeford, ME, 2012.
- Kay, A.D., Shik, J.Z., Van Alst, A., Miller, K.A., Kaspari, M. Diet composition does not affect ant colony tempo. Entomological Society of America, Reno, NV. 2011.
- Shik, J.Z. Using metabolic scaling to examine how ant colonies work: the case of *Pheidole* majors. IUSSI Congress: The International Union for the Study of Social Insects, Copenhagen, Denmark 2010.
- Shik, J.Z. Metabolic scaling links the traits of individual ants to their colonies. Ecological Society of America, Albuquerque, NM. 2009.
- Shik, J.Z. Ant colony size and the scaling of reproductive effort. Ecological Society of America, Milwaukee, WI. 2008.
- Shik, J.Z. The metabolic implications of ant colony size. Gordon Research Seminar: Metabolic Basis of Ecology, Biddeford, ME. 2008.

Invited Presentations:

- 2018 Lund University, Departmental Seminar, Lund, Sweden
 Smithsonian Tropical Research Institute, Tupper Seminar, Panama
 Centre for Macroecology, Evolution and Climate, University of Copenhagen, Denmark
 Symposium: Latest frontiers in the nutritional ecology of social insects, Entomological Society of America, Vancouver, Canada
- 2017 North Carolina State, Raleigh, USA
 University of Illinois at Urbana-Champaign, USA
 California State University, Fresno, USA
 Hebrew University of Jerusalem, Israel
- 2016 University of Pierre and Marie Curie, Paris, France
 University of Regensburg, Regensburg, Germany
 Symposium: Physiological responses to environmental change, International Congress for Entomology, Orlando, Florida, USA
 Michigan State University, USA
 University of Scranton, Pennsylvania, USA
 Jodrell Laboratory, Royal Botanic Gardens, Kew, London
- 2015 Smithsonian Tropical Research Institute, Panama City, Panama
 Institute of Science and Technology, Vienna, Austria
 Centre for Social Evolution, University of Copenhagen, Denmark
 Centre for Macroecology, Evolution and Climate, University of Copenhagen, Denmark
 University of Oklahoma, Norman, USA
 Universite Paul Sabatier, Toulouse, France
 University of Pierre and Marie Curie, Paris, France
- 2014 Symposium: Nutrition: Behavior and Life History, International Society for Behavioral Ecology, New York
- 2013 Smithsonian Tropical Research Institute: Tupper Talk, Panama
 University of Oklahoma, Norman, Oklahoma
 University of Costa Rica, San Jose: Departmental Seminar
- 2012 Symposium: Social Insects and the emergence of novelty: from local rules to global behaviour. Entomological Society of America, Knoxville, Tennessee
 Gordon Conference Metabolic Ecology, Biddeford, Maine
- 2011 National Evolutionary Synthesis Center, Durham, North Carolina

- North Carolina State University, Department of Entomology
 Eastern Tennessee State University, Department of Biology
 University of Tennessee, Department of Ecology and Evolutionary Biology
- 2010 Smithsonian Tropical Research Institute: Behavior Discussion Group
 Smithsonian Tropical Research Institute: Bambi Seminar on BCI
 University of Oklahoma, Zoology Department Seminar
- 2009 Kansas State University, Seminars in Ecology and Evolutionary Biology
 Departmental retreat of Zoology, Lake Texoma, The University of Oklahoma
- 2008 Gordon Research Seminar: Metabolic Basis of Ecology, Biddeford, Maine. 2008.
 Ecomunch Seminar, Graduate Program in Ecology and Evolutionary Biology, University of Oklahoma
- 2007 Smithsonian Tropical Research Institute: Bambi Seminar on BCI

Specialized Training:

- 2018 Leadership training course, University of Copenhagen, Denmark
 Pedagogy Course, University of Copenhagen, Denmark
- 2008, 2013 Respirometry Course, Sable Systems International, Las Vegas, NV
- 2006 Soil Acarology Course, The Ohio State University Acarology Laboratory, Columbus, OH
- 2005 The Ant Course, California Academy of Sciences & Harvard University Museum of Comparative Zoology, Portal, AZ

TEACHING

Graduate-level course organizer:

- Tropical Behavioural Ecology and Evolution, field course at the Smithsonian Tropical Research Institute (Co-organizer with Rachelle Adams, instructor) - University of Copenhagen and Ohio State University since 2017
- April - May 2011
 April - May 2013
 April - May 2015
 April - May 2017

Undergraduate courses:

- Evolutionary Ecology Fall 2018
 Advanced Ecology Fall 2018
 Concepts in Biology (non-majors) Spring 2010
 Fall 2008
 Spring 2007
- Introductory Zoology Fall 2007
 Spring 2006
- Principles in Ecology Fall 2006
 Spring 2005
 Fall 2005

ACADEMIC SERVICE

Professional Service:

Reviewer: Peer-Reviewed Journals (average 14 reviews per year)

Acta Ethologica, Agricultural and Forest Entomology, Animal Behaviour, Arthropod-Plant Interactions, Behavioral Ecology and Sociobiology, Biological Invasions, Biological Journal of the

Linnean Society, Biology Letters, Current Zoology, Ecography, Ecological Entomology, Ecology, Ecology and Evolution, Ecology Letters, Ecosystems, Entomologia Experimentalis et Applicata, Environmental Entomology, European Journal of Entomology, Evolution, Evolutionary Biology, Functional Ecology, Global Change Biology, Insect Conservation and Diversity, Insects, Insectes Sociaux, Journal of Animal Ecology, Journal of Applied Entomology, Journal of Asia-Pacific Entomology, Journal of Insect Behavior, Journal of Insect Physiology, Journal of Insect Science, Myrmecological News, Naturwissenschaften, Oecologia, Oikos, PeerJ, PLoS One, Proceedings of the Royal Society B, Rangeland Ecology and Management, Revista Brasileira de Entomologia, Scientific Reports

Reviewer: Grant Agencies

National Science Foundation (USA), Sapere Aude (Denmark), US-Israel Binational Agricultural Research and Development Fund (BARD: US-Israel), Binational Science Foundation (BSF: US-Israel), Austrian Science Fund

Grant Review Panels

Fundação para a Ciência e a Tecnologia, I. P. (FCT) (Reviewed 25 proposals (15 as lead reviewer) for the Central Portuguese Funding Agency, April 2018)

Current Professional Affiliations

International Union for the Study of Social Insects

Symposium Organizer

2018: Social insect eco-physiology across scales, International Union for the Study of Social Insects (every 4th year), Guarujá, Brazil (co-organized with Sara Leonardt and Clint Penick)

2016: Physiological responses to environmental change, International Congress for Entomology (every 4th year), Orlando, Florida, USA (Co-organized with Sarah Diamond)

Institutional Service:

Student Advising

- 2018- Postdoctoral Researcher Antonin Crumiere
- 2018-2019 Masters student Zsuzsanna Csontos, thesis “*The nutritional basis of host specificity in insect pathogens*” (co-supervised with Henrik de Fine Licht)
- 2018 Bachelors student Maria Scotwin, thesis: “*The nutritional ecology of crop domestication in fungus farming ants*”
- 2018 Masters student Mads Wolter Nielsen (co-supervised with Dr. Anders Michelsen)
- 2017 Hosted an international DNA barcoding summit in Copenhagen to discuss cryptic diversity in a Panamanian fungus growing ant community
Bachelors students Christoffer Bergstedt and Birla Krabbe on “*The nutritional ecology of invasive *Monomorium ants*”*, (co-supervised with Dr. Jes Pedersen)
- 2015-2017 Masters student at the University of Copenhagen, on attine nutritional ecology, Winnie Rytter
- 2013-2014 Masters student Angelo Concilio, University of Turino, Smithsonian Tropical Inst.
Research Intern at the Smithsonian Tropical Research Institute, Mariana Franco
- 2011-2013 Supervised two undergraduate field assistants, Matt Green and Shanna Wood, during postdoctoral research at North Carolina State University.
- 2010 Supervised an NSF REU undergraduate, Deana Flatt, during her first trip to a tropical forest. Guided her as she assisted with my research and helped her develop her own project, which was published in *Naturwissenschaften*
- 2004-2009 Undergraduate Research Assistants in the Kaspari lab at the University of Oklahoma: Shelly Sudberry, Matt Dowling, Julie Miller, Risa Walters, Deanna Flatt

Hosting International Students

- 2018 Hosting PhD student Hugo Merienne from Research Center on Animal Cognition in the university Paul Sabatier, in Toulouse, France to perform insect metabolic respirometry experiments (*planned*)
- 2017 Hosted PhD student Cristele Sanchez Oms from the University of Tours (France) to study adaptive metabolic physiology of ants from an elevational gradient (collaboration with Dr. Xim Cerda and Dr. Raphael Boulay)
- 2016 Hosted and supervised ERASMUS student Pol Lannes Salvado from the University of Barcelona, Spain.

Guest Lectures

- 2013 Field Research Course for Latin American Researchers, Smithsonian Tropical Research Institute, Panama
- 2012 Organized workshop on ant ecology lab at the National Conference: Association for Biology Lab Instructors Conference, Chapel Hill, North Carolina
- 2011 Graduate Student Seminar in Insect Ecology, '*Energy Flow, Nutrients, Ecosystem Function*', North Carolina State University
- 2010 Undergraduate Zoology Society, '*How to study ants*', The University of Oklahoma
 Concepts in Biology, '*Community ecology*', The University of Oklahoma
- 2009 General Introductory Biology Lecture, '*Community ecology and ants*', U. Oklahoma
- 2005-2007 Entomology Course, '*Hymenoptera*', The University of Oklahoma

Academic committees & service

- 2018 Panelist and speaker in ERC Starting Grant Information Meeting at KU
- 2017-2018 Section of Ecology and Evolution weekly seminar organizer
 BIO-Conference organizing committee
- 2009 Zoology representative in the graduate student senate
- 2008 Graduate student Zoology Department faculty representative
- 2007 Graduate student representative on Zoology Department admissions committee

Community Service:

Public outreach

- 2014-2017 Culture Night, organized the social insect booth, Copenhagen, Denmark
- 2016 Consulted with the Copenhagen Zoo on a new exhibit on ecology and evolutionary biology and a new leafcutter ant husbandry project
- 2015 Collaborated with Dr. Jacobus Boomsma, Dr. Christian Peeters, and artist Naret Phansua on educational cartoon titled 'The fungus growing ants: from simple gardening to industrial farming'. This movie is being shown in natural history museums in France and is planned to be used in Denmark as well.
- 2012 Talk at high school: The North Carolina School of Science and Mathematics, '*The Social Insects*'
- 2010 Panel on '*Careers in the Biological Sciences*', Graduate student representative, The University of Oklahoma
 Darwin Day lecture for the lay public, '*The evolution of eusociality*', The University of Oklahoma

In the Media

- Substantial coverage in September 2017 for my ERC Starting Grant by the Danish press (<http://magisterbladet.dk/news/2017/september/myrererdygtigelandmaend>)
- My 2016 PNAS paper had an Almetric score of 98, ranked in the 97th percentile of tracked articles of similar age in all journals, having been covered by several major news outlets (<http://www.pnas.org/content/113/36/10121.full?tab=metrics>)
- <http://riaus.tv/blogs/do-ant-farmers-forage-their-%E2%80%98lunchbox%E2%80%99>

(Australia's Science Channel)

-Smithsonian Institution Newsletter: 'How much energy is needed to farm fungus?'

(http://www.jonathanshik.com/uploads/2/6/2/9/26297749/strinews_aug_22_2014.pdf)

-ScienceDaily.com: 'Research predicts growth, survival of 'superorganism' ant colonies'

(<http://www.sciencedaily.com/releases/2012/12/121219092819.htm>)

-Association for Biology Laboratory Education

(<http://www.ableweb.org/conf/able2012/photopub/index2.html>)