

Tobin J. Hammer

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Research Interests

Insect-microbe interactions, evolution of symbiosis, Lepidoptera, herbivory, microbial ecology

Education

Doctoral Program, Department of Ecology and Evolutionary Biology 8/12 – Present
University of Colorado Boulder
Advisors: Dr. Noah Fierer and Dr. M. Deane Bowers

Bachelor of Science, General Biology 9/05 – 6/09
Magna Cum Laude, with Distinction
University of California, San Diego
Honors Thesis Advisor: Dr. Eric E. Allen

UC Education Abroad Program, Tropical Biology & Conservation 10/07 – 12/07
Monteverde Institute, Costa Rica

Publications & Preprints

Hammer, T.J., Janzen, D.H., Hallwachs, W., Jaffe, S., and N. Fierer. 2017. Caterpillars lack a resident gut microbiome. *Proceedings of the National Academy of Sciences* 114, 9641-9646.

Ravenscraft, A., Berry, M., **Hammer, T.J.**, Peay, K., and C. Boggs. Structure and function of the bacterial and fungal gut flora of Neotropical butterflies. Resubmission to *Ecological Monographs* in prep. Preprint available at *bioRxiv*: <https://doi.org/10.1101/128884>.

Hammer, T.J., Fierer, N., Hardwick, B., Simojoki, A., Slade, E., Taponen, J., Viljanen, H., and T. Roslin. 2016. Treating cattle with antibiotics affects greenhouse gas emissions, and microbiota in dung and dung beetles. *Proceedings of the Royal Society B* 283, 20160150.

Barberán, A., **Hammer, T.J.**, Madden, A., and N. Fierer. 2016. Microbes should be central to ecological education and outreach. *Journal of Microbiology & Biology Education* 17, 23-28.

Planet, P.J., Parker, D., Cohen, T.S., Smith, H., Leon, J.D., Ryan, C., **Hammer, T.J.**, Fierer, N., Chen, Emily I., and A.S. Prince. 2016. Lambda interferon restructures the nasal microbiome and increases susceptibility to *Staphylococcus aureus* superinfection. *mBio* 7, e01939-15.

Hammer, T.J., Dickerson, J.*, and N. Fierer. 2015. Evidence-based recommendations on storing and handling specimens for analyses of the insect microbiome. *PeerJ* 3, e1190.

Hammer, T.J., and M.D. Bowers. 2015. Gut microbes may facilitate insect herbivory of chemically defended plants. *Oecologia* 179, 1-14.

Hammer, T.J., and S.A. Van Bael. 2015. An endophyte-rich diet increases ant predation on a specialist herbivorous insect. *Ecological Entomology* 40, 316-321.

Hammer, T.J., McMillan, W.O., and N. Fierer. 2014. Metamorphosis of a butterfly-associated bacterial community. *PLoS One* 9, e86995.

Hammer, T.J., Hata, C., and J.C. Nieh. 2009. Thermal learning in the honey bee, *Apis mellifera*. *Journal of Experimental Biology* 212, 3928-3934.

* Undergraduate advisee

Major Fellowships, Grants, and Awards

Graduate Fellowship, Cooperative Institute for Research in Environmental Sciences	2017 - 2018
National Science Foundation Graduate Research Fellowship	2014 - 2017
National Science Foundation Doctoral Dissertation Improvement Grant	2016
Research Grants, U. Colorado, Dept. of Ecology and Evolutionary Biology	2014 & 2016
Research Grants, U. Colorado Undergraduate Research Opportunities Program	2015 & 2016
Grant from the Lewis and Clark Fund for Exploration and Field Research	2015
University of Colorado Boulder Chancellor's Fellowship	2012 - 2014
Short Term Fellowship, Smithsonian Tropical Research Institute, Panama	2011
Fulbright Grant, Max Planck Institute for Marine Microbiology, Germany	2009 - 2010
The American Society for Microbiology Undergraduate Research Fellowship	2008 - 2009
Robins Scholarship for Undergraduate Research in Marine Sciences	2008 - 2009
Phi Beta Kappa Honors	2009
Academic Achievement Award, Division of Biological Sciences, UCSD	2009
NSF Research Experiences for Undergraduates, Woods Hole Oceanographic Institution	2008
Amgen Scholars Summer Research Program, UC Berkeley	2007
Eleanor Roosevelt College Honors Program	2005 - 2007

Research Presentations

Meeting of the Guild of Rocky Mountain Ecologists & Evolutionary Biologists (Poster)	2017
Meeting of the Lepidopterists' Society (Talk) – <i>received award for first-place student presentation</i>	2017
Gordon Research Conference on Animal-Microbe Symbiosis (Poster)	2017
Yosemite Symbiosis Workshop (Talk)	2017
Smithsonian Tropical Research Institute Symposium on Tropical Microbial Ecology (Talk)	2016
International Congress of Entomology (Invited Talk)	2016
International Society for Microbial Ecology (Poster)	2016
10 th International Heliconius Meeting (Talk)	2015
European Congress of Entomology (Invited Talk)	2014
Entomological Society of America Annual Meeting (Talk)	2013
High Country Lepidopterists' Meeting (Talk)	2013
Gordon Research Conference on Plant-Herbivore Interactions (Poster)	2013
Smithsonian Tropical Research Institute Fellows Symposium (Talk)	2011

U.S.-Germany Fulbright Scholars Conference (Talk)	2010
International Society for Microbial Ecology (Poster)	2010
American Society for Microbiology General Meeting (Talk and poster)	2009

Teaching Experience

Entomology (Co-instructor for lecture, and lab TA), U. Colorado Boulder	8/17 - 12/17
Microbiology (lab TA), U. Colorado Boulder	1/15 - 5/15
Introductory Organismal and Evolutionary Biology (recitation TA), UCSD	4/09 - 6/09
Introductory Molecular and Cell Biology (recitation TA), UCSD	9/08 - 12/08

Undergraduate Mentoring

H. Layton, U. Colorado Boulder	7/16 - 8/16
J. Dickerson, U. Colorado Boulder	2/13 - 8/16
K. Vaccarello, U. Colorado Boulder	4/15 - 1/16
E. Beaury, U. Colorado Boulder	10/15 - 2/15
E. Linton, Princeton University	6/14
W. Wagoner, Smithsonian Tropical Research Institute	6/12 - 8/12

Service and Outreach

- Peer review for *Ecology Letters*, *PLoS One*, *FEMS Microbiology Ecology*, *ISME*, *Frontiers in Microbiology*, *Molecular Ecology*, *Ecological Entomology*, *Royal Society Open Science*, *Environmental Microbiology Reports*, *Insectes Sociaux*, and *Oecologia*
- Member of U. Colorado Boulder departmental working group for diversity in STEM
- Lead organizer for U. Colorado Boulder departmental Brown Bag seminar series
- Guest lecturer for the 2017 Lepidoptera Course at the Southwestern Research Station
- Outreach events including Moth Mania (CU Natural History Museum), Mysterious Microbes (CIRES), Family Science Days (CU South Denver), BioBlitz (Denver Museum of Nature and Science), Evolution Outreach Day (CU Natural History Museum), public talks for the Southwestern Research Station community, and participation in the U. Colorado Boulder interdisciplinary “STEMinar” series