

Alycia C. R. Lackey

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EDUCATION & APPOINTMENTS

- 2020- **Assistant Professor**
Department of Biology, University of Louisville
- 2017-2020 **Postdoctoral Researcher**
Binghamton University, Advisor: Thomas Powell
- 2014-2017 **Postdoctoral Researcher and Instructor**
Watershed Studies Institute, Murray State University, Advisor: Howard Whiteman
- 2013 **Ph.D. in Zoology; Ecology, Evolutionary Biology, and Behavior** (Dual degree)
Michigan State University, Advisor: Janette Boughman
Zoology, Statistics Minor, Certificate in Teaching, University of Wisconsin at Madison
transferred to Michigan St U with Ph.D. advisor to complete degree in 2009
- 2006 **B.S. in Biology** (Honors), Chemistry Minor
University of North Carolina at Chapel Hill

PUBLICATIONS ^Ggraduate student, ^Uundergraduate student

- Shelton, DS, MM Delgado, EVG Greenway, EA Hobson, **ACR Lackey**, A Medina-Garcia, BA Reinke, PA Trillo, CP Wells, MC Horner-Devine. Expanding the landscape of opportunity: Professional societies support early career researchers through community programming and peer coaching. Journal of Comparative Psychology *Invited for special issue accepted*
- Tinghitella, RM, **ACR Lackey**, C Durso, JAH Koop, JW Boughman. 2020. The ecological stage changes benefits of mate choice and drives preference divergence. Philosophical Transactions of the Royal Society B 375: 20190546. *Invited for special issue*
- Lackey, ACR**, MP Moore^G, J Doyle, N Gerlanc, A Hagan^U, M Geile^U, C Eden^U and HH Whiteman. 2019. Lifetime fitness, sex-specific life history, and the maintenance of a polyphenism. The American Naturalist 194: 230-245.
- Tinghitella, RM, **ACR Lackey**, MD Martin, PD Dijkstra, ESC Scordato, RJP Heathcote, JP Drury, J Keagy and AM Tyers. 2018. A major player need not be the only player in speciation: a response to comments on Tinghitella et al. Behavioral Ecology 29: 802-803.
- Tinghitella, RM*, **ACR Lackey***, MD Martin*, PD Dijkstra, ESC Scordato, RJP Heathcote, JP Drury, J Keagy, and AM Tyers. 2018. The role of male competition in speciation: A review and research agenda. Behavioral Ecology 29: 783-797. *co-first authors *Invited review*
Top 7 of highly cited papers in Behavioral Ecology in past 2 years
- Lackey, ACR**, RM Tinghitella and MD Martin. 2018. Male competition and speciation: expanding our framework for speciation by sexual selection. Current Zoology 64: 69-73. *Invited editorial as guest editor of special column*
- Lackey, ACR** and JW Boughman. 2017. Evolution of reproductive isolation in stickleback fish. Evolution 71: 357-372. **F1000 Recommended**

- Lackey, ACR** and JW Boughman. 2014. Female discrimination against heterospecific mates does not depend on mating habitat. *Behavioral Ecology* 25: 1256-1267.
- Lackey, ACR** and JW Boughman. 2013. Loss of sexual isolation in a hybridizing stickleback species pair. *Current Zoology* 59: 591-603.
- Lackey, ACR** and JW Boughman. 2013. Divergent sexual selection via male competition: ecology is key. *Journal of Evolutionary Biology* 26: 1611-1624. **Editor's choice article**
- Kozak GM, ML Head, **ACR Lackey** and JW Boughman. 2013. Sequential mate choice and sexual isolation in threespine stickleback species. *Journal of Evolutionary Biology* 26: 130-140.
- Pfennig KS, AJ Chunco and **ACR Lackey**. 2007. Ecological selection and hybrid fitness: hybrids succeed on parental resources. *Evolutionary Ecology Research* 9: 341-354.

In review & revision

- Lackey, ACR**, HH Whiteman. Experimental warming reduces body mass but not reproductive investment. *Ecology in review*

In preparation

- Lackey, ACR**, GJ Ragland, DA Hahn, JL Feder, THQ Powell. Climate change shifts life cycles and increases gene flow between diverging host races of *Rhagoletis pomonella* with cascading effects on wasp parasitoids.
- Lackey, ACR**, AC Murray^U, NA Mirza^U, THQ Powell. The role of sexual isolation during rapid ecological divergence.

GRANTS & FELLOWSHIPS

- 2016-2017 **National Science Foundation**, IOS Meeting Proposal "Meeting: Travel support for diverse early career scientists to attend the 16th Congress of the International Society for Behavioral Ecology, University of Exeter, UK, 2016," PI: **ACR Lackey**, Co-PIs: MD Martin, RM Tinghitella, \$20,000 (*travel awardees selected through application process based on promoting diversity in science and accomplishments in research, teaching, and outreach*)
- 2011-2012 **Sigma Delta Epsilon-Graduate Women in Science Research Fellowship**, \$6600
- 2010-2013 **National Science Foundation GK-12 Fellowship** (STEM Graduate students in K-12 classrooms) (3x), Michigan St U, Kellogg Biological Station, \$72,500
- 2010-2013 **Dissertation Fellowship** (3x), Michigan St U, College of Natural Science, \$18,000
- 2010 **John R. Shaver Research Fellowship**, Michigan St U, Zoology Department, \$1,200
- 2008-2009 **Emlen Research Fellowship** (2x), UW-Madison, Department of Zoology, \$10,000
- 2007 **National Science Foundation Graduate Research Fellowship**, Honorable Mention

AWARDS

- 2013 **Distinguished Student Speaker Award**, Michigan St U, Ecology, Evol. Biology, & Behavior (*one out of ~100 graduate students selected per semester for department seminar*)
- 2013 **Rachel Carson Silent Spring Award**, Graduate Women in Science Michigan St U chapter, Michigan State University Museum (*six female graduate students selected to have research highlighted in museum exhibit*)

Travel Awards

2019 NSF Meeting Travel for the International Congress of Entomology 2020
 2019 Animal Behavior Society
 2018 Society for the Study of Evolution
 2010, 2018 European Society for Evolutionary Biology (2x)
 2014, 2016 International Society for Behavioral Ecology (2x)
 2012-2013 BEACON Center for Evolution in Action, Michigan St U (2x)
 2012 Graduate Women in Science
 2012 Council of Graduate Students, Michigan St U
 2011-2013 GK-12, Michigan St U, Kellogg Biological Station (3x)
 2010-2013 Ecology, Evolutionary Biology, and Behavior, Michigan St U (4x)
 2010-2013 College of Natural Science, Michigan St U (4x)
 2010-2012 Graduate School, Michigan St U (3x)
 2009 John Jefferson Davis Travel Award, UW-Madison, Department of Zoology

TEACHING EXPERIENCE

University of Louisville

Biostatistics, Spring & Fall 2021
 Advanced Biostatistics (graduate), Fall 2020

Murray State University

Saving Planet Earth (undergraduate, non-majors), Fall 2014 & 2015, Spring 2017
 Principles in Ecology (undergraduate, majors), Fall 2016
 Biological Inquiry and Analysis (undergraduate, majors), Spring 2014, 2015, 2016

Teaching Assistant

Ecological Aspects of Animal Behavior, Michigan St U, Fall 2012 & 2013
 Ecology Lab, Michigan St U, Spring 2010
 Organisms and Populations Lab, Michigan St U, Fall 2009
 Human and Animal Relationships, UW-Madison, Spring 2009
 Evolution of Behavior, UW-Madison, Fall 2007 & 2008
 Introductory Biology Lab, UW-Madison, Fall 2006 & Spring 2008

Teaching training programs (3)

QUBES and InTeGrate Faculty Mentoring Network Participant, Spring 2017

Customized and implemented data-driven, active learning lessons; discussed teaching and learning approaches in faculty group distributed nationally; published teaching materials

GK-12 Teaching Fellow, Michigan St U, Kellogg Biological Station, 2010-2013

Guided inquiry of topics in biology, chemistry, earth science, and physics, 100s of students

Teaching Certificate Recipient, Delta Program, UW-Madison, 2008-2009

Teaching Portfolio (published), Research-as-Teaching Internship, three graduate-level courses

Teaching courses (4)

How to Design and Teach Courses Online, Michigan St U, 2010

Research Mentor Training, UW-Madison, Delta Program, 2008

Diversity in the College Classroom, UW-Madison, Delta Program, 2008

Informal Science Education, UW-Madison, Delta Program, 2008

Teaching workshops (12)

How Can We Identify Implicit Biases in Ourselves and Others? CIRTL Network, 2018
Connecting Cultural Inclusion to Pedagogy, Binghamton U, 2018
Integrating Meaningful Reflection into Course Design, Murray St U, 2016
Purposeful Teaching: Effectively Using Student Groups and Teams, Murray St U, 2015
Making Student Engagement Activities More Meaningful, Murray St U, 2015
Team-based Learning, Murray St U, 2015
Building, Training, and Assessing Student Teams, Michigan St U, 2013
Writing Quality Test Items for Multiple-Choice Tests, Michigan St U, 2009
Active Learning (full day workshop), UW-Madison, 2008
Teaching in Writing-Intensive Courses, UW-Madison, 2006
Assessing Student Performance and Providing Feedback, UW-Madison, 2006
Teaching Natural Science Labs, UW-Madison, Fall 2006

Guest Lectures (12)

Biostatistics (2x), Binghamton University, 2018
 Ecology (2x), Binghamton University, 2018-19
 Ecological Aspects of Animal Behavior (6x), Michigan State University, 2010-13
 Human and Animal Relationships, University of Wisconsin-Madison, 2009
 Evolution of Behavior, University of Wisconsin-Madison, 2008

GRADUATE STUDENTS MENTORED

University of Louisville

Sophia Anner 2021-
 Shayna Rosenbloom 2021-

UNDERGRADUATE STUDENTS MENTORED (33)

University of Louisville

Alyssa Gebhardt. Life history consequences of climate change across latitudes in *Rhagoletis* flies. 2021-
 Davis Hampson. Life history consequences of climate change across latitudes in *Rhagoletis* flies. 2021-
 Alex Scheper. Life history consequences of climate change across latitudes in *Rhagoletis* flies. 2021-
 Alyssa Wilson. Life history consequences of climate change across latitudes in *Rhagoletis* flies. 2021-

Binghamton University

Sophia Hall. How climate change shifts life history timing in *Rhagoletis* flies. 2019-
 Andrew Lupinski. How climate change shifts life history timing in *Rhagoletis* flies. 2019-
 Gina Rizzo. How climate change shifts life history timing in *Rhagoletis* flies. 2019-
 Sydney Silverman. How climate change shifts life history timing in *Rhagoletis* flies. 2019-
 Steven Silverman. How climate change shifts life history timing in *Rhagoletis* flies. 2019-
 Nadia Mirza. *Honors thesis*: Adult lifespan differs between *Rhagoletis pomonella* fly populations adapted to different host fruits. 2017-2019
Poster, Binghamton University's Research Days, 2019
 Alyssa Murray. Independent research: Recently diverged populations: has mating preference evolved

within host races? 2017-2019

Undergraduate Diversity Travel Award, Society for the Study of Evolution, ~\$1300

Poster, Evolution, Providence, RI, 2019

Poster, Binghamton University's Research Days, 2019

Maria Molina Mera. Testing effects of climate change on fecundity in *Rhagoletis* flies. 2017-2019

Adeenah Ahmed. Consequences of climate change on speciation in *Rhagoletis* flies. 2017-2019

Eden Romeo. Consequences of climate change on speciation in *Rhagoletis* flies. 2017-2019

Wilmer Estevez (post-bac). Consequences of climate change on speciation in *Rhagoletis* flies. 2018

Austin Dukat. Consequences of climate change on speciation in *Rhagoletis* flies. 2017-2018

David Fama. Consequences of climate change on speciation in *Rhagoletis* flies. 2017-2018

Ilana Pyatetsky. Consequences of climate change on speciation in *Rhagoletis* flies. 2017-2018

Murray State University

Meaghan Fowler. Effects of climate change on salamander life history. 2017

Coty Fields. Effects of climate change on salamander life history. 2016-2017

Matthew Baggott. Effects of climate change on salamander life history. 2016

Michigan State University

Alexander Fox. Impacts of mating habitat on female mate choice in stickleback fish. 2011-2012

Best Poster, Michigan State University's Undergraduate Research and Arts Forum, 2012

Undergraduate Research Support Scholarship, College of Natural Science, Fall 2011, \$1000

Nicole Ross. Gametic and genetic incompatibilities in stickleback fish. 2011

Undergraduate Research Support Scholarship, College of Natural Science, Summer 2011, \$1000

Paulina Phomvongsa. Gametic and genetic incompatibilities in stickleback fish. 2010-2011

Katherine Woodhams. Morphological changes in hybridizing stickleback fish. 2010

University of Wisconsin-Madison

Anne Janisch. Divergent sexual selection via male competition: ecology is key. 2009

Robert Kitsis. Divergent sexual selection via male competition: ecology is key. 2009

Erik Kopperud. Co-advised. Morphological changes in hybridizing stickleback fish. 2009

Claire Long. Loss of sexual isolation in hybridizing stickleback fish. 2008

Matthew Rounds. Loss of sexual isolation in hybridizing stickleback fish. 2008

Mallory Barnes. Fitness consequences of diet manipulation in stickleback fish. 2007

Andrea Brauer. Fitness consequences of diet manipulation in stickleback fish. 2007

Kevin Loope. Fitness consequences of diet manipulation in stickleback fish. 2007

SCHOLARLY PRESENTATIONS

Symposia Organized

2016 Male competition and speciation: causes, consequences, and interactions with mate choice and ecology. *International Society for Behavioral Ecology*. Exeter, UK. Organizers: **ACR Lackey**, MD Martin, RM Tinghitella.

Invited talks (21)

- 2021 Divergent sexual selection via male competition: ecology is key, Penn State University. State College, PA.
- 2020 Response to rapid environmental change: consequences for adaptation, divergence, and species interactions. Northern New Mexico College. Española, NM.
- 2020 Climate change shifts life cycles and increases gene flow between diverging host races of *Rhagoletis pomonella* with cascading effects on wasp parasitoids. XXVI International Congress of Entomology. Helsinki, Finland. *Cancelled due to COVID*
- 2020 Response to rapid environmental change: consequences for adaptation, divergence, and species interactions. University of Massachusetts - Dartmouth. Dartmouth, MA.
- 2019 Response to rapid environmental change: consequences for adaptation, divergence, and species interactions. Southern Oregon University. Ashland, OR.
- 2019 Response to rapid environmental change: consequences for adaptation, divergence, and species interactions. Agnes Scott College. Decatur, GA.
- 2019 Response to rapid environmental change: consequences for adaptation, divergence, and species interactions. University of Louisville. Louisville, KY.
- 2018 Understanding how populations adapt and diverge: insights from salamanders, fish, and flies. Wichita State University. Wichita, KS.
- 2018 Understanding how populations adapt and diverge: insights from salamanders, fish, and flies. Moravian College. Bethlehem, PA.
- 2018 Ecology can promote or hinder divergent evolution. Binghamton University. Binghamton, NY.
- 2017 Evolution and ecology interact to promote diversity within populations: fitness consequences in polymorphic salamanders. Stephen F. Austin University. Nacogdoches, TX.
- 2017 Divergent vs. convergent sexual selection from male competition: ecology is key. Evolution. Portland, OR. *Spotlight symposium on male competition and speciation*.
- 2017 Evolution of reproductive isolation in stickleback fish. Gordon Research Seminar - Speciation. Lucca, Italy.
- 2016 How ecology can promote or hinder divergence. West Chester University. West Chester, PA.
- 2016 Male competition and speciation: causes, consequences, and interactions with mate choice and ecology. International Society for Behavioral Ecology. Exeter, UK.
- 2016 Divergent sexual selection via male competition: ecology is key. International Society for Behavioral Ecology. Exeter, UK.
- 2014 Understanding how interactions between ecology and evolution can make or break species. Ithaca College. Ithaca, NY.
- 2014 Speciation in stickleback fish: interactions between sexual selection and ecology can make or break species. Murray State University. Murray, KY.
- 2013 The lovers and the fighters: when, where, and how do choosy females and aggressive males favor differences between species? Oberlin College. Oberlin, OH.
- 2012 In the light of ecology: impacts of habitat on mate choice, male competition, and speciation in stickleback fish. Distinguished Student Speaker, Ecology, Evolutionary Biology, and Behavior, Michigan State University. East Lansing, MI.

2012 Reflections on work-life balance. Graduate Women in Science 91st National Conference. Madison, WI.

Selected conference presentations (21) ^Ggraduate student, ^Uundergraduate student

- 2021 **Lackey, ACR**, E Scordato, RM Tinghitella, J Keagy, R Heathcote. The role of mate competition in speciation and divergence: a systematic review. Animal Behavior. virtual
- 2021 **Lackey, ACR**, E Scordato, RM Tinghitella, J Keagy, R Heathcote. The role of mate competition in speciation and divergence: a systematic review. Evolution. virtual
- 2019 **Lackey, ACR**, AC Murray^U, GJ Ragland, DA Hahn, JL Feder, THQ Powell. Reduced mating between populations can evolve very early in divergence. Behaviour. Chicago, IL.
- 2019 **Lackey, ACR**, GJ Ragland, DA Hahn, JL Feder, THQ Powell. Climate change shifts life cycles and increases gene flow between diverging host races of *Rhagoletis pomonella* with cascading effects on wasp parasitoids. Evolution. Providence, RI.
- 2018 **Lackey, ACR**, GJ Ragland, DA Hahn, JL Feder, THQ Powell. Divergence between populations and strong local adaptation may limit adaptive response to climate change with cascading effects on the community. 2nd Joint Congress on Evolutionary Biology. Montpellier, France.
- 2017 **Lackey, ACR**, MP Moore^G, HH Whiteman. Multiple paths to success: fitness consequences of tiger salamander morphs with different life history strategies. Talk, Evolution. Portland, OR.
- 2017 **Lackey, ACR** and JW Boughman. Evolution of reproductive isolation in stickleback fish. Poster, Gordon Research Conference - Speciation. Lucca, Italy.
- 2016 **Lackey, ACR**, MP Moore^G, HH Whiteman. Understanding the maintenance of polyphenism using lifetime reproductive success in a long-lived amphibian. Talk, International Society for Behavioral Ecology. Exeter, UK.
- 2016 **Lackey, ACR**, MP Moore^G, HH Whiteman. Understanding the maintenance of polyphenism using lifetime reproductive success in a long-lived amphibian. Talk, Evolution. Austin, TX.
- 2014 **Lackey, ACR** and JW Boughman. Female discrimination against heterospecific mates does not depend on mating habitat. Talk, International Society for Behavioral Ecology. New York, NY.
- 2014 **Lackey, ACR** and JW Boughman. Patterns of reproductive isolation in five stickleback species pairs that span the speciation continuum. Talk, Evolution. Raleigh, NC.
- 2013 **Lackey, ACR** and JW Boughman. Divergent sexual selection via male competition: ecology is key. Talk, Animal Behavior. Boulder, CO.
- 2013 **Lackey, ACR** and JW Boughman. Comparing contributions to reproductive isolation in intact and collapsed stickleback fish species pairs. Poster, American Genetic Association. Ithaca, NY.
- 2013 **Lackey, ACR** and JW Boughman. Comparing contributions to reproductive isolation for intact and collapsed stickleback species pairs. Talk, Evolution. Snowbird, UT.
- 2012 **Lackey, ACR** and JW Boughman. Reproductive isolation strength impacts how females use mating habitats to discriminate between species. Talk, 1st Joint Congress on Evolutionary Biology. Ottawa, Canada.
- 2012 **Lackey, ACR** and JW Boughman. Ecology and sexual selection interact to maintain species: how mating habitats influence mate choice between species. Invited poster, Graduate Women in Science 91st National Conference. Madison, WI.

- 2012 Ballew, N, **ACR Lackey**, E Schultheis, T Suwa, R Tinghitella, T Getty, and M Angle. Building long-term research projects and collaborations. Invited workshop, *Graduate STEM Fellows in K-12 Education Annual Meeting (GK-12)*. Washington D.C. (all authors contributed equally)
- 2011 **Lackey, ACR** and JW Boughman. Altered female mate choice: loss of reproductive isolation in a threespine stickleback species pair. Poster, *Animal Behavior*. Bloomington, IN.
- 2010 **Lackey, ACR** and JW Boughman. Impacts of changing habitats on male competition and reproductive isolation in stickleback fish. Poster, *Genetics and the Origin of Species: the continuing synthesis*. Ithaca, NY.
- 2010 **Lackey, ACR** and JW Boughman. Impacts of changing habitats on male competition and reproductive isolation in stickleback fish. Talk, *Evolution*. Portland, OR.
- 2009 **Lackey, ACR** and JW Boughman. Collapse of ecological speciation through hybridization: the breakdown of sexual isolation in a threespine stickleback species pair (*Gasterosteus* spp.). Poster, *12th Congress of the European Society for Evolutionary Biology*. Turin, Italy.

OUTREACH & DIVERSITY, EQUITY, & INCLUSION

- 2021 **Weaving the Future of Animal Behavior for BIPOC scientists**, Workshop for the Animal Behavior Society Conference, two-day interactive seminar series on mentoring and professional development, created of supportive peer networks centered around scientists identifying as Black, Indigenous, and People of Color as well as their allies
- 2020 **Black in Animal Behavior**, Social Media Campaign on Twitter #BlackInAnimalBehavior showcasing Black scholarship, promoting networking & community engagement
News: https://massivesci.com/notes/black-in-neuro-astro-chem-botanists-the-ivory-excellence/?utm_campaign=meetedar&utm_medium=social&utm_source=meetedar.com
- 2018 **STEAMfest**, Binghamton University
- 2016 **K-12 'Data Nuggets' Facilitator & Contributor**, NSF grant resulted in 11 data-driven worksheets that promote critical thinking and quantitative reasoning
- 2013 **Guest Blogger**, BEACON Center for Evolution in Action
- 2012 **Middle School Girls Math and Science Day Event Coordinator**, Michigan St U
- 2012 **Darwin Discovery Day Presenter**, Michigan St U
- 2011 **National Outreach and Scholarship Conference Participant**, Michigan St U
- 2011 **K-12 'Data Nuggets' Contributor**, Developed 2 educational worksheets from Ph.D. research
- 2011 **Girls' Math and Science Day Presenter**, Michigan St U
- 2007-2009 **Darwin Day Presenter**, UW-Madison (3x)
- 2008 **Expanding Your Horizons Conference Presenter**, UW-Madison
- 2007-2008 **Research Shadowing Mentor**, UW-Madison (2x)
- 2004-2006 **Informal Science Educator & Summer Science Camp Director**, North Carolina Museum of Life & Science, Durham, NC
- 2003-2005 **Women's Leadership Coordinator**, Womentoring, UNC-Chapel Hill

PROFESSIONAL ACTIVITIES

- 2021 **NSF grant panelist**
- 2021 **NSF grant panelist**
- 2019 **Speciation Genomics Course Participant**, Physalia Courses, Quebec City, Canada
- 2019 **Weaving the Future of Animal Behavior Participant** (professional development workshop), Animal Behavior Society, Phoenix, Arizona

- 2018 **Guest editor**, Current Zoology, Special Column on Male Competition and Speciation
 2016 **Ad hoc reviewer**, National Science Foundation, Division of Environmental Biology (2x)
 2016 **Symposium co-organizer**, International Society for Behavioral Ecology
 2014 **Conference Abstract Reviewer**, International Society for Behavioral Ecology,
 2010-2011 **Vice President & Chapter Liaison**, Graduate Women in Science, Michigan St U Chapter
 2007-2008 **Secretary**, Zoology Graduate Student Organization, UW-Madison
 2006-2007 **Student Representative**, Instructional Programs Committee, UW-Madison

Manuscript Reviewer

The American Naturalist, Proceedings of the Royal Society B: Biological Sciences, Evolution, Behavioral Ecology, Animal Behavior, Evolutionary Biology, Behavioral Ecology and Sociobiology, Evolutionary Ecology, Biological Journal of the Linnean Society, Canadian Journal of Zoology, Current Zoology, Behaviour, Environmental Entomology, UofL's The Cardinal Edge

Professional Society Member

Society for the Study of Evolution, European Society for Evolutionary Biology, American Society of Naturalists, International Society for Behavioral Ecology, Animal Behavior Society