

Chelsea N. Cook, PhD

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PROFESSIONAL APPOINTMENTS

Assistant Professor Marquette University	2020 – Present
Chief Science Officer and Co-Founder HiveTech Solutions	2016 – Present
National Institutes of Health Postdoctoral Fellow Arizona State University Ruth L. Kirschstein National Research Service Award <i>The Role of Social Environment on Learning and Gene Regulation in Honey Bees</i>	2018 – 2020
Postdoctoral Researcher Arizona State University <i>Multiscale Model of Exploration-Exploitation Trade-Off: From Genes to Collective</i> Advised by: Dr. Brian Smith and Dr. Noa Pinter-Wollman	2016 – 2020

EDUCATION

University of Colorado, Boulder – Boulder, Colorado Ph.D. Ecology and Evolutionary Biology Dissertation Title: <i>Stay Cool: Exploring the Group Performed Thermoregulatory Fanning Behavior in Honey bees</i> Advised by: Dr. Michael Breed	2010 – 2016
State University of New York, Cortland – Cortland, New York B.S. Biology, Summa cum laude Chemistry minor	2006 – 2009

GRANTS AND SCHOLARSHIPS

**Indicates Undergraduate Mentee*

25 Grants and Scholarships totaling \$2,291,976 with funding from NSF, NIH, and the USDA as well as state and local agencies.

2023

- 25.) United States Department of Agriculture Sustainable Agriculture Research and Education Grant. **\$15,000.**
Awarded to Graduate Student Justine Nguyen.

“Investigating the effect of a commonly used apiculture antibiotic on honeybee colony thermoregulation and health”

- 24.) National Science Foundation. PI. Integrative Organismal Systems. **\$754,826**.
“Balancing Social and Ecological Information to Collectively Manage Dynamic Environments”.

2022

- 23.) National Science Foundation. Graduate Research Fellowship. **\$150,000** over 3 years.
Awarded to Graduate Student Rachael Halby.
“Does social enrichment enhance thermoregulatory stress response in social animals?”

2021

- 22.) Colorado Office of Economic Development and International Trade Advanced Industries Grant. Awarded to HiveTech Solutions. **\$500,000**

2018

- 21.) US Department of Agriculture Small Business Innovation Research Grant, Phase 2 (USDA SBIR), Co-PI, **\$599,900**
“Honey bee health monitoring and management system to improve survival rates and colony strength”
- 20.) National Institutes of Health Ruth L. Kirschstein National Research Service Award Postdoctoral Fellowship (NIH NRSA F32), National Institute of General Medicine Sciences. 2018-2020, PI, **\$115,000**
“The role of social environment on learning and gene regulation”

2017

- 19.) Arizona State University Fostering Post-Doctoral Research in the Life Sciences with Dr. Simona Kraberger, **\$3,750**.
“Bee-nereal disease: Investigating sexual transmission of viruses in honey bees”
- 18.) US Department of Agriculture Small Business Innovation Research Grant (USDA SBIR), Phase 1, Co-PI, **\$96,000**
“Honeybee hive monitoring system for varroa mite management & honeybee health”

2016

- 17.) New Venture Challenge University of Colorado, 1st Place. **\$10,000**
- 16.) Women’s Entrepreneurial Award, **\$10,000**

2015 and earlier

- 15.) 2015 Undergraduate Research Opportunity Grant with *Rachael Kaspar, **\$2,800**
- 14.) 2015 Doctoral Dissertation Completion Fellowship, Ecology and Evolutionary Biology Department, CU Boulder. **\$8,000**
- 13.) 2014 National Science Foundation Doctoral Dissertation Improvement Grant (NSF DDIG), **\$16,896**

“Stay cool: Connecting the proximate physiological mechanisms to the performance and variation of thermoregulatory behavior in Apis mellifera”

- 12.) 2014 Undergraduate Research Opportunity Grant with *Logan Manaker, **\$800**
- 11.) 2014 IUSSI Travel Grant to IUSSI International Conference, **\$2,000**
- 10.) 2013 Dean’s Research Grant, University of Colorado, Boulder, **\$8,167**
- 9.) 2013-2015 Achievement Rewards for College Scientists Scholarship, **\$12,500**
- 8.) 2013 Animal Behavior Society Student Research Grant, **\$921**
- 7.) 2013 University of Colorado Ecology and Evolutionary Biology Grant, **\$1,300**
- 6.) 2013 University of Colorado Graduate School, Beverly Sears Graduate Research Grant, **\$1,000**
- 5.) 2012 International Union for the Study of Social Insects – North American Section Conference Housing Grant, **\$100**
- 4.) 2012 University of Colorado Ecology and Evolutionary Biology Grant, **\$500**
- 3.) 2012 University of Colorado Graduate School, Beverly Sears Graduate Student Grant, **\$1,000**
- 2.) 2011 University of Colorado Ecology and Evolutionary Biology Grant, **\$1,300**
- 1.) 2008 SUNY Cortland Research Foundation Grant, **\$500**

PUBLICATIONS

[Google Scholar](#)

**Indicates Undergraduate Author*

^Indicates Graduate Student Author

PATENTS

Drennan, K., **Cook, C.N.**, Belucci, J., Glawe, D. Title Of Invention: Mobile Indoor Controlled Apiary System. Approved 2023.

MANUSCRIPTS

In Preparation

Cook, C.N., Lei, H., Schrader, L., *Miller, E., *Aung, V., Gadau, J., Pinter-Wollman, N., Smith, B.H. Foraging phenotypes are mediated by learning, olfactory processing, and differential gene expression in honey bees. Will Submit To: Journal of Molecular Ecology

Under Review

^Nguyen, J., Marshall, C., **Cook, C.N.** Behavioral lifestyle of bees predicts functional roles of gut microbes. Submitted: Journal of Experimental Biology.

Bawden, T., Dolezal, A., **Cook, C.N.** Indoor Honey Bee Colony Management During Winter for Research and Teaching. Submitted: Journal of Insect Science.

2023

Latshaw, S., R.E. Mazade, M. Petersen, J.A. Mustard, I. Sinakevitch, L. Wissler, X. Guo, **C.N; Cook**, H. Lei, J. Gadau, B.H. Smith. 2022. Tyramine and its AmTYR1 receptor modulate attention in honey bees (*Apis mellifera*). <https://doi.org/10.1101/2022.09.02.506392>. Accepted: eLife.

2022

- 24.) Grupstra, C. G. B., Lemoine, N. P., **Cook, C.N.**, & Correa, A. M. S. (2022). Thank you for biting: dispersal of beneficial microbiota through antagonistic interactions. *Trends in Microbiology*. <https://doi.org/10.1016/j.tim.2022.03.006>
- 23.) Lei, H., Haney, S., Jernigan, C., Guo, X.J., **Cook, C.N.**, Bazhenov, M., and B.H. Smith. (2022) Novelty detection in early olfactory processing of the honey bee, *Apis mellifera*. *PLOS One*. 17 (3), e0265009. <https://doi.org/10.1371/journal.pone.0265009>
- 22.) ElSayeh, W. A., **Cook, C.N.**, & Wright, G. A. (2022). B-Vitamins influence the consumption of macronutrients in honey bees. *Frontiers in Sustainable Food Systems*, 152. <https://doi.org/10.3389/fsufs.2022.804002>

2021

- 21.) **Cook, C. N.**, Freeman, A. R., Liao, J. C., & Mangiamele, L. A. (2021). The Philosophy of Outliers: Reintegrating Rare Events Into Biological Science. *Integrative and Comparative Biology*. 61: 2191-2198. <https://doi.org/10.1093/icb/icab166>
- 20.) Sezen, E*, E. Dereszkiwicz*, A. Hozan*, M. Bennett, C. Ozturk, B.H. Smith, **C.N. Cook**. 2020. Heritable cognitive phenotypes influence appetitive learning but not extinction in honey bees. *Annals of the Entomological Society of America*. <https://doi.org/10.1093/aesa/saab023>
- 19.) Lemanski, N., **Cook, C.N.**, Gadau, J., Ozturk, C., Smith, B.H., N. Pinter-Wollman. 2020. The effect of individual learning on collective foraging behavior in honey bees in differently structured landscapes. *Animal Behaviour*. 179: 113-123. <https://doi.org/10.1016/j.anbehav.2021.06.033>
- 18.) Schmidlin K., Kraberger S, **Cook CN.**, DeNardo, DF, Fontenele, RS., Van Doorslaer, K., Martin DP., Buck CB., Varsani, A. A novel lineage of polyomaviruses identified in bark scorpions. *Virology*. 563: 58-63. <https://doi.org/10.1016/j.virol.2021.08.008>
- 17.) Bennett, M. **Cook, C.N.**, Smith, B.H., H. Lei. 2020. Early olfactory, but not gustatory processing, is affected by the selection of heritable cognitive phenotypes in honey bee. *J Comp Physiol A*. <https://doi.org/10.1007/s00359-020-01451-5>

2020

- 16.) **Cook, C.N.**, Lemanski, N., Mosqueiro, T., Gadau, J., Ozturk, C., Pinter-Wollman, N. B.H. Smith. 2020. Heritable Learning Phenotypes Drive Collective Cognition. *Proceedings of the National Academy of Sciences*. 117(30): 17949 -17956. <https://www.pnas.org/content/117/30/17949.abstract>
- 15.) Lemanski, N., **Cook, C.N.**, Gadau, J., Ozturk, C., Smith, B.H., N. Pinter-Wollman. 2020. The effect of individual learning on collective foraging behavior in honey bees in differently structured landscapes. In Revision. Available on BioRxiv: <https://www.biorxiv.org/content/10.1101/817270v1?rss=1>
- 14.) Smith, B.H. & **C.N. Cook**. 2020. Experimental Psychology Meets Behavioral Ecology: What Laboratory Studies of Learning Polymorphisms Mean for Learning Under Natural Conditions, and Vice Versa. *Journal of Neurogenetics*. 34:1, 178-183. DOI: 10.1080/01677063.2020.1718674

2019

- 13.) Lemanski, N., **Cook, C.N.**, Gadau, J., Ozturk, C., Smith, B.H., N. Pinter-Wollman. 2019. A multiscale review of behavioral variation in collective foraging behavior in honey bees. *Insects*. <https://doi.org/10.3390/insects10110370>
- 12.) Tsvetkov, N., **Cook, C.N.**, & A. Zayed. 2019. Effects of group size on learning and memory in the honey bee, *Apis mellifera*. *Journal of Experimental Biology*. <https://doi.org/10.1242/jeb.193888>
- 11.) Kraberger, S. **Cook, C.N.**, Schmidlin, K., Fontenele, R.S., *Bautista, J. Smith, B.H., & A. Varsani. 2019. Diverse single stranded DNA viruses associated with honey bees (*Apis mellifera*). *Infection, Genetics, and Evolution*. 71: 179-188. <https://doi.org/10.1016/j.meegid.2019.03.024>
- 10.) **Cook, C.N.**, Lawson, S. & Rehan, S. 2019. Biogenic amines shift during the solitary-to-subsocial transition in the small carpenter bee, *Ceratina calcarata*. *Apidologie*. 50: 90-99. <https://doi.org/10.1007/s13592-018-0624-9>

2018

- 9.) **Cook, C.N.**, Mosqueiro, T., Gadau, J., Ozturk, C., Pinter-Wollman, N., & B.H. Smith. 2018. Individual differences in learning and biogenic amine levels influence the behavioural division between foraging honey bee scouts and recruits. *Journal of Animal Ecology*. <https://doi.org/10.1111/1365-2656.12911>
- 8.) *Kaspar, R., **Cook, C.N.**, Breed, M.D. 2018. Experienced individuals influence the thermoregulatory fanning behaviour in honey bee colonies. *Animal Behaviour*. 142:69-76. <https://doi.org/10.1016/j.anbehav.2018.06.004>

2017

- 7.) Mosqueiro, T., **Cook, C.N.**, Huerta, R., Gadau, J., Smith, B.H., & N. Pinter-Wollman. 2017. Task allocation and site fidelity jointly influence foraging regulation in honey bee colonies. *Royal Society Open Science*. 4 170344. <https://doi.org/10.1098/rsos.170344>
- 6.) **Cook, C.N.**, Brent, C., & Breed, M.D. 2017. Octopamine and tyramine regulate the thermoregulatory fanning response in honeybees. *Journal of Experimental Biology*. jeb-149203. <https://doi.org/10.1242/jeb.149203>

2016

- 5.) **Cook, C.N.**, *Kaspar, R., & Breed, M.D. 2016. Rapidly changing environment modulates the thermoregulatory fanning response in honeybee groups. *Animal Behaviour*. 115:237-243. <https://doi.org/10.1016/j.anbehav.2016.03.014>
- 4.) **Cook, C.N.**, *Scheckel, K, *Durzi, S., and Breed, M.D. 2016. Larvae influence thermoregulatory fanning behavior in honeybees (*Apis mellifera* L.). *Insectes Sociaux*. 63:271-278. <https://doi.org/10.1007/s00040-016-0463-5>

2015 and earlier

- 3.) Breed, M.D., **Cook, C.N.**, McCreery, H., and Rodriguez, M. 2014. Nestmate and kin recognition in honeybees. in "Social Recognition in Invertebrates", L. Aquiloni and E. Tricarico, eds., Springer.
- 2.) **Cook, C.N.** and Breed, M.D. 2013. Social context influences the initiation and threshold of thermoregulatory behaviour in honey bees. *Animal Behaviour*. 86: 323-329. <https://doi.org/10.1016/j.anbehav.2013.05.021>

1.) Breed, M.D., **Cook, C.N.** and Ochomogo, M. 2012. Cleptobiosis in social insects. *Psyche*. Article ID 484765. <http://dx.doi.org/10.1155/2012/484765>

Media Coverage

“How are the bees” by Lois Parshley. 2022. <https://nautil.us/how-are-the-bees-20772/>

This Local Professor Studies Bees to Learn More About Humans by Bailey Streipling. 2022. <https://www.milwaukee.com/this-local-professor-studies-bees-to-learn-more-about-humans/>

“No Mow May” by Faith Rae. 2022. <https://www.milwaukee.com/whats-this-no-mow-may-everyones-talking-about/>

“Some bees are born curious while others are more single-minded – new research hints at how the hive picks which flowers to feast on” The Conversation, by Chelsea N. Cook. 2020. <https://theconversation.com/some-bees-are-born-curious-while-others-are-more-single-minded-new-research-hints-at-how-the-hive-picks-which-flowers-to-feast-on-144900>

Even bees argue over where to get dinner. ASU Now. By Scott Seckel. 2020. <https://asunow.asu.edu/20200806-discoveries-even-bees-argue-over-where-get-dinner>

“Honey bee scouting and the virtues of being easily distracted” PolliNation Podcast by Andony Melathopoulos at Oregon State University. 2018. <http://blogs.oregonstate.edu/pollinationpodcast/2018/12/03/dr-chelsea-cook/>

“Bees specialize in different food jobs for higher efficiency” ASU Now by Scott Sekel. 2018. <https://asunow.asu.edu/20181102-discoveries-bees-specialize-different-food-jobs-higher-efficiency>

“The Bee Biologist And The Behavioral Neuroscientist” Undisciplined Podcast*. 2018.
*An undergraduate researcher, Rachael Kaspar, discussed our research on this podcast
<http://www.upr.org/post/undisciplined-bee-biologist-and-behavioral-neuroscientist>

“Honeybees devise wing-fanning trick to survive heat spikes”, Denver Post by Bruce Finley. 2016. <http://www.denverpost.com/2016/05/14/honeybees-devise-wing-fanning-trick-to-survive-heat-spikes/>

“Cooling down in honeybees is affected by what others are doing” Not Bad Science, Scientific American by Felicity Muth. 2013. <http://blogs.scientificamerican.com/not-bad-science/2013/08/29/cooling-down-in-honeybees-is-affected-by-what-others-are-doing/>

PROFESSIONAL DEVELOPMENT IN DIVERSITY AND INCLUSION

2021 Making Marquette Inclusive Training, Fall 2021

HONORS AND AWARDS

- 2016 New Venture Challenge, University of Colorado
- 2016 Women's Entrepreneurial Prize, University of Colorado
- 2014 Excellence in Teaching Award, Animal Behavior, Fall 2013
- 2013 Excellence in Teaching Award, Animal Behavior, Fall 2012
- 2012 Excellence in Teaching Award, Animal Behavior, Fall 2011
- 2011 Honorable Mention, National Science Foundation Graduate Research Fellowship Program
- 2009 Phi Kappa Phi Honor Society
- 2008 Beta Beta Beta Biology Honor Society
- 2007 Phi Eta Sigma Freshman Honor Society

TEACHING EXPERIENCE

Courses

- 2022 **Instructor of Record:** Introduction to Environmental Studies. BIOL 1420. Marquette University
- 2021 **Instructor of Record:** Advanced Experimental Design. BIOL 8931. Marquette University.
- 2020-2023 **Instructor of Record:** Experimental Neurobiology, BIOL 4502 Marquette University.
- 2016 – 2017 **Instructor:** Introductory Biology, Prison Biology Program, Arizona State University.
- 2015 **Co-Instructor:** Pedagogy for Graduate Students, EBIO 5460, Co-Instructor, University of Colorado, Boulder
- 2011 – 2015 **Teaching Assistant:** Animal Behavior Lab, EBIO 3240 University of Colorado, Boulder
- 2011 – 2015 **Instructor:** Science Discovery - Beekeeping Basics and Evolution for 8-10 year olds. Supervisor: Anjali Maus
- 2010 – 2015 **Teaching Assistant:** General Biology I for Majors Lab, EBIO 1210, University of Colorado, Boulder
- 2011 – 2012 **Teaching Assistant:** General Biology II for Majors Lab, EBIO 1220, University of Colorado, Boulder
- 2011 – 2015 **Teaching Assistant:** General Biology for Non-Majors Lab, EBIO 1050, University of Colorado, Boulder

Workshops Taught

- 2022 **Co-Instructor** Navigating Grant Writing for Early Career Scientists. International Union for the Study of Social Insects. San Diego, California, USA.
- 2022 **Discussion Lead** Keeping Minoritized Scientists Safe in the Field. International Union for the Study of Social Insects. San Diego, California, USA.
- 2019 **Co-Instructor** Using honey bees as a model system for neuroscience and behavior. Small Brains, Big Ideas. Las Cruces & Santiago, Chile.
- 2018 **Co-Instructor** Using honey bees a model system for environmental health. Federal Apiculture Institute. Ordü, Turkey.

Teaching Certifications

Certificate in College Teaching, Graduate Teacher's Program, University of Colorado, Boulder

Guest Lectures

Arizona State University

- 2019 Sensory Drive and Speciation in Sensory Ecology. Instructors: Dr. Brian Smith and Dr. Hong Lei.
2019 Honey Bee Learning Behavior in Animal Behavior. Instructor: Dr. Stephen Pratt
2018 Honey Bee Learning Behavior in Animal Behavior. Instructor: Dr. Stephen Pratt

University of Colorado

- 2015 Behavioral Ecology. Ecology, EBIO 2040, Instructor: Dr. Katie Suding
2014 Evolution of Sociality. Sexual and Social Behavior Course, EBIO 4460 Instructor: Dr. Joanna Hubbard
2014 Honey Bees and Their Built Environment. Environmental Design. ENVD.
2013 Eusocial Insects. Insect Biology, EBIO 4660, Instructor: Dr. Cesar Nufio

Workshops and Seminars in Teaching Attended

- 2019 Weaving the Future of Animal Behavior. National Science Foundation.
2019 Beyond Teaching: Using Context Diversity to Broaden Diversity and Help Students Thrive. Western Alliance to Expand Student Opportunities. Arizona State University
2014 Pedagogy For Graduate Student Teachers, EBIO 5460, University of Colorado, Boulder
2014 Best Practices in Science Education Workshop with Dr. Nichole Barger, University of Colorado, Boulder
2014 Graduate Lead Teacher Training, 16 hours, University of Colorado, Boulder
2013 Best Practices in Science Education Reading Group, EBIO 6100, Dr. Nichole Barger
2010-15: 20 Hours of Graduate Teacher Program workshops, including Kolb Learning Styles, Learning Goals, Bloom's Taxonomy, Lesson Planning, Assessment construction. University of Colorado, Boulder

MENTORING EXPERIENCE

Dissertation Director

- 2022 – Present** Rachael Halby, PhD Student
Social Isolation Stress
2021 – Present Justine Nguyen, Ph.D. Student
Honey Bee Microbiome Influences Social Behavior

Ph.D. Dissertation Committee Member

- 2023 – Present** Casey Lambert
2022 – Present Athena Rivera
2021 – Present Justine Nguyen
2021 – Present Richard Melton
2021 – Present Kat Sullivan

Ph.D. Qualifying Exam Committee Member

2021 Kat Sullivan
2021 Richard Melton
2021 Cole Doolittle

Graduate Students

Nicole DesJardins – PhD Student (2018 – 2020, ASU)
Miles Winter – Master’s Student (2019 – 2020, ASU/Institute of Evolutionary Genomics
Münster)
Alvin Hozan (2019 – 2020, ASU)

Undergraduate

Ava Taylor (2023 – Current, Marquette University)
Gabe Smith (2022- 2023, Marquette University)
Zac Nelson (2022-Current Marquette University)
Macnessa Fidlin (2021-Current, Marquette University)
Riya Saxena (2021, Marquette University)
Kyara Vasquez (2021-2023, Marquette University)
Riya Virani (2021, Marquette University)
Hannah Oas (2021, Marquette University)
Elma Peco (2021, Marquette University)

Jalen Botiz (2019, ASU)
Emily Dereszkievicz (2019, ASU)
Dallin Shipp (2019, ASU)
Eda Sezen (2017 – 2019, ASU), Currently a research technician for USDA
Joshua Bautista (2018, ASU)
Steven MacKnight (2018, ASU)
Maxwell Edwards (2018, ASU)
Alexa Phillips (2017-2018, ASU), Currently a lab manager at U of Arkansas
Sydney Ohrt (2016-2017, ASU), currently an education coordinator at the Desert Botanical
Garden, Phoenix, AZ
Eric Miller (2016, ASU)

Kelsey Scheckel (2013-14, CU Boulder), Currently a PhD student at UC Berkeley with Neil
Tsutsui
Logan Manaker (2014-15, CU Boulder)
Sharif Durzi (2014-15, CU Boulder)
Rachael Kaspar (2014-2016, CU Boulder), Completed Honor’s Project, Currently a Professional
Research Assistant at the University of Colorado Medical School, Denver, Colorado
John Ternest (2014-2016, CU Boulder), Completed Honor’s Project,
Earned a Master’s degree from Purdue with Ian Kaplan
Currently a PhD Student with Rachel Mallinger, University of Florida
Liam Cullinane (2015-2016, CU Boulder), Currently a Master’s student at the University of
Colorado Denver with Dr. Rebecca Hufft
Matthew Nolasco (2014, CU Boulder)
Chloe Ramsay (2014, CU Boulder), Currently a PhD student at University of South Florida
Braeden Miguel (2014, CU Boulder)

High School

Eve Lazarski (Marquette University, 2022-Current)

Nisha Kulkarni (ASU, 2018 – 2020)

Omina Nematova (ASU, 2019 – 2020)

Zoe Burger (CU Boulder, 2015), Currently an undergraduate at UCLA

Joshua Cropanzano (CU Boulder, 2015)

PRESENTATIONS

Keynote Presentations

2023

Cook, C.N. Stay Cool: Social Interactions Facilitate Collective Thermoregulatory Fanning Behavior in Honey Bees. American Bee Research Conference. Jacksonville, Florida, USA.

Invited Presentations

2022

Cook, C.N. Social Interactions Facilitate Collective Thermoregulatory Fanning Behavior in Honey Bees. International Union for the Study of Social Insects. San Diego, California, USA.

Cook, C.N. Stay Cool: How we can use honey bee thermoregulation to keep better bees. Mequon Beekeepers Association. Mequon, Wisconsin, USA

Cook, C.N. Stay Cool: How we can use honey bee thermoregulation to keep better bees. Brown County Beekeepers Association. Green Bay, Wisconsin, USA

2021

Cook, C.N. Social Interactions Facilitate Collective Thermoregulatory Fanning Behavior in Honey Bees. Entomological Society of America. Denver, Colorado, USA.

Cook, C.N. Individual Learning Phenotypes Drive Collective Foraging Behavior in Honey Bees. Metro Atlanta Beekeepers Association. Online

Cook, C.N. Introducing the Cook Bee Lab at Marquette University. Milwaukee-Waukesha Beekeepers Association.

Cook, C.N. Individual Learning Phenotypes Drive Collective Foraging Behavior in Honey Bees. Society for Mathematical Biology Conference.

Cook, C.N. Individual Learning Phenotypes Drive Collective Foraging Behavior in Honey Bees. Purdue University. Online.

Cook, C.N. Individual Learning Phenotypes Drive Collective Foraging Behavior in Honey Bees. Michigan State University. Online.

2020

Cook, C.N. Individual Learning Phenotypes Drive Collective Foraging Behavior in Honey Bees. University of Illinois, Urbana-Champaign. Urbana-Champaign, Illinois, USA.

Cook, C.N. Individual Learning Phenotypes Drive Collective Foraging Behavior in Honey Bees. Kennesaw State University. Kennesaw, Georgia, USA.

Cook, C.N. Stay Cool: How we can use honey bee thermoregulation to keep better bees. Central State University. Wilberforce, Ohio, USA.

Cook, C.N. Stay Cool: How we can use honey bee thermoregulation to keep better bees. Federation of Irish Beekeepers Association. Dublin, Ireland.

2019

Cook, C.N. Individual Learning Phenotypes Drive Collective Cognition. Cornell University. Ithaca, New York, USA.

Cook, C.N., Mosquero, T., Ozturk, C., Gadau, J., Pinter-Wollman, N., Smith, B.H. Individual Learning Phenotypes Drive Collective Foraging Behavior. Entomological Society of America Southwestern Section. San Diego, California, USA.

Cook, C.N. Stay cool: exploring a group performed thermoregulatory fanning behavior in honeybees. Professor's Symposium. Small Brains, Big Ideas. Valparaíso, Chile.

2018

Cook, C.N. Exploring the individual and social dynamics of task organization in honey bees. Santa Fe Institute.

Cook, C.N., Mosquero, T., Gadau, J., Brent, C., Ozturk, C., Pinter-Wollman, N., Smith, B.H. Variation in learning shapes foraging behavior in Honey Bees. International Union for the Study of Social Insects. Guarujá, Brazil.

Cook, C.N., Woolwine, K.J., Belucci, J., K. Drennan. Predicting honey bee thermoregulatory response to climate change using a closed-loop control systems. International Union for the Study of Social Insects. Guarujá, Brazil.

Cook, C.N., Mosquero, T., Gadau, J., Brent, C., Ozturk, C., Pinter-Wollman, N., Smith, B.H. Variation in learning shapes foraging behavior in Honey Bees. Research Seminar Series. Santa Clara University.

2017 and Before

Cook, C.N. 2014. Why are bees so good at what they do? Exploring division of labor in the honey bee society. Wyoming Bee College Conference.

Cook, C.N. 2014. Stay Cool: How honeybees work together to thermoregulate their hive. ARCS Scholarship Member's Meeting.

Oral Presentations:

**Indicates Undergraduate Mentee*

2022

Cook, C.N. Social interactions facilitate collective thermoregulatory fanning behavior in honey bees. Entomological Society of America Joint Annual Meeting. Vancouver, British Columbia, Canada.

†Nguyen, J., **Cook, C.N.** Antibiotics Disrupt Thermoregulation in Honey Bees. Entomological Society of America Joint Annual Meeting. Vancouver, British Columbia, Canada.

2021

Vazquez, K., R. Virani, E. Peco, T. Bawden, **C.N. Cook.** Social Interactions Facilitate Collective Thermoregulatory Fanning Behavior In Honey Bees. Entomological Society of America. Denver, Colorado, USA.

Vazquez, K., R. Virani, E. Peco, T. Bawden, **C.N. Cook.** Social Interactions Facilitate Collective Thermoregulatory Fanning Behavior In Honey Bees. Animal Behavior Society. Online

2020

Sezen, E., E. Dereszkiwicz, A. Hozan, M. Bennett, C. Ozturk, B.H. Smith, **Cook, C.N.** Heritable cognitive phenotypes influence how honey bees value variable food information. Animal Behavior Society Conference. Online, USA.

2019

Cook, C.N., Lemanski, N., Mosquero, T., Ozturk, C., Gadau, J., Pinter-Wollman, N., Smith, B.H. Individual Learning Phenotypes Drive Foraging, Recruitment Dance Behavior in Honey Bees. Apimondia. Montreal, Quebec, Canada.

Cook, C.N., Lemanski, N., Mosquero, T., Ozturk, C., Gadau, J., Pinter-Wollman, N., Smith, B.H. Individual Learning Phenotypes Drive Collective Foraging Behavior. Animal Behavior Society. Chicago, Illinois, USA.

2018

Cook, C.N., Mosquero, T., Pinter-Wollman, N., Smith, B.H. Individual Learning Phenotypes Drive Collective Foraging Behavior. Entomological Society of America, Denver, Colorado, USA.

2017

Cook, C.N., Mosquero, T., Pinter-Wollman, N., Smith, B.H. Foraging Phenotypes Influenced by Learning Behavior, Neurotransmitters in Honey Bees. Animal Behavior Society. Toronto, Canada.

2016

Cook, C.N., Brent, C.S., & Breed, M.D. Octopamine and Tyramine Modulate the Thermoregulatory Fanning Behavior in Honey Bees. International Congress of Entomology. Orlando, Florida, USA.

C.N. Cook. Stay cool: exploring a group performed thermoregulatory fanning behavior in honeybees. Social Insect Research Group. Arizona State University.

2015

Cook, C.N. & Breed, M.D. Social cues mediate thermoregulatory fanning behavior in honeybees, *Apis mellifera* L. The Entomological Society of America. Portland, Oregon, USA.

*Kaspar, R., M.D. Breed, & **Cook, C.N.** Social learning in the thermoregulatory fanning behavior in honey bees, *Apis mellifera* L. The Entomological Society of America, Portland, Oregon, USA.

Cook, C.N., *Kaspar, R., Breed, M.D. Rapidly Changing Environments Alter A Decentralized Thermoregulatory Fanning Response in Honeybee Groups. Animal Behavior Society

Cook, C.N. Stay cool: exploring a group performed thermoregulatory fanning behavior in honeybees. University of Colorado EBIO Colloquia Series

2014 and Before

Cook, C.N. 2014. Stay Cool: Exploring proximate social cues in a group performed thermoregulatory behavior in honeybees. Entomological Society of America.

Cook, C.N. 2014 Stay Cool: How honeybees work together to thermoregulate their hive. Guild of Rocky Mountain Ecologists and Evolutionary Biologists, Fort Collins, CO

Cook, C.N. 2014. Stay Cool: Social coordination of a thermoregulatory behavior in honey bees. International Union for the Study of Social Insects. Cairns, Australia.

- Cook, C.N.** 2014. Stay Cool: Performance of group thermoregulatory behavior in honey bees. University of Colorado, Boulder Interdisciplinary STEMinar.
- Cook, C.N.** 2013 How do neurotransmitters regulate thermoregulatory behavior in honey bees? Dean's Research Grant Symposium.
- Cook, C.N.** and Breed, M.D. 2013: Social context influences the initiation and threshold of thermoregulatory behaviour in honey bees. Animal Behavior Society.
- Cook, C.N.** 2012. Exploring Response Thresholds As A Hypothesis for Fanning Behavior in Honey Bees. Brown Bag, EBIO Department Presentation.
- Cook, C.N.** 2012. Social Context Alters Behavioral Response in *Apis mellifera* I. Guild of Rocky Mountain Ecologists and Evolutionary Biologists Conference.
- Cook, C.N.** 2009. *A Natural History of Facts: An Ecological Debate of Earthworm Distribution in the Northern Hemisphere.* SUNY Cortland Scholar's Day.

Poster Presentations:

*Indicates Undergraduate Mentee

- *Vazquez, K., **C.N. Cook.** 2022. It's getting hot in here: Sensory Reception of Hot Temperatures Leading to Social Thermoregulation in Honey Bees. Entomological Society of America Joint Annual Meeting. Vancouver, British Columbia, Canada.
- *Fidlin, M., **C.N. Cook.** 2022. Glyphosate Effect on Honey Bee Thermoregulation. Entomological Society of America Joint Annual Meeting. Vancouver, British Columbia, Canada.
- *Smith, G., J. Nguyent, **C.N. Cook.** 2022. Antibiotics negatively affect honeybee temperature regulation behavior. Marquette Arts and Sciences Research Symposium.
- *Nelson, Z., **C.N. Cook.** 2022. Social Dose Response of Honey Bee Environmental Regulation Behavior. Marquette Arts and Sciences Research Symposium.
- *Sezen, E. Smith, B.H., **C.N. Cook.** 2019. Genetic Difference Influence Honey Bee (*Apis mellifera*) in Learning Unreliable Stimuli. Animal Behavior Society. Chicago, Illinois, USA.
- Cook, C.N.** & May, A. 2017. Transmissible Cancer and Eusociality: 'Sharing' Selfishness with Others". International Conference for Ecology, Evolution and Cancer.
- Cook, C.N.** 2016. Stay Cool: Exploring fanning behavior in Honey Bees. International Union for the Study of Social Insects – North American Section, Orlando, Florida.
- *Kaspar, R., *Manaker, L., *Durzi, S., & **Cook, C.N.** 2014. The Effects of Variable Rates of Temperature in the Thermoregulation Fanning Behavior of *Apis mellifera* L. Entomological Society of America. Portland, Oregon, USA
- *Durzi, S., *Kaspar, R., *Manaker, L., & **Cook, C.N.** 2014. Honeybees and their social cues in the context of porch fanning behavior. Entomological Society of America. Portland, Oregon, USA.
- *Manaker, L., *Durzi, S., *Kaspar, R., & **Cook, C.N.** 2014. Changes in thermoregulatory fanning behavior over honeybee lifespan. Entomological Society of America. Portland, Oregon, USA.
- Cook, C.N.** and Breed, M.D. 2012. Social Context Alters Behavioral Response in *Apis mellifera*. International Union for the Study of Social Insects – North American Section. Greensboro, North Carolina, USA.
- Broadwell, D., **Cook, C. N.**, and Ducey, P. *The Natural History of Planarians.* Northeast Natural History Conference. Albany, New York, USA

SERVICE AND LEADERSHIP

- 2021 – Current: Faculty Advisor, Biological Undergraduate Society. Marquette University
- 2019 – Current: Elections Committee, International Union for the Study of Social Insects, North American Section
- 2019 – Current: Chair, Diversity and Inclusion Committee for the International Union for the Study of Social Insects International Meeting
- 2018 – Current: International Union for the Study of Social Insects Code of Conduct Committee
- 2022 – National Science Foundation Graduate Research Fellowship Panel
- 2018 Judge for graduate student presentation competition, Entomological Society of America Conference
- 2018 Honey bee learning and health workshop, Ordu, Turkey
- 2017 Judge for Western Alliance to Expand Student Opportunities Student Poster Competition
- 2016 2017: Prison Education Volunteer, Eyman State Prison, Florence AZ
Teaching college-level biology to prisoners
- 2016 Honey bee biology class, Desert Botanical Gardens Summer Camp
- 2013 – 14: Beekeeping Basics, Denver Rescue Mission at Harvest Farm, Fort Collins, CO.
Teaching beekeeping to men who are recovering from addiction.
- 2012 -15: Organizer, Animal Behavior Reading Group. CU Boulder, EBIO.
Organizing a reading group for graduate students to read current literature.
- 2012 -15: Colloquium Committee, CU Boulder, EBIO. Graduate student run group that organizes a weekly seminar.
- 2011-15: Finance Chair, University of Colorado Student Government Health Board.
- 2010 -15: Evolution Outreach Committee. Roles: Organizing a teaching workshop for middle and high school teachers for improving evolution curriculum.
- 2007 - 09: Treasurer, Cortland Students Advocating for a Valued Environment.
- 2008 - 09: Treasurer, Biology Club, SUNY Cortland.

PROFESSIONAL SOCIETIES AND OTHER EXPERIENCE

Animal Behavior Society
Entomological Society of America
International Union for the Study of Social Insects

JOURNALS REFEREED

Current Biology, Proceedings of the Royal Society B, Biology Letters, Animal Behaviour, PLoS One, Environmental Entomology, Insectes Sociaux, Behavioral Ecology and Sociobiology, PLoS Pathogens, Proceedings of the National Academies of Sciences, eLife, Trends in Ecology and Evolution, Journal of Economic Entomology.

OTHER WORK EXPERIENCE

- 2009 - 2010: Tissue Procurement Technologist in the Department of Hematopathology, University of Rochester, Rochester New York. Cell processing, cryostorage of leukemia and lymphoma cell lines.
Supervisor: Dr. Richard Burack, MD, PhD
- 2007 - 2009: Laboratory Manager at the State University of New York, Cortland.
Project: Distribution and ecology of native and invasive earthworms.
Primary Investigator: Dr. Peter Ducey

