Jonathan Z. Shik

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Nationality: USA • Marital status: Anne Sofie Kruse (Danish) with two children (1 & 5 years old)

RESEARCH INTERESTS

Evolutionary biology, ecology, nutritional and metabolic physiology, ethology, molecular approaches, entomology, symbiosis, mycology, myrmecology, experimental design

EDUCATION & APPOINTMENTS

2021-present	**Associate Professor (tenured), Section for Ecology & Evolution, UCPH**
2019-present	**Research Associate, Smithsonian Tropical Research Institute**
2018-2021	Assistant Professor, Section for Ecology & 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,
2013-2014	Postdoctoral Fellow, Smithsonian Tropical Research Institute
2011-2013	Postdoctoral Research Associate, Dept. of Entomology, North Carolina State University
2010	PhD, University of Oklahoma, USA
2003	BSc, Biology, McGill University, Canada

PERIODS OF LEAVE

2020	Paternity leave: 27/1/2020 – 14/4/2020, 12 weeks in total.
2024	Paternity leave: 27/5/2024 – 15/8/2024, 12 weeks in total.

GRANTS AND AWARDS

TOTAL FUNDING SINCE 2005: ~ €3,172,000 (23.630.000 DKK)

2023	Carlsberg Semper Ardens: Accelerate Grant	4.966.182 DKK
	Danish Research Council (DFF I FNU) Project 1 (*start date delayed until 2024*)	2.878.000 DKK
2022	Villum Experiment Grant	1.993.568 DKK
2019	Acceptance to the UCPH Forward Program for Excellence in Research, *following competitive university-wide selection process*	19.000 DKK
2017	European Research Council Starting Grant (PI) (*delayed start until 2019*)	>11 million DKK
2017	Finalist for a CNRS position at Pierre & Marie Curie University (Paris)	
2017	Job offer at Hebrew University (Israel), *Turned down following successful ERC grant, with the decision to remain at UCPH*	

2014	BIO Incentive grant from UCPH (Co-PI) for PhD Tropical Behavioral Ecology & Evolution course	67.000 DKK
2013	EU Marie Skłodowska Curie International Postdoctoral Fellowship (*delayed start until 2014*)	1.7 million DKK
2013	Smithsonian Institution Postdoctoral Fellowship	400.000 DKK
2012	National Institute for Mathematical and Biological Synthesis	12.500 DKK
2004-2010	Alumni Fellowship, University of Oklahoma, recurred annually	160.000 DKK
Pre-2010	Competitive research grants secured during PhD (*included a STRI Short Term Fellowship to perform research in Panama*)	138.000 DKK

Publications & Presentations

•45 publications in peer-reviewed journals.
•982 citations in Google Scholar; h=22, i10=31 (Google Scholar).
•49 invited oral presentations at national & international meetings, and departmental seminars.
•34 contributed oral presentations at national & international meetings.
•20 contributed poster presentations at national and international meetings.

STUDENT AND POSTDOC SUPERVISION

ONGOING POSTDOCTORAL RESEARCHERS

-Dr. Caio Leal-Dutra (2020-24): *Genomics and evolution of domesticated cultivars of leafcutter ants (main supervisor)*
-Dr. Ayoub Stelate (2023-2026): Advanced imaging of a domesticated fungal symbiont *(main supervisor)*
-Dr. Suzanne Schmidt (2022-2024): Culturing *Termitomyces* fungi for human consumption (*co-supervisor, Prof. Michael Poulsen, main supervisor*)

ONGOING PHD RESEARCHERS

- Asta Rødsgaard-Jørgensen (2023-26): *Molecular mechanisms of crop domestication in leafcutter ants (main supervisor)*
- Aoife O'Brien (2024-27): *Nutritional mechanisms insect declines in Denmark (main supervisor, Prof. Hans Henrik Bruun, UCPH, co-supervisor)*
- Sabrina Ferreira de Santana (2023-24): *Bioinformatics of the viruses inhabiting fungi* (*hosting*)
- Ana Cuesta (2022-25): *Microbial symbionts inhabiting the guts of social insects* (*co-supervisor, Sandra Andersen, GLOBE main supervisor*)

ONGOING AND NEW GRADUATE & UNDERGRADUATE PROJECTS

-Mads Ditlevsen MSc thesis: "*Molecular and nutritional analyses of plant fragments foraged by free-ranging leafcutter ants*"
-Kira Pejtersen, MSc thesis: "*Mechanisms of nutritional reward formation in the domesticated fungal crop farmed by leafcutter ants*"
-Katrine Ottesen, MSc thesis: "*Genomic evolution of mitochondria inhabiting fungal cultivars of farming ants*"
-Sarah Kock, BSc thesis: "*DNA barcoding of attine symbioses from Panama*"
-Ronan Merlotti: BSc thesis: "*Development of ant husbandry techniques*"
-Karl Fakentorp (starting Block 3, 2025): Bachelors thesis, "*Tissue specific foraging by an insect pathogenic fungus*"
-Malthe Rasmussen (starting Block 3, 2025): BSc thesis, "*Tissue specific foraging by an insect pathogenic fungus*"

STUDENTS (SINCE 2017) (SEE TEACHING PORTFOLIO FOR DETAILS)

• **4** Postdocs / • **3** PhDs / • **20** MSc students / • **20** BSc students / • **3** Visiting PhD students / • **6** BSc international research interns

MAIN COLLABORATORS (IN ALPHABETICAL ORDER), FROM 10 COUNTRIES

-Staff Scientist William Wcislo, Smithsonian Tropical Research Institute, Panama
-Assistant Professor Brian Sedio, University of Texas, USA & STRI
-Associate Professor Xavier Arnan, CREAF, Spain
-Lecturer, Tom Bishop, Cardiff University, United Kingdom
-Associate Professor Kristine Bohmann, UCPH, Denmark
-Professor Jacobus J. Boomsma, UCPH, Denmark
-Professor Hans Henrik Bruun, UCPH, Denmark
-Professor David Donoso, Escuela Politecnica Nacional, Quito, Ecuador
-Associate Professor Vasilis Kokkoris, Vrije University, The Netherlands
-Professor Audrey Dussutour, CNRS, Université Paul Sabatier, Toulouse, France
-Associate Professor Henrik de Fine Licht, UCPH, Denmark
-Professor Michael Poulsen, UCPH, Denmark
-Professor Heloise Gibb, La Trobe University, Australia
-Senior Lecturer Juliano Morimoto, University of Aberdeen, UK
-Assistant Professor Emily Meineke, University of California Davis, USA
-Professor Anders Michelsen, UCPH, Denmark
-Professor Riikka Rinnan, UCPH, Denmark
-Professor Andre Rodgrigues, São Paulo State University, Brazil

SERVICE AS EDITOR

2019-2025 Associate Editor, *Journal of Animal Ecology* (IF 4.46), handle ~12 papers per year

SERVICE AS PEER-REVIEWER FOR JOURNALS (IN ALPHABETICAL ORDER), *~12 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, Journal of Thermal Biology, Myrmecological News, Naturwissenschaften, Oecologia, Oikos, PeerJ, PLoS One, Proceedings of the Royal Society B, Rangeland Ecology and Management, Revista Brasileira de Entomologia, Scientific Reports, Trends in Plant Science

SERVICE AS PEER-REVIEWER FOR GRANTING AGENCIES

2022	National Science Center, Poland
2019	European Research Council (Advanced Grant)
2018	National Science Foundation, USA
	Austrian Science Fund, Austria
2017	US-Israel Binational Agricultural Research and Development Fund (BARD: US-Israel)
	Binational Science Foundation (BSF: US-Israel)

SERVICE AS PEER-REVIEWER ON GRANT REVIEW PANEL

2024	Smithsonian Tropical Research Institute, Tupper Fellowship Committee, USA
2018	Fundação para a Ciência e a Tecnologia, I. P. (FCT) (Reviewed 25 proposals (15 as lead reviewer) for the Central Portuguese Funding Agency)

UNIVERSITY SERVICE (RECENT)

2024	Development of curricula for newly established Fundamentals of PhD faculty-level course
2024-2027	Diversity, Equity & Inclusion Committee, Department of Biology, UCPH (DEI)

2024-2027	Department Faculty Board, Department of Biology, UCPH (DFB)
2024	Chair BIO PhD student evaluation committee (Guangshuo Li)
2022-2025	Strategic Research Committee, Department of Biology, UCPH (BIO-SFU) (Chair, starting January, 2025)
2022	Chair BIO PhD student evaluation committee (Veronica Sinotte)
2021	Sustainability Committee, Department of Biology, UCPH
2018	Panelist and speaker in ERC Starting Grant Information Meeting, UCPH
2017-2018	Section for Ecology and Evolution weekly seminar organizer, UCPH
2017	BIO-Conference organizing committee, UCPH

PEDAGOGICAL TRAINING

2024	Course for PhD supervisors in Responsible Conduct of Research
2024	Course in PhD supervision, UCPH
2020-2021	Teaching and Learning in Higher Education (Universitetspædagogikum), UCPH
2018	Introduction to University Pedagogy, UCPH

TEACHING EXPERIENCE

My teaching and assessment resume spans over 20 years, and includes many class formats at the BSc, MSc, and PhD levels: 1) lectures with fewer than 10 to over 150 students, 2) research-based courses in the field with excursions lasting one day to six weeks, 3) lab-based exercises (including introduction to R-based statistics), and 4) exercises integrating field, discussions of theory, and lab research. I also have experience organizing and coordinating entire courses. My current teaching includes the following graduate-level courses:

Invasion Biology (course responsible since 2020)	Spring 2019-2024
Advanced Ecology (assistant coordinator)	Fall 2018-2024
Evolutionary Ecology (course responsible since 2021)	Fall 2018-2024
Population Biology (lecturer & exercise coordinator)	Fall 2019-2024
Macroecology (lecturer & examiner)	Fall 2017-2024
Conservation Biology (Internal examiner)	Winter 2021-2023

PRESENTATIONS

Invited seminars

2024	Vrije Universiteit Amsterdam: Invited Departmental Seminar Speaker (Netherlands, 2025) [planned]
	Gordon Research Conference in Animal Microbe Symbiosis: Invited Speaker (USA, summer 2025) [planned]
	European Society for Evolutionary Biology, Invited Speaker (Spain, summer 2025) [planned]
	Nutrition Meeting, Bonn, Germany (April 2024)
2023	Faculty lunch seminar series, UCPH
2022	Symposium: Nutritional dimensions in social insect evolution and ecology, International Union for the Study of Social Insects, San Diego, USA
	University of Copenhagen, Department of Biology, Section for Ecology & Evolution
2021	Tupper Seminar, Smithsonian Tropical Research Institute, Panama (delivered online)
	Symposium: Communal Nutrition, International Union for the Study of Social Insects, Toulouse, France (via Zoom)
2020	Liverpool University, Liverpool, UK (via Zoom)
	Novo Nordisk Foundation Center for Basic Metabolic Research, UCPH (via Zoom)
	Okinawa Institute of Science and Technology, Japan
2019	Danish Oikos Society, Aarhus, Denmark
2018	Lund University, Departmental Seminar, Lund, Sweden

Tupper Seminar, Smithsonian Tropical Research Institute, Panama
Centre for Macroecology, Evolution and Climate, UCPH, Denmark
Symposium: Latest frontiers in the nutritional ecology of social insects, Entomological Society of America, Vancouver, Canada

2017 North Carolina State University, Raleigh, USA
University of Illinois at Urbana-Champaign, Urbana-Champaign, USA
California State University, Fresno, USA

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, East Lansing, Michigan, USA
University of Scranton, Pennsylvania, USA
Jodrell Laboratory, Royal Botanic Gardens, Kew, London

2015 Tupper Seminar, Smithsonian Tropical Research Institute, Panama City, Panama
Institute of Science and Technology, Vienna, Austria
Centre for Social Evolution, UCPH, Denmark
Centre for Macroecology, Evolution and Climate, UCPH, 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 Tupper Seminar, Smithsonian Tropical Research Institute, Panama City, 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, Raleigh, USA
Eastern Tennessee State University, Johnson City, USA
University of Tennessee, Knoxville, USA

2010 Smithsonian Tropical Research Institute: Behavior Discussion Group, Panama
Smithsonian Tropical Research Institute: Bambi Seminar on Barro Colorado Island, Panama
University of Oklahoma, Norman, Oklahoma

2009 Kansas State University, Manhattan, USA
Departmental retreat of Zoology, Lake Texoma, The University of Oklahoma

2008 Gordon Research Seminar: Metabolic Basis of Ecology, Biddeford, Maine. 2008.
Ecomunch Seminar, University of Oklahoma, Norman, USA

2007 Smithsonian Tropical Research Institute: Bambi Seminar on Barro Colorado Island, Panama

Contributed talks at professional meetings

Shik, J.Z. & Leal-Dutra C (2023) Nutritional rewards can mediate higher-level homeostasis in a tightly integrated leafcutter ant-fungus cultivar symbiosis. The Cellular Mechanics of Symbiosis Meeting, Heidelberg (Germany)

Shik, J.Z. (2021) Deconstructing a nutritional symbiosis to explore the rise of fungus-farming ants. European International Union for the Study of Social Insects, Toulouse, France (moved online).

Shik, J.Z. (2021) British Ecological Society meeting, Liverpool, UK (oral presentation canceled due to COVID).

Shik, J.Z. (2020) Nutritional niches reveal domestication tradeoffs in fungus-farming ants. International Congress of Entomology (oral presentation canceled due to COVID)

Shik, J.Z. (2018) Nutritional dimensions in insect-fungus co-evolution. Mini Symposium: Fungal ecology and evolution. Section for Ecology and Evolution, UCPH, Denmark.

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. Florianopolis, Brazil.
Shik, J.Z., Wcislo, W. T., Boomsma, J.J. (2016) Nutrition mediates the expression of cultivar-farmer conflict in a fungus-growing ant. IUSSI Europe, Helsinki, Finland.
Shik, J.Z., Wcislo, W. T., Boomsma, J.J. (2016) Transitions in farming performance across the attine phylogeny. Oikos, Turku, Finland, 2016.
Shik, J.Z., Wcislo, W. T., Boomsma, J.J. (2016) Physiological consequences of social transitions in ants. International Congress of Entomology. Orlando, Florida, USA.
Shik, J.Z. (2015) Nutritional adaptations in the cultivars grown by fungus-growing ants. Plant-Insect-Microbe Interactions Symposium. UCPH, Denmark.
Shik, J.Z. (2014) Physiological transitions in farming ants. In the symposium: Nutrition: Behavior and Life History. International Society for Behavioral Ecology, New York, USA.
Shik, J.Z., Gomez, E., Santos, J.C., Kaspari, M., Boomsma, J.J., Wcislo, W.T. (2014) Physiology and the transition from hunting to farming in ants. International Union for the Study of Social Insects. Cairnes, Australia.
Shik, J.Z. (2014) The evolutionary ecology of fungus growing ants. Smithsonian Fellows Symposium, Panama City, Panama.
Shik, J.Z. (2013) Linking the traits of male ants with the ecological demands of diverse mating systems. Association of Tropical Biology and Conservation, San Jose, Costa Rica.
Shik, J.Z. (2012) 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.
Shik, J.Z., Kay, A.D., Silverman, J. (2012) Energy subsidies from aphid mutualists fuel invasive establishment by Argentine ants. Ecological Society of America, Portland, OR.
Shik, J.Z. (2012) Towards a comparative physiology of insect societies. The Gordon Research Conference: Metabolic Basis of Ecology, Biddeford, ME.
Shik, J.Z. (2009) Metabolic scaling links the traits of individual ants to their colonies. Ecological Society of America, Albuquerque, NM.
Shik, J.Z. (2008) Ant colony size and the scaling of reproductive effort. Ecological Society of America, Milwaukee, WI.
Shik, J.Z. (2008) The metabolic implications of ant colony size. Gordon Research Seminar: Metabolic Basis of Ecology, Biddeford, ME. 2008.

Contributed talks (*not presented by me*)

Leal-Dutra C.A., **Shik J.Z.** (2024) Taming the beast: Insights on lineage-specific genome evolution and signatures of domestication in an ant-fungus symbiosis. Brazilian Mycological Congress, Brazil.
Leal-Dutra C.A., Yuen L.M., Conlon B.H., **Shik J.Z**. (2022) A domesticated fungal cultivar recycles its cellular contents as nutritional rewards for its leafcutter ant farmers. International Union for the Study of Social Insects (IUSSI) European Society for Evolutionary Biology, Groningen, The Netherlands.
Leal-Dutra C.A., Yuen L.M., Conlon B.H., **Shik J.Z.** (2022) A domesticated fungal cultivar recycles its cellular contents as nutritional rewards for its leafcutter ant farmers. Gordon Research Seminar in Cellular and Molecular Fungal Biology, New Hampshire, USA.
Leal-Dutra C.A., Yuen L.M., Conlon B.H., **Shik J.Z**. (2021) A domesticated fungal cultivar recycles its cellular contents as nutritional rewards for its leafcutter ant farmers. International Union for the Study of Social Insects (IUSSI), North-West Europe Annual Meeting, Online.
Conlon B.H., **Shik, J.Z**. (2021) Inter-kingdom communication between ants and fungi. Section for Microbial and Chemical Ecology, Department of Biotechnology and Biomedicine, The Technical University of Denmark, Kongens Lyngby, Denmark.
Conlon, B.H., **Shik, J.Z**. (2020) The key to a good relationship: inter-kingdom communication in a fungal-ant nutritional symbiosis. International Union for the Study of Social Insects (IUSSI) North-West Europe Annual Meeting, Online.

Bolander, M., Andersen J.E., **Shik, J.Z.** (2021) Nutrient flow through the domesticated farming systems of the Panamanian leafcutter ant *Acromyrmex echinatior*. NWE-IUSSI Winter Meeting, Online.

Crumiere, A., **Shik, J.Z.** (2019) Nutritional provisioning of fungal cultivars by leafcutter ants. European Society of Evolutionary Biology, Turku Finland.

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. Florianopolis, Brazil.

Kooij, P.W., Gaya, E., **Shik, J.Z.,** Dentinger, B.T.M. (2017) On the origin of mutualisms: where did fungus farming in ants begin? European Society of Evolutionary Biology, Groningen, The Netherlands.

Kooij, P.W., Gaya, E., **Shik, J.Z.,** Dentinger, B.T.M. (2016) On the origin of mutualisms. 8th Brazilian Congress for Mycology, Florianopolis, Brazil.

Kooij, P.W., **Shik, J.Z.,** Gomez, E., Wcislo, W., Boomsma, J.J. (2014) 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, UK.

Silverman, J., **Shik, J.Z.,** Schal, C. (2012) Nutrient regulation and post-ingestive utilization in glucose averse German cockroaches. Entomological Society of America, Knoxville, Tennessee, USA.

Kay, A.D., **Shik, J.Z.,** Van Alst, A., Miller, K.A., Kaspari, M. (2011) Diet composition does not affect ant colony tempo. Entomological Society of America, Reno, Nevada, USA.

Poster presentations

de Santana SF, Leal-Dutra CA, Olmo RP, Fonseca PLC, **Shik JZ**, Aguiar ERGR (2024) Micovírus que habitam o cultivo fúngico de formigas-cortadeiras desencadeiam respostas imunológicas de RNAi em seu hospedeiro. Brazilian North and Northeast Bioinformatics Symposium, Brazil.

de Santana SF, Leal-Dutra CA, Olmo RP, Fonseca PLC, **Shik JZ**, Aguiar ERGR (2024) Mycoviruses inhabiting the fungal cultivar of leafcutter ants elicit defensive RNAi immune responses in their fungal host. 35th Brazilian Virology Congress, Brazil.

Rødsgaard-Jørgensen A, Leal-Dutra C, Stelate A, **Shik JZ** (2024) The genomic structure of the domesticated multinucleate fungus farmed by leafcutter ants. Gordon Research Conference in Cellular and Molecular Fungal Biology, New Hampshire, USA.

Leal-Dutra C, Vizueta J, Baril T, Kooij PW, Rødsgaard-Jørgensen A, Conlon BH, Croll D, **Shik JZ** (2024) Insights on lineage-specific genome evolution and signatures of domestication in an ant-fungus symbiosis, International Mycological Congress, Maastricht, Netherlands

de Santana SF, Leal-Dutra CA, Olmo RP, Fonseca PLC, **Shik JZ**, Aguiar ERGR (2024) Characterization of RNAi core genes and its small RNA products in the fungus domesticated by leafcutter ants. International Mycological Congress, Maastricht, Netherlands. [Best Poster award from BMC]

Kooij PW, Dentiger B, **Shik JZ**, Gaya E (2024) Resolving taxonomic relationships between free-living and symbiotic fungi. International Mycological Congress, Maastricht, Netherlands

Schmidt S, Bille BJ, VIssing FK, Kock CS, Gaal KM, Sørensen C, Kochanowski M, Kolotchélèma Silue S, Koné NA, **Shik JZ**, Rosendahl S, Poulsen M (2024) What can we learn from termites about fungal cultivation? Annual Congress of the Danish Microbiological Society (DMS), Copenhagen, Denmark.

Leal-Dutra CA, Yuen LM, Conlon BH, **Shik JZ** (2022) Gordon Research Conference in Cellular and Molecular Fungal Biology, New Hampshire, USA

De Fine Licht HH, Csontos Z, Hansen AKK, Nielse PJDN, Langkilde EB, **Shik JZ** (2022) Host specificity influences how fungal pathogens navigate nutritional landscapes of their insect hosts. European Society for Evolutionary Biology, Prague, Czech Republic.

Conlon, B.H., **Shik, J.Z.** (2021) The key to a good relationship: inter-kingdom communication in a fungus-ant nutritional symbiosis. Annual Congress of the Danish Microbiological Society (DMS), Copenhagen, Denmark.

Leal-Dutra C.A., Yuen L.M., Conlon B.H., **Shik J.Z.** (2021) A domesticated fungal cultivar recycles its cellular contents as nutritional rewards for its leafcutter ant farmers. Annual Congress of the Danish Microbiological Society (DMS), Copenhagen, Denmark.

Contreras Serrano, M., Conlon, B., **Shik, J.Z**. (2020) Resiliency to plant toxins in domesticated fungal

cultivars of leafcutter ants. International Union for the Study of Social Insects, NW Europe meeting, Online.

Bolander, M., Elmgaard Andersen, J., Crumiere, A., **Shik, J.Z.** (2020) Gardening behaviors in leafcutter ants. International Union for the Study of Social Insects, NW Europe meeting, Online.

Oberweiser, M., Beres, Z., **Shik, J.Z.,** Adams, R.M.M. (2017) Unraveling a Panamanian caterpillar/ant mutualism. Ohio State University Student Research Symposium, Columbus, USA.

Mularo, A.J., **Shik, J.Z.,** Adams, R.M.M. (2017) Dynamics of pseudoscorpions in a neotropical rainforest. Ohio State University Student Research Symposium, Columbus, USA.

Rytter, W., Michelsen, A., **Shik, J.Z.** (2016) Tracing the flow of nutrients through the complex symbiotic network of the leafcutter ant *Atta colombica* using stable isotopes. IUSSI Europe, Helsinki, Finland.

Rytter, W., **Shik, J.Z**. (2016) The leafcutter lunchbox: linking digestive physiology and foraging behavior of four Panamanian leafcutter ant species. Oikos, Turku, Finland.

Wall, B.M., Jones, T.H., **Shik, J.Z.,** Adams, R.M.M. (2015) 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, Sweden.

Shik, J.Z., Gomez, E., Wcislo, W.T., Boomsma, J.J. (2015) Nutrition mediates cultivar-farmer conflict in a primitive fungus-growing ant. European Society for Evolutionary Biology, Lausanne, Switzerland.

Shik, J.Z. (2010) Using metabolic scaling to examine how ant colonies work: the case of *Pheidole* majors. The International Union for the Study of Social Insects, Copenhagen, Denmark.

Symposium organizer

2023 International Symposium on Social Evolution, over 80 attendees, attained Carlsberg funding

2018 *Social insect eco-physiology across scales*, International Union for the Study of Social Insects (every 4th year), Guaruja, Brazil (Co-organized)

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

OUTREACH ACTIVITIES

Consulting and presentations

2024 Presentation to > 100 people from the general public at the Fungus Festival, hosted by UCPH

2022 Interviewed by TV2 about ERC-funded research

2021-present Consulting with the Copenhagen Zoo, Advised on the establishment and maintenance of a leafcutter ant colony in the permanent exhibit

2021-2023 Consultant for the National Geographic Documentary “Queens” about the natural history of leafcutter ant queens

2020 Blog post for International Union for the Study of Social Insects NW Europe, monthly newsletter

2018 Panelist and speaker in ERC Starting Grant information meeting at UCPH

2014-present Culture Night, an annual Friday evening event mid-October, for which I 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 Professors Jacobus Boomsma and Christian Peeters, and artist Naret Phansua on educational cartoon titled ‘*The fungus growing ants: from simple gardening to industrial farming*’. This movie was shown in natural history museums in France and is planned to be used in Denmark as well.

2013 Association for Biology Laboratory Education, led symposium participants in a field and lab exercise about ants. Durham, North Carolina, USA.

2012 Talk at high school: The North Carolina School of Science and Mathematics, ‘*The Social Insects*’. Raleigh, North Carolina, USA.

2010 Panel on *'Careers in the Biological Sciences'*, Graduate student representative, The University of Oklahoma, Norman, USA.
2010 Darwin Day lecture for the lay public, *'The evolution of eusociality'*, The University of Oklahoma, Norman, USA.

In the media

2024 CORDIScovery podcast, 'Hidden communication' through the European Research Commission
2023 Articles about recent papers from my research group in Carlsbergfond Magazine, Horizon website, Cordis website
2021 Coverage of 2021 Ecology Letters paper by ERC commission (interview and video for general audience)
2020 Media coverage of my 2020 paper in *Nature Ecology and Evolution*, Altmetric score: 97th percentile (ranked 7,844th) of 381,140 tracked articles
-Article by the European Research Council in the 'research stories' section of their website
-TV2 News televised Interview show
-Weekendavisen (Danish newspaper) "*Hvis Jens Hansen var en myre*"
-Smithsonian Institution Newsletter "*The Darwinian diet: you are what you eat*"
-COSMOS magazine
-The Statesman (Indian newspaper)
-Press release covered by: Phys.org, EurekAlert, ScienMag, AZO Life Sciences, IfIscience
2017 Coverage of my ERC Starting Grant
-Magisterbladet (Danish newspaper) "*Myrer er dygtige landmænd*"
2016 Media coverage of my 2016 paper in *Proceedings of the National Academy of Sciences*, Altmetric score: 97th percentile
-Weekendavisen (Danish newspaper) "*Med gødning skal svampen tæmmes*"
-Videnskab.dk (Danish magazine)
2016 Media coverage of my 2016 paper in *Animal Behaviour*
-Australia's Science Channel "*Do ant farmers forage with a lunchbox*"?
2014 Smithsonian Institution Newsletter "*How much energy is needed to farm fungus*?"
2012 Media coverage of my 2012 paper in *Biology Letters*
-ScienceDaily.com "*Research predicts growth, survival of 'superorganism' ant colonies*"

OTHER ACADEMIC EXPERIENCES

Workshops Ant Biodiversity Data Synthesis Meeting, Okinawa Institute of Technology, Japan (2019)
DNA barcoding meeting, Diversity in a Panamanian fungus growing ant community, UCPH, Denmark (2017)

Courses since PhD
Respirometry Course, Sable Systems International, Berlin, Germany (2013)
Respirometry Course, Sable Systems International, Las Vegas, NV (2008)
Soil Acarology Course, The Ohio State University Acarology Laboratory, Colombus, OH, USA (2006)
The Ant Course, California Academy of Sciences & Harvard University Museum of Comparative Zoology, Portal, AZ (2005)

Memberships
European Society for Evolutionary Biology
International Union for the Study of Social Insects
British Ecological Society
Danish Oikos Society