



Department of Ecology and Evolutionary Biology
University of Connecticut
75 N. Eagleville Rd, Unit 3043
Storrs CT, 06269-3043

Office Phone: 1 (860) 486-8964

Website: JamesMickley.com

Email: james.mickley@uconn.edu

POSTDOCTORAL EXPERIENCE

2018 – present **University of Connecticut**, Storrs, CT.
Postdoctoral Research Associate in Ecology and Evolutionary Biology
Project: *Collaborative Research: Effects of forest fragmentation on Lepidopteran herbivores of contrasting diet breadth.* ([NSF DEB #1557086](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1557086)).
Advisor: Dr. Robert Bagchi

EDUCATION

2010 – 2017 **University of Connecticut**, Storrs, CT.
Ph.D. in Ecology and Evolutionary Biology
Dissertation Title: *The Adaptive Nature of Stasis for Petal Number: Can Pollinator-mediated Stabilizing Selection Explain Five-petaled Flowers?*
Advisor: Dr. Carl Schlichting

2008 – 2010 **Stony Brook University**, Stony Brook, NY
Master of Arts in Ecology and Evolution
Thesis Title: *Seed Banks in Invasive Plants; Prevalence, Prediction of Invasion and Control.*
Advisor: Dr. Jessica Gurevitch

2004 – 2008 **Kalamazoo College**, Kalamazoo, MI
Bachelor of Arts in Biology, Magna Cum Laude
Undergraduate Thesis Title: *Tree Density and Fire Scarring in Minnesota Oak Savanna: Implications for Restoration.*
Undergraduate Advisor: Dr. E. Binney Girdler

PUBLICATIONS

* joint first authorship; ^g graduate mentee; ^u undergraduate mentee

Near Submission

Pasquarella, V., **J. Mickley**, R. Anderson^g, D. Wagner, M. Singer, & R. Bagchi. Remote sensing as a reliable tool for gypsy moth population assessment.

Mickley, J. & C. Schlichting. Assessing evidence for pollinator-mediated stabilizing selection on petal number.

Mickley, J. & C. Schlichting. Heritable variation in petal number, correlated selection responses, and merosity in *Phlox drummondii*.

In Review

Milici, V.^g, D. Dalui^g, **J. Mickley**, & R. Bagchi. Responses of plant-pathogen interactions to precipitation: implications for tropical tree richness in a changing world. *Journal of Ecology*.

In Press

- 9 Anderson, R^g., N. Dallar, N. Pirtel^u, C. Connors^u, **J. Mickley**, R. Bagchi, & M. Singer. Bottom-up and top-down effects of forest fragmentation differ between dietary generalist and specialist caterpillars. *Frontiers in Ecology and Evolution*.
- 8 **Mickley, J.** & N. Taylor. 2019. Occurrence of Thymeleaf Sandmat *Euphorbia serpillifolia* Persoon (Euphorbiaceae) in Vermont. *Rhodora*.

Published

- 7 **Mickley, J.**, T. Moore, C. Schlichting, A. DeRobertis^u, E. Mason^u, and R. Bagchi. 2019. Measuring microenvironments for global change: DIY environmental microcontroller units (EMUs). *Methods in Ecology and Evolution* 10:578–584. doi: [10.1111/2041-210X.13128](https://doi.org/10.1111/2041-210X.13128). Github website: github.com/mickley/EMU.
- 6 **Mickley, J.**, and C. Schlichting. 2018. Revisiting an old question in California botany: Why do many plant species have five-petaled flowers? *Mojave National Preserve Science Newsletter*. 13-16.
- 5 Rico-Guevara, A.* , and **J. Mickley***. 2017. Bring your own camera to the trap: An inexpensive, versatile, and portable triggering system tested on wild hummingbirds. *Ecology and Evolution* 7:4592-4598. doi: [10.1002/ece3.3040](https://doi.org/10.1002/ece3.3040).
- 4 Ferson, S., J. O’Rawe, A. Antonenko, J. Siegrist, **J. Mickley**, C. Luhmann, K. Sentz, and A. Finkel. 2015. Natural language of uncertainty: numeric hedge words. *International Journal of Approximate Reasoning*. 57:19-39. doi: [10.1016/j.ijar.2014.11.003](https://doi.org/10.1016/j.ijar.2014.11.003).
- 3 Lowry, E., E. Rollinson, A. Laybourn, T. Scott, M. Aiello-Lammens, S. Gray, **J. Mickley**, and J. Gurevitch. 2013. Biological Invasions: A Field Synopsis, Systematic Review, and Database of the Literature. *Ecology and Evolution* 3(1):182-196. doi: [10.1002/ece3.431](https://doi.org/10.1002/ece3.431).

- 2 Ferson, S., **J. Mickley**, and W. McGill. 2011. Uncertainty Arithmetic on Excel Spreadsheets: Add-In for Intervals, Probability Distributions, and Probability Boxes. *Vulnerability, Uncertainty, and Risk*. 70-77. doi: [10.1061/41170\(400\)9](https://doi.org/10.1061/41170(400)9).
- 1 **Mickley, J.** 2008. Tree density and fire scarring in Minnesota Oak Savanna: Implications for Restoration. Undergraduate Thesis. Kalamazoo College Biology Department. 46 pp. doi: [10920/24324](https://doi.org/10.920/24324).

AWARDS, GRANTS, & FELLOWSHIPS

- \$2,000** **Doctoral Dissertation Fellowship.** 2015. The Graduate School, University of Connecticut, Storrs, CT.
- \$600** **Departmental Service Award.** 2015. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT. Received for developing an online database and map of the campus arboretum.
- Nominated* **Departmental Excellence in Student Teaching Award.** 2015. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT.
- \$1,460** **Ronald Bamford Research Grant.** 2014. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT. *Pollination Syndrome as a Driver of Variation in Petal Number: Do Pollinators Impose Stabilizing Selection?*
- \$30,500** **Outstanding Scholar Fellowship.** 2010-2013. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT. Three years.
- \$4,000** **Presidential Fellowship,** 2008-2010. Department of Ecology and Evolution, Stony Brook University, Stony Brook, NY. Two years.
- \$20,000** **Graduate Council Fellowship.** 2008-2010. The Graduate School, Stony Brook University, Stony Brook, NY. Two years.
- \$100** **Ronald O. Kapp Undergraduate Award** 2008. Best undergraduate paper, Annual Conference of the Michigan Academy of Sciences, Arts, and Letters. *Tree density and fire scarring in Minnesota oak savanna: Implications for restoration.*

CONTRIBUTED PRESENTATIONS

^g graduate mentee; ^u undergraduate mentee

- 8/2019 **Mickley J.**, R. Anderson^g, N. Pirtel^u, H. Musavi^u, C. Garvey^u, C. Connors^u, C. Marren^u, M. Singer, D. Wagner, C. Elphick, & R. Bagchi. *Causal factors of changes in the specificity of plant–herbivore interactions in fragmented landscapes*. 2019 Ecological Society of America Meetings, Louisville, KY.

- 7/2016 **Mickley J.**, & C. Schlichting. *Mating System as a Driver of Variation in Floral Petal Number: Is There Evidence for Adaptation to Pollinators?* 2016 Botany Society of America Meetings, Savannah, GA.
- 6/2016 **Mickley J.**, & C. Schlichting. *Variation, Heritability, and Correlated Selection in Phlox Petal Number.* 2016 Evolution Meetings, Austin, TX.
- 3/2008 **Mickley, J.** *Tree Density and Fire Scarring in Minnesota Oak Savanna: Implications for Restoration.* Michigan Academy of Sciences, Arts, and Letters Annual Meeting. Kalamazoo, MI.

CONTRIBUTED POSTERS

^g graduate mentee; ^u undergraduate mentee

- 4/2019 Connors, C.^u, **J. Mickley**, R. Anderson^g, N. Daller, M. Singer, & R. Bagchi. *Effect of forest fragmentation on parasitoid attack of moth caterpillars of contrasting diet breadth.* 2019 Northeastern Natural History Conference, Springfield, MA.
- 4/2019 Pirtel, N.^u, A. Minicucci^u, **J. Mickley**, L. Brown, D. Wagner, & R. Bagchi. *The effect of density and diet quality on Lepidopteran larvae melanization.* 2019 Northeastern Natural History Conference, Springfield, MA.
- 6/2015 **Mickley J.**, M. Benedict^u, G. Nuttall^u, C. Hill^u, D. Vine^u, E. Mason^u, & T. Jordan^u. *Why Does Phlox Vary in Petal Number? Heritability, Species, and Population Differences.* New England Botanical Club 120th Anniversary Research Conference, Northampton, MA.
- 6/2015 Yung, J.^u, G. Nuttall^u, H. Holt^u, & **J. Mickley**. *Meristem Diameter as a Predictor of Petal Number: Floral Development in Phlox.* New England Botanical Club 120th Anniversary Research Conference, Northampton, MA.
- 4/2010 Hasan, F. N.^u, K. Wojtas^u, D. Atashsokhan^u, **J. Mickley**, E. Lowry, & J. Gurevitch. *Assessing the Invasive Threat of the Plant *Centaurea stoebe* in New York State.* 2010 URECA, Stony Brook, NY.

RESEARCH EXPERIENCE

2018 – present **Postdoctoral Research Associate**, University of Connecticut, Storrs CT. Supervised NSF-funded fieldwork on trophic interactions of lepidopteran larvae, their host plants, parasites, diseases, and avian predators in the context of forest fragmentation in Connecticut. Trained and mentored graduate and undergraduate students. Coordinated collaboration between principal investigators and other lab groups.
Supervisor: Dr. Robert Bagchi

- 2010 – 2017 **Doctoral Research**, University of Connecticut, Storrs CT.
Devised and oversaw experimental research on variation in floral merosity. Completed field work and collected herbarium vouchers in remote areas of Texas and California to quantify patterns of petal number variation between species and populations and compared field populations in a greenhouse common garden. Conducted pollinator visitation experiments, and collaborated with greenhouse manager to maintain research plants.
Committee: Dr. Carl Schlichting, Dr. Gregory Anderson, Dr. Pamela Diggle, & Dr. Elizabeth Jockusch
- 2010 – 2011 **Research Assistant**, University of Connecticut, Storrs, CT.
Worked on an NSF grant to digitize the CONN herbarium, including databasing, imaging, and georeferencing specimens. Achieved expertise in curatorial practice and collections databases, led student tours, and demonstrated specimen preparation. Connected the CONN database to GBIF, and accelerated databasing efforts via custom software.
Supervisor: Dr. Robert Capers
- 2009 **Graduate Assistant**, Stony Brook University, Stony Brook, NY.
Spearheaded project on demography and invasion dynamics of *Centaurea stoebe*. Designed experiments and established field sites throughout New York to measure demographic parameters. Established partnerships with conservation experts and organizations.
Supervisor: Dr. Jessica Gurevitch
- 2008 **Site Botanist**, Cedar Creek Ecosystem Science Reserve (UMN), Bethel, MN.
Taught plant identification to visiting scientists, graduate students, and interns. Designed and coordinated plant identification experiments including, floral surveys, measurements of percent cover, and identifying clipped biomass. Trained and supervised four interns as botanists. Curated a small herbarium.
Supervisors: Troy Mielke, Dr. Clarence Lehman, & Dr. David Tilman
- 2007 – 2008 **Undergraduate Thesis**, Kalamazoo College, Kalamazoo, MI.
Conducted surveys in *Quercus macrocarpa* and *Q. ellipsoidalis* oak savanna remnants, to assess population trends and their association with fire intervals and fire scarring. Assisted with modeling savanna tree populations in C.
Supervisors: Dr. Clarence Lehman and Dr. Binney Girdler
- 2007 **Intern**, Cedar Creek Ecosystem Science Reserve (UMN), Bethel, MN.
Worked as a botanist on percent cover surveys and identified clipped biomass for numerous experiments.
Supervisors: Troy Mielke, Dr. Clarence Lehman, Dr. Peter Reich
- 2006 **Intern**, Eneabba Field Site (Curtin University), Western Australia, Australia.
Studied the effects of fire on ant-mediated seed dispersal in the genus *Rhytidoponera* in Western Australia.
Supervisors: Dr. Aaron Gove, Neil McCoy, and Dr. Rob Dunn

2004 – 2008 **Research Assistant**, Kalamazoo College, Kalamazoo, MI.
 Renovated and maintained the college greenhouse by installing automatic watering and lighting. Curated the living plant collection. Developed project on above- and below-ground competition and plant neighborhoods in *Arabidopsis thaliana*. Executed shoreline floral surveys to assess the relative importance of neutral and habitat factors in structuring Lake Michigan plant communities and identified plants for a project on the allelopathic effects of *Centaurea stoebe* on invertebrate diversity. Measured the effects of spatial competition, herbivory, and dispersal on the population dynamics of the threatened dune thistle *Cirsium pitcheri*.
 Supervisors: Dr. Binney Girdler and Dr. Ann Fraser

TEACHING EXPERIENCE

2016 – present **Certified Instructor**, Software and Data Carpentry Foundation
 Software and Data Carpentry instructors teach basic scientific programming, reproducible research, and data management skills.

2016 **Teaching Assistant**, EEB 2202 – Evolution and Human Diversity, UConn

2014 – 2015 **Lab Coordinator**, EEB 2244 – General Ecology, UConn (3 semesters)
 Managed 3-5 TAs and designed labs, exams, and other course material

2013 **Teaching Assistant**, BIOL 1110 – Introduction to Botany, UConn

2013 **Teaching Assistant**, BIOL 1108 – Principles of Biology II, UConn

2012 **Teaching Assistant**, BIOL 1102 – Foundations of Biology, UConn (2 semesters)

2011; '14; '17 **Teaching Assistant**, EEB 2244 – General Ecology, UConn (3 semesters)

2008 **Teaching Assistant**, BIO 150 Lecture – Introductory Biology: The Living World, Stony Brook University

2008 **Teaching Assistant**, BIOL 232 – Plant Biology, Kalamazoo College

INVITED WORKSHOPS

11/2019 **Software Carpentry** (R) – [The Nature Conservancy](#)

01/2019 **Software Carpentry** (R Reproducible Research) – [University of Connecticut](#)

05/2018 **Software Carpentry** (R, Git, & SQL Databases) – [University of Connecticut](#)

01/2017 **Software Carpentry** (R, Git, & Shell) – [University of Connecticut](#)

10/2016 **Software Carpentry** (Python, Git, & Shell) – [Harvard Medical School](#)

PUBLIC LESSON PLANS

2018 **Mickley, J.** Software Carpentry lesson plans for R, SQL, OpenRefine, and Git.
<https://mickley.github.io/SWC-Cheatsheets/>

2016 Wright, T. & N. Zimmerman (eds), [*et al.*, including **J. Mickley**]. Software Carpentry: R for Reproducible Scientific Analysis. Version 2016.06, June 2016.
 doi: [10.5281/zenodo.57520](https://doi.org/10.5281/zenodo.57520)

- 2016 Blischak, J., D. Chen, H. Dashnow, & D. Haine (eds), [et al., including **J. Mickley**]. Software Carpentry: Programming with R. Version 2016.06, June 2016.
doi: [10.5281/zenodo.57541](https://doi.org/10.5281/zenodo.57541)
- 2016 Cabunoc, A. & S. McKay (eds), [et al., including **J. Mickley**]. Software Carpentry: Using Databases and SQL. Version 2016.06, June 2016.
doi: [10.5281/zenodo.57551](https://doi.org/10.5281/zenodo.57551)

MENTORING

* 53 mentees: 31 women, 10 underrepresented minorities, 4 graduate students, and 1 veteran.
Full list of mentees at: <http://jamesmickley.com/curriculum-vitae/#mentoring>

Bagchi Lab (University of Connecticut):

2018 – present 30 undergraduates, including 18 women, 7 underrepresented minorities, and one veteran.

2018 – present 4 graduate students, including 2 women.

Schlichting Lab (University of Connecticut):

2010 – 2018 14 undergraduates, including 9 women.

Gurevitch Lab (Stonybrook University):

2009 – 2010 5 undergraduates, including 2 women, and 3 underrepresented minorities.

COMMUNITY OUTREACH & SERVICE

- 2019 **Bioblitz contributor**, National Biodiversity Championship. Top contributor.
- 2019 **Bioblitz contributor**, Great Walden Bioblitz & E. O. Wilson's 90th birthday party. Top contributor.
- 2018 **Forest Walk Leader**, Bolton Conservation Commission
- 2017 **Organizer & Contributor**, Greenwich Point Bioblitz. Led terrestrial plants walk.
- 2016 **Organizer & Contributor**, Connecticut State Bioblitz. Helped organize one of the largest Bioblitzes ever held, with over 180 scientists. This Bioblitz set the world record for species found in 24 hours with 2,769.
- 2016 **Bioblitz contributor**, Weir Farm National Historic Site. Top contributor.
- 2016 **Ask-a-Scientist Participant**, Ask-a-Scientist days at Windham High School.
- 2016 **Science Fair Judge**, Talcott Mountain Academy Middle School Science Fair.

- 2015 **Bioblitz contributor**, UConn Bioblitz. Trained undergraduates to identify plant species and was the top contributor of species and observations at one of the largest Bioblitzes in Connecticut.
- 2015, 2016 **Walk Leader**, Spring ephemeral plant walk, University of Connecticut.
- 2014 – present **iNaturalist curator**. I volunteer as a curator for iNaturalist.org, contributing thousands of plant observations and actively using my plant identification expertise to identify plant specimens logged by other members of the community. www.inaturalist.org/people/mickley

ACADEMIC & PROFESSIONAL SERVICES

- 2018 – present **Bargaining Committee Member**, GEU-UAW Postdocs Union, University of Connecticut.
- 2016 – 2017 **Recording Secretary**, New England Botanical Club. Sat on the NEBC executive council and wrote monthly meeting summaries published in the journal *Rhodora*.
- 2013 – 2015 **Union Organizing Committee Member**, GEU-UAW, University of Connecticut. Formed a graduate employee union at UConn, helped win a first contract, trained in and conducted community organizing, and supervised 12 departmental leaders during organizing efforts.
- 2010 – present **Committee Member**, Arboretum Committee, University of Connecticut.
- 2009 – 2010 **Field Trip Chair**, Long Island Botanical Society. Organized field trips for the membership.
- 2008 – 2010 **Committee Member**, Friends of the Ashley Schiff Park Preserve, Stony Brook University.
- 2005 – 2008 **Volunteer**, Cleanup and maintenance of the Lillian Anderson Arboretum, Kalamazoo College.
- 2004 – 2008 **Greenhouse Curator**, Department of Biology, Kalamazoo College.

PROGRAMMING EXPERIENCE

- 2014 – 2015 **Graduate Assistant**, University of Connecticut, Storrs, CT.
Collaborated on coding and designing a dynamic, database-driven website for the Department of Ecology and Evolutionary Biology at the University of Connecticut. Authored custom PHP display modules for Wordpress.
Supervisor: Dr. Paul Lewis

- 2012 – 2016 **Database & Website Developer**, University of Connecticut, Storrs, CT.
Created a database and website to display data from a large collaboration to study biodiversity and trait-environment evolution in South Africa.
Supervisor: Dr. Carl Schlichting
- 2010 – 2013 **Programming Consultant**, Applied Biomathematics, Setauket, NY.
Delivered an Excel add-on integrating mathematical uncertainty calculations into Excel for risk analysis. Coded in Visual Basic, Pascal, R, and C++, while collaborating via Subversion and Git. Conducted research on mathematical uncertainty and the importance and meaning of natural language expressions.
Supervisor: Dr. Scott Ferson
- 2007 – 2008 **Programmer**, Monell Chemical Senses Center, University of Pennsylvania, Philadelphia, PA.
Designed an interactive database application to provide a testing environment for human subjects involved in research on chemosensory stimuli.
Supervisors: Amy Gordon, & Dr. Johan Lundström

ADDITIONAL SKILLS

- **Programming Languages & Software:**
 - Highly experienced in Python, R, Unix, Visual Basic, Lua, PHP, MySQL, Javascript, HTML, and CSS.
 - Experience with C and C++, servers, Unix, and database design and management.
 - Experience in collaborative coding environments using Git and Subversion.
 - Experience with Arduino and ESP8266 microcontroller platforms and using associated environmental sensors in ecological research.
 - Proficient in Microsoft Office, imageJ, ArcGIS, BGBase, and Google Earth.
- **Photography:**
 - I have been a freelance photographer since 2000 and won several regional awards and honorable mentions in international contests. My specialty is photojournalism and nature, but I have worked with a variety of genres and media and have broad experience with technical photography and lighting.
 - Photography website: www.mickleyphotography.com.
 - Extensive experience with Photoshop, Lightroom, Illustrator, and other editors.

PROFESSIONAL SOCIETIES

- Society of Herbarium Curators
- Ecological Society of America
- New England Botanical Society
- Long Island Botanical Society

REFERENCES

1. **Robert Bagchi** - Postdoctoral Advisor
Assistant Professor - University of Connecticut
75 N. Eagleville Rd. Unit 3043
Storrs, CT, 06269-3043
(860) 486-6587
robert.bagchi@uconn.edu
2. **Carl D. Schlichting** - PhD Advisor
Professor - University of Connecticut
75 N. Eagleville Rd. Unit 3043
Storrs, CT, 06269-3043
(860) 486-4056
schlicht@uconn.edu
3. **Gregory Anderson** - PhD Committee Member
Professor Emeritus - University of Connecticut
75 N. Eagleville Rd. Unit 3043
Storrs, CT, 06269-3043
(860) 486-4555
gregory.anderson@uconn.edu