

Alison M. Ravenscraft

University of Texas Arlington
Department of Biology
Life Science Building, Room 461
Arlington, TX 76013

✉ alison.ravenscraft@uta.edu

☎ 314-791-0738

Professional Appointments

- 2019-present **Assistant Professor**, University of Texas at Arlington
Biology Department
- 2016-2019 **NIH Postdoctoral Excellence in Research and Teaching Fellow**,
University of Arizona
Supervisor: Dr. Martha Hunter

Education

- 2010-2016 **Ph.D. in Ecology and Evolution**, Stanford University
Advisors: Dr. Carol Boggs and Dr. Kabir Peay
Dissertation: "A nutritional perspective on the lepidopteran gut microbial community"
- 2005-2009 **A.B in Organismic and Evolutionary Biology**, Harvard University
magna cum laude with highest honors in field

Fellowships, Awards and Grants

- 2019-2022 USDA NIFA grant: "Does an environmentally-acquired beneficial symbiont shape the biology of a leaf-footed bug pest?" Co-PIs Martha Hunter, Alison Ravenscraft, David Baltrus. (Overall budget **\$455,000**; subaward of **\$60,000** to UT Arlington.)
- 2016-2019 NIH Postdoctoral Excellence in Research and Teaching Fellowship, University of Arizona (**\$140,000**)
- 2015-2016 Graduate Fellowship, Stanford Center for Computational, Evolutionary and Human Genomics (**\$29,500**)
- 2014 American Society of Naturalists Student Research Award (**\$2,000**)
- 2014 Rocky Mountain Biological Station Graduate Fellowship (**\$550**)
- 2012-2015 NSF Graduate Research Fellowship (**\$126,000**)
- 2009-2010 Benjamin A. Trustman Traveling Fellowship, Harvard University (**\$18,000**)

Publications

mentored students are underlined

1. Bockoven AA, Bondy EC, Flores MJ, Kelly SE, **Ravenscraft AM**, Hunter MS. 2019. What goes up might come down: the spectacular spread of an endosymbiont is followed by its decline a decade later. **Microbial Ecology** DOI: 10.1007/s00248-019-01417-4
2. **Ravenscraft A**, Kish N, Peay K, Boggs C. 2019. No evidence that gut microbiota are costly to a butterfly host. **Molecular Ecology** 28: 2100–2117. DOI: 10.1111/mec.15057
3. **Ravenscraft A**, Berry M, Hammer T, Peay K, Boggs C. 2019. Structure and function of the bacterial and fungal gut flora of Neotropical butterflies. **Ecological Monographs** 89(2): e01346. DOI: 10.1002/ecm.1346
4. McManus R, **Ravenscraft A**, Moore W. 2018. Bacterial associates of a gregarious riparian beetle with explosive defensive chemistry. **Frontiers in Microbiology** 9: 2361. DOI: 10.3389/fmicb.2018.02361
5. Arcila Hernández L, Sanders J, Miller G, **Ravenscraft A**, Frederickson, M. 2017. Ant-plant mutualism: a dietary by-product of a tropical ant's macronutrient requirements. **Ecology** 98(12): 3141-3151. DOI: 10.1002/ecy.2036
6. **Ravenscraft A**, Boggs C. 2016. Nutrient acquisition across a dietary shift: Fruit feeding butterflies crave amino acids, nectivores seek salt. **Oecologia** 181(1): 1-12. DOI: 10.1007/s00442-015-3403-6
7. Hoopes MF, Marsh DM, Beard KH, Goldberg N, Aparicio A, Arbuthnot A, Hixon B, Laflower D, Lee L, Little A, Mooney E, Palette A, **Ravenscraft A**, Scheele S, Stowe K, Sykes C, Watson R, Yang B. 2013. Invasive plants in wildlife refuges: coordinated research with undergraduate ecology courses. **BioScience** 63: 644-656. DOI: 10.1525/bio.2013.63.8.7
8. Frederickson ME, **Ravenscraft A**, Hernández LMA, Booth G, Astudillo V, Miller GA. 2012. What happens when ants fail at plant defense? *Cordia nodosa* dynamically adjusts its investment in both direct and indirect resistance in response to herbivore damage. **Journal of Ecology** 101: 400-409. DOI: 10.1111/1365-2745.12034
9. Frederickson ME, **Ravenscraft A**, Miller GA, Hernández LMA, Booth G, Pierce NE. 2012. The direct and ecological costs of an ant-plant symbiosis. **American Naturalist** 179(6): 768-778. DOI: 10.1086/665654

Presentations

mentored students are underlined

- Ravenscraft A**. 2019. Patterns and implications of environmental symbiont acquisition in insect hosts. **Invited talk**, Meet the Experts Session: American Society for Microbiology Conference, San Francisco CA.

- Ravenscraft A.** 2019. The ecological consequences of an environmentally-acquired microbiota. **Invited talk:** Boise State University, Boise ID.
- Ravenscraft A.** 2019. The ecological consequences of an environmentally-acquired microbiota. **Invited talk:** Fordham University, New York NY.
- Ravenscraft A.** 2018. The ecological consequences of an environmentally-acquired microbiota. **Invited talk:** University of Texas at Arlington, Arlington TX.
- Ravenscraft A,** Hunter M. 2018. Developing the bug-*Burkholderia* symbiosis as a model for studying environmental symbiont acquisition. Oral presentation: Entomological Society of America, Vancouver BC, Canada.
- Ravenscraft A,** Hunter M. 2018. Where do insect gut flora come from? Patterns and implications of environmental symbiont acquisition in bugs and butterflies. **Invited talk:** Clemson University, Clemson SC.
- Ravenscraft A,** Hunter M. 2018. Developing the true bug-bacterial symbiosis as a model for studying environmental symbiont acquisition. Oral presentation: Wolbachia Conference, Salem MA.
- Ravenscraft A,** Hunter M. 2018. Where do insect gut flora come from? Patterns and implications of environmental symbiont acquisition in bugs and butterflies. **Invited talk:** Emory University, Atlanta GA.
- Whitaker S, Comella R, Gavin C, Johnson D, **Ravenscraft A,** Hunter M. 2018. Effects of an environmentally-acquired *Burkholderia* symbiont on the development and fitness of an insect host. Poster: Undergraduate Biology Research Symposium, U of Arizona.
- Ravenscraft A,** Hunter M. 2017. Do environmentally-acquired *Burkholderia* symbionts serve as a reservoir of local adaptations for their insect hosts? **Invited talk:** Entomological Society of America, Denver CO.
- Vogt J, **Ravenscraft A,** Hunter M. 2017. Bacterial communities in cochineal insect species of Arizona. Poster: Entomological Society of America, Denver CO.
- Ravenscraft A,** Hunter M. 2017. Where do insect gut flora come from? Patterns and implications of environmental symbiont acquisition in bugs and butterflies. **Invited talk:** University of Toronto, Toronto ON.
- Ravenscraft A,** Hunter M. 2017. Where do insect gut flora come from? Patterns and implications of environmental symbiont acquisition in bugs and butterflies. **Invited talk:** University of Arizona, Tucson AZ.
- Ravenscraft A,** Hunter M. 2017. Do environmentally-acquired bacterial symbionts serve as a reservoir of local adaptations for their insect hosts? **Invited talk:** Astrobiology Science Conference, Phoenix AZ.

- Ravenscraft A**, Hunter M. 2017. Could environmentally acquired symbionts serve as a reservoir of local adaptations for their insect hosts? Poster: Gordon Research Conference on Animal-Microbe Symbioses, West Dover, VT.
- Ravenscraft A**, Kish N, Peay K, Boggs C. 2016. Gut bacteria are related to host fitness in the butterfly *Speyeria mormonia*. Poster: Stanford Center for Computational, Evolutionary and Human Genomics Symposium, Stanford CA.
- Ravenscraft A**, Kish N, Peay K, Boggs C. 2015. Context-dependent effects of the gut flora on host fitness in the butterfly *Speyeria mormonia*. Poster: Gordon Research Conference on Animal-Microbe Symbioses, Waterville Valley NH.
- Ravenscraft A**, Boggs C. 2013. Nutrient preferences differ among neotropical butterflies of different sexes and feeding guilds. Poster: Association for Tropical Biology and Conservation, San Jose Costa Rica.
- Ravenscraft A**, Boggs C. 2012. Puddling Amazonian butterflies prefer sodium and urea. Poster and published abstract: Ecological Society of America, Portland OR.
- Ravenscraft A**, Shnayder V, Farrell B. Acoustic niche partitioning on the Boston Harbor Islands and beyond. **Invited talk:** Boston Harbor Islands Science Symposium, Boston MA.
- Ravenscraft A**, Shnayder V, Farrell B. 2009. The Acoustic Niche Hypothesis: frequency partitioning in bioacoustic communities. **Invited talk:** International Association of Landscape Ecologists Conference, Snowbird UT.

Teaching and Mentorship

- Spring 2018 **Instructor:** *Microbiology*. Pima Community College, Tucson AZ.
- Fall 2016 Certificate of Leadership in Classroom Diversity & Inclusion, U of Arizona.
- 2016-2019 **Formal pedagogical training** through the PERT program, U of Arizona.
- Summer 2014 Teaching Assistant: *Evolution of Life in Neotropical Forests of Ecuador*, Stanford University.
- Spring 2012 **BioCore TA Mentor**. Selected to mentor new teaching assistants based on outstanding teaching evaluations. Stanford University.
- Spring 2011 **Excellence in Teaching Award**, Biology Dept., Stanford University.
- Fall 2011 Teaching Assistant: *Ecology*. Stanford University.
- Spring 2011 Teaching Assistant: *Evolution, Ecology & Plant Biology*. Stanford University.
- Winter 2011 Teaching Assistant: *Conservation Biology*. Stanford University.
NCEAS Collaboration: Directed Stanford's portion of an NCEAS project assimilating data and analyzing factors affecting invasive species in

National Wildlife Refuges. Led to a publication that included undergraduates as coauthors.

RESEARCH STUDENTS MENTORED

U. Arizona Maureen Brophy: Detection of pathogens in the tick microbiome (ongoing)

Reilly McManus: Profiling the bombardier beetle microbiome (see publications)

Matt Flores: Functional variation among symbiotic *Burkholderia* strains

Shaira Whitaker: Differential effects of symbiotic *Burkholderia* strains on insect development

Catherine Gavin, Dana Johnson & Ryan Comella: Fitness effects of *Burkholderia* sp. on an insect host

Ashley Little & Francisco Montijo: Population genetic structure of the stilt bug, *Jalysus wickhami*

Catherine Vasquez: At what developmental stage does *Jalysus wickhami* acquire its symbiont?

Pima Community College Connor Ranger-Moore: Optimization of diagnostic PCR for detection of *Burkholderia*.

Helen Gregory: Development of a High-Resolution Melt Curve assay for rapid differentiation of *Burkholderia* strains.

Stanford Michelle Berry: Influence of host phylogeny on gut microbial community composition in Costa Rican Butterflies

Joe Hack: Effects of the gut microbiota on adult butterfly performance and fitness

Service and Outreach

ACADEMIC SERVICE **Peer reviewer** for The American Naturalist, Ecological Entomology, Ecology and Evolution, European Journal of Entomology, Insects, Molecular Ecology, Molecular Ecology Resources, Natural Product Reports, and PLOS ONE.

Head PERT. Served as the liaison between PERT postdoctoral fellows and program administrators at the University of Arizona, 2018-2019.

OUTREACH **Ran an interactive public science exhibit** at the Arizona Insect Festival, Fall 2017 & Fall 2018.

Co-instructed “Microbes and Mud,” a biannual workshop for Stanford Splash, an enrichment program for students in grades 7-12. 2013-2015.

Co-instructor for BioCore Explorations. Designed and led an annual weekend workshop on lepidopteran ecology and evolution, including a field trip to observe the fall monarch migration. Stanford University, 2011-2014.

Volunteer teacher for a science education program, *Sábado Científico* (Science Saturday), offered to children in a remote mining village near Los Amigos Field Station, Peru. 2009-2010.