

BRANDON S. COOPER

Division of Biological Sciences – CMMB/EE Graduate Groups
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ACADEMIC APPOINTMENTS

- 2017- present University of Montana, Missoula
Assistant Professor
Division of Biological Sciences
CMMB & EE Graduate Groups
- 2016-2017 University of California, Davis
NIH and NIAID Postdoctoral Fellow
University of Montana
Assistant Professor (one-year deferral)
- 2014-2016 University of California, Davis
NIH and NIAID Postdoctoral Fellow
Advisor: Michael Turelli

EDUCATION

- 2014 Indiana University, Bloomington
Ph.D. in Evolutionary Genetics
NIH Trainee in Genetics, Cellular, and Molecular Sciences
Advisor: Kristi Montooth
- 2002/2009 Indiana State University
B.S/M.S. in Biology
Advisor: Michael Angilletta Jr.

PUBLICATIONS ([MYNCBI BIBLIOGRAPHY](#))

- manuscripts in review/available* (30) Hague, M.T.J., J.D. Shropshire, C.N. Caldwell*, J.P. Statz**, W.R. Conner, and **B.S. Cooper**. Temperature perturbation of cellular host-microbe interactions explains continent-wide endosymbiont prevalence.
- (29) Coughlan J.M., A.J. Dagilis, A. Serrato-Capuchina, H. Elias, D. Peede, K. Isbell, D.M. Castillo, **B.S. Cooper**, and D.R. Matute. Population structure and introgression among recently differentiated *Drosophila melanogaster* populations. *bioRxiv*. doi: 10.1101/2021.06.25.449842.
- (28) Matute, D.R., and **B.S. Cooper**. Reinforcement alone does not explain increased reproductive isolation in sympatry. *bioRxiv*. doi: 10.1101/2021.05.06.442525.
- (27) Shropshire, J.D., E. Hamant*, and **B.S. Cooper**. Determining how fast and why bacterial densities and cytoplasmic incompatibility strengths vary. *bioRxiv*. doi:10.1101/2021.06.01.446638.
- 2021 (26) Beckmann, J.F., K. Van Vaerenbergh**, D.E. Akwa**, and **B.S. Cooper**. A single mutation weakens symbiont-induced reproductive manipulation through reductions in deubiquitylation efficiency. *Proceedings of the National Academy of Sciences*. In press.
- (25) Matute, D.R., and **B.S. Cooper**. Comparative studies on speciation: 30 years since Coyne and Orr. *Evolution*. 75:764-778.
- (24) Wheeler, T.B., V. Thompson, W.R. Conner, and **B.S. Cooper**. *Wolbachia* in the spittlebug *Prosapia ignipectus*: Variable infection frequencies, but no apparent effect on host reproductive isolation. Accepted at *Ecology & Evolution*.

- (23) Hague, M.T.J., H.A. Woods, and B.S. Cooper. Pervasive effects of *Wolbachia* on host activity. *Biology Letters*. 17:20210052.
- (22) Conner, W.R., E.K. Delaney, et al. B.S. Cooper, and M. Turelli. A phylogeny for the *Drosophila montium* subgroup: a model clade for comparative analyses. *Molecular Phylogenetics and Evolution*. 158:107061.
- 2020 (21) Hague, M.T.J., C. Caldwell*, and B.S. Cooper. Pervasive effects of *Wolbachia* on host temperature preference. *Mbio*. 11:e01768-20.
- (20) Hague, M.T.J., H. Mavengere**, D.R. Matute, and B.S. Cooper. Environmental and genetic contributions to *wMel*-like *Wolbachia* transmission and frequency variation. *Genetics*. 215:1117-1132.
- (19) Sprengelmeyer, Q.D., S. Mansourian, J.D. Lange, D.R. Matute, B.S. Cooper, E. Jirle, M.C. Stensmyr, and J.E. Pool. Discovery of *Drosophila melanogaster* from wild African environments and genomic insights into species history. *Molecular Biology & Evolution*. 37:627-638.
- 2019 (18) Cooper, B.S., D. Vanderpool**, W.R. Conner, D.R. Matute, and M. Turelli. 2019. *Wolbachia* acquisition by *Drosophila yakuba*-clade hosts and transfer of incompatibility loci between distantly related *Wolbachia*. *Genetics*. 212:1399-1419.
- (17) Meany, M., W.R. Conner, S.V. Richter***, J.A. Bailey**, M. Turelli, and B.S. Cooper. Loss of cytoplasmic incompatibility and minimal fecundity effects explain relatively low *Wolbachia* frequencies in *Drosophila mauritiana*. *Evolution*. 73:1278-1295.
- 2018 (16) Cooper, B.S., A. Sedghifar, W.T. Nash*, A.A. Comeault, D.R. Matute. A maladaptive combination of traits contributes to the maintenance of a *Drosophila* hybrid zone. *Current Biology*. 28:2940-2947.
- (15) Turelli, M., B.S. Cooper, et al. A.A. Hoffmann. Rapid global spread of *wRi*-like *Wolbachia* across multiple *Drosophila*. *Current Biology*. 28:1-9.
- 2017 (14) Cooper, B.S., P. Ginsberg, M. Turelli and D. Matute. *Wolbachia* in the *Drosophila yakuba* complex: pervasive frequency variation and weak cytoplasmic incompatibility, but no apparent effect on reproductive isolation. *Genetics*. 205:333-351.
- 2015 (13) Cooper, B.S., C. Burrus, C. Ji, M.W. Hahn, and K.L. Montooth. Similar efficacies of selection shape mitochondrial and nuclear genes in both *Drosophila melanogaster* and *Homo sapiens*. *Genes|Genomes|Genetics*. 5:2165-2176.
- (12) Adrion, J.R., M.W. Hahn, and B.S. Cooper. Revisiting classic clines in *Drosophila melanogaster* in the age of genomics. *Trends in Genetics*. 31:434-444.
- 2014 (11) Condon, C., B.S. Cooper, S. Yeaman, and M.J. Angilletta. Temporal variation favors the evolution of generalists in experimental populations of *Drosophila melanogaster*. *Evolution*. 68:720-728.
- (10) Cooper, B.S., L.A. Hammad, and K.L. Montooth. Thermal adaptation of cellular membranes in natural populations of *Drosophila melanogaster*. *Functional Ecology*. 28:886-894.
- 2013 (9) Czarnoleski, M., B.S. Cooper, J. Kierat, and M.J. Angilletta. Flies developed small bodies and small cells in warm and in thermally fluctuating environments. *Journal of Experimental Biology*. 216:2896-2901.
- 2012 (8) Cooper, B.S., L.A. Hammad, N.P. Fisher*, J.A. Karty, and K.L. Montooth. In a variable thermal environment selection favors greater plasticity of cell membranes in *Drosophila melanogaster*. *Evolution*. 66:1976-1984.

- (7) **Cooper, B.S.**, J.M. Tharp*, I.I. Jernberg*, and M.J. Angilletta. Developmental plasticity of thermal tolerances in temperate and subtropical populations of *Drosophila melanogaster*. *Journal of Thermal Biology*. 37:211-216.
- 2011 (6) Hammad, L.A., **B.S. Cooper**, N.P. Fisher*, K.L. Montooth, and J.A. Karty. Profiling and quantification of *Drosophila melanogaster* lipids using liquid chromatography-mass spectrometry. *RCMS*. 25:2959-2968.
- (5) Schuler, M.S., **B.S. Cooper**, J.M. Storm, M.W. Sears, and M.J. Angilletta. Isopods failed to acclimate their thermal physiology of locomotor performance during predictable or stochastic cooling. *PLoS ONE*. 6:e20905. doi:10.1371/journal.pone.0020905.
- 2010 (4) **Cooper, B.S.**, M. Czarnoleski, and M.J. Angilletta. Acclimation of thermal physiology in natural populations of *Drosophila melanogaster*: a test of an optimality model. *Journal of Evolutionary Biology*. 23:2346-2355.
- (3) Angilletta, M.J., **B.S. Cooper**, M.S. Schuler, and J.G. Boyles. The evolution of thermal physiology in endotherms. *Frontiers in Bioscience*. E2:861-881.
- 2008 (2) **Cooper, B.S.**, B.H. Williams*, and M.J. Angilletta. Unifying indices of heat tolerance in ectotherms. *Journal of Thermal Biology*. 33:320-323.
- (1) Boyles, J.G., D.P. Aubrey, **B.S. Cooper**, J.G. Cox, D.R. Coyle, R.J. Fisher, J.D. Hoffman, and J.J. Storm. Statistical confusion among graduate students: sickness or symptom? *Journal of Wildlife Management*. 8:1869-1871.

*undergraduate coauthor

**graduate student coauthor

***high school student coauthor

FUNDING

- in review* NIH & NIGMS MIRA (R35GM124701 renewal, PI). The evolutionary genetics and genomics of *Wolbachia* effects on host physiology, **\$2,222,000**
- 2017–2022 NIH & NIGMS MIRA (R35GM124701, PI). The evolutionary genetics and genomics of *Wolbachia* effects on host physiology, **\$1,802,630**
- 2021 NIH (3P20GM103546-10S1, co-lead with J. Good and E. Woodahl; supplement to 5P20GM103546-10, PI Bowler). Surveillance genome sequencing to detect SARS-CoV-2 virus variants in Montana, **\$704,474**
- 2020–2022 NSF PRFB (Postdoc award, PI Shropshire), **\$138,000**
- 2014–2017 NIH & NIAID NRSA (F32AI114176), **\$154,662**
- 2014 NSF DDIG (1547267), **\$20,274**

OTHER AWARDS

- 2017 Searle Award Nominee, University of Montana
- 2014 UC Davis College of Biological Sciences Postdoctoral Fellow, Finalist American Society of Naturalists, Student Research Award, **\$2,000**
- 2012–2014 NIH Training Fellowship in Genetics, **\$100,000**
- 2012 Indiana Academy of Science, Senior Research Award, **\$3,000**
Evolution and Development IGERT, Travel Award, **\$300**
- 2011 Indiana University, College of Arts and Sciences Travel Award, **\$300**
- 2010 SICB Grant in Aid of Research, **\$1,000**
Indiana University, University Fellowship, **\$12,000**
- 2007–2009 Indiana State University, Student Research Awards, **\$4,600**
- 2008 Indiana Academy of Science, Senior Research Award, **\$2,554**
Indiana State University Research Showcase, Best Graduate Presentation
- 2007 Eli Lilly Endowment Fellowship, **\$5,000**
Donald and Mary Jo Stanley Endowed Scholarship in Science, **\$1,200**

TEACHING EXPERIENCE

- fall 2020–present* Instructor, Principles of Living Systems (plus labs), University of Montana (350-450 students)
- spr. 2020–present* Instructor, Host-microbe Interactions (full) Writing Course, University of Montana (20 students each writing 20 pages)
- spr. 2019* Instructor, Host-microbe Interactions, University of Montana
- 2017–present* Instructor, CHALK Seminar, University of Montana
- 2012* Associate Instructor, L318-Evolution, Indiana University
- 2010–2011* Associate Instructor, L111-Intro. to Evolution, Indiana University
- 2008–2009* Head Teaching Assistant, 101L-Intro. Biol., Indiana State University
Teaching Assistant, 113-Human Aspects of Biol., Indiana State University

PRESENTATIONS

- upcoming* Department of Biology and Biochemistry, University of Houston, TX
- 2020* Alumni Association, University of Montana, Missoula, MT
Montana Natural History Center (multi-week webinar)
- 2019* Department of Biology, University of North Carolina, Chapel Hill, NC
Big Sur *Wolbachia* Meeting, Big Sur, CA
Imagine Nation Community Center, Missoula, MT
- 2018* Institute of Ecology and Evolution, University of Oregon, Eugene, OR
Big Sur *Wolbachia* Meeting, Big Sur, CA
Wolbachia Conference, Salem, MA
Missoula Insectarium, Missoula, MT
Southwest Research Station, Portal, AZ
- 2017* Biological Sciences, Clemson University, Clemson, SC
Center for Population Biology, University of California, Davis, CA
CMMB seminar series, University of Montana, Missoula, MT
OBEE seminar series, University of Montana, Missoula, MT
- 2016* Division of Biological Sciences, University of Montana, Missoula, MT
Center for Population Biology, University of California, Davis, CA
Wolbachia Conference, Lamington Plateau, Queensland, Australia
- 2015* Genetics Society of America, Fly Meeting, Chicago, IL
Society for the Study of Evolution meeting, Guaraja, Brazil
Davis Fly group, University of California Davis, Davis, CA
- 2014* College of Biological Sciences, University of California, Davis, CA
Genetics Society of America, Fly Meeting, San Diego, CA
NIH GCMS monthly meeting, Indiana University, Bloomington, IN
- 2013* Department of Genetics, University of Georgia, Athens, GA
Society for the Study of Evolution meeting, Snowbird, UT
National Institutes of Health GCMS monthly meeting, Bloomington, IN
Genetics Society of America, Fly Meeting, Washington, DC
Society for Comparative and Integrative Biology, San Francisco, CA
- 2012* Genetics Society of America, Fly Meeting, Chicago, IL
Evolution and Development (IGERT), Portland, OR
Society for Comparative and Integrative Biology, Charleston, SC
- 2011* Society for Comparative and Integrative Biology, Salt Lake City, UT
Fly IU, Indiana University, Bloomington
EEB Brown Bag Series, Indiana University, Bloomington, IN
- 2010* Society for Comparative and Integrative Biology, Seattle, WA
- 2009* Society for Comparative and Integrative Biology, Boston, MA
Midwest *Drosophila* Conference, Allerton, IL
- 2008* Indiana State University Graduate Showcase, Terre Haute, IN
Society for Comparative and Integrative Biology, San Antonio, TX

PROFESSIONAL ACTIVITIES

- Invited Editor – *mBio*, 2020; *PLoS Pathogens*, 2020
Referee for Professional Publications – *The American Naturalist*, *Biology*

Open, Ecology and Evolution, Elife, Evolution, Evolutionary Applications, Functional Ecology, G3, Genetics, Global Change Biology, Genetics, Heredity, Journal of Thermal Biology, Molecular Biology & Evolution, mBio, Molecular Ecology, PLoS Biology, PLoS One, PLoS Pathogens, PNAS, and Proceedings of the Royal Society B

Sole Organizer - Big Sur *Wolbachia* meeting, 2018 and 2019

Postdoctoral Fellows Mentored – Michael T.J. Hague, 2019–; J. Dylan Shropshire, 2020–

Graduate Students Mentored – Jessie A. Bailey, 2018–2020; Kelley Van Vaerenberghe, 2019–; John Statz, 2021–

Graduate Student Committees – Camilla DeMattos, 2019– ; Christopher Pierpont, 2017– ; Fernando Rodriguez-Caro, 2020– ; Amelia Schmidt, 2020– ; Caleb Schwartzkopf, 2019– ; Dan Vanderpool, 2017–2018; Cole Wolf, 2017–

Professional Society Affiliations – AAAS, American Society of Naturalists, Genetics Society of America, Society for Integrative and Comparative Biology, and the Society for the Study of Evolution

Departmental Service – Faculty: member of the CMMB graduate admissions committee; Graduate School: graduate student representative for the external review of the EEB program at Indiana University (2013), organizer of the NIH GCMS Symposium (2013), graduate student host at the graduate student recruitment weekend (2011)

University Service – Faculty: member of the Research and Creative Scholarship Council, member of the Campus Emergency Preparedness Group (spring/summer 2020), advised President Bodnar and others on COVID response, member of the COVID Health Advisory Group, provided educational webinars on COVID for alumni and the Missoula community, communicated with Governor Bullock’s COVID response team on increasing COVID testing locally and statewide.

September 3, 2021