James G. Mickley Ph.D.

Curriculum Vitae

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

Office Phone: 1 (860) 486-4322
Cell: 1 (717) 278-9126
Website: JamesMickley.com
Email: james.mickley@uconn.edu

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 Advisor: Dr. E. Binney Girdler

2006 – 2007 **Curtin University**, Perth, Western Australia, Australia
Study Abroad through Kalamazoo's Study Abroad Program

PUBLICATIONS

In prep. **Mickley, J.,** T. Moore, A. DeRobertis, E. Mason, and R. Bagchi. DIY microcontrollers for measuring microenvironment: The new frontier of ecological sensors.

In prep. **Mickley, J.** and C. Schlichting. Assessing evidence for pollinator-mediated stabilizing selection on petal number.

In prep. **Mickley, J.** and C. Schlichting. Heritability of variation in petal number and correlated selection in *Phlox drummondii*.

2017 Rico-Guevara A., and **J. Mickley**. An inexpensive, versatile, and portable triggering system for scientific research: An example filming hummingbirds in the wild. *Ecology and Evolution* 7:4592-4598. doi: 10.1002/ece3.3040

2016 Wright T., and 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

2016 Blischak J., Chen D., Dashnow H., and D. Haine (eds), [*et al*, including **J. Mickley**]. Software Carpentry: Programming with R. Version 2016.06, June 2016. doi: 10.5281/zenodo.57541

2016 Cabunoc A., and S. McKay (eds), [*et al*, including **J. Mickley**]. Software Carpentry: Using Databases and SQL. Version 2016.06, June 2016. doi: 10.5281/zenodo.57551

2015 Ferson, S., J. O'Rawe, A. Antonenko, J. Siegrist, **J. Mickley**, C. C. Luhmann, K. Sentz, and A. M. Finkel. Natural language of uncertainty: numeric hedge words. *International Journal of Approximate Reasoning*. 57:19-39. doi: 10.1016/j.ijar.2014.11.003

2013 Lowry, E., E. J Rollinson, A. J. Laybourn, T. E. Scott, M. E. Aiello-Lammens, S. M. Gray, **J. Mickley**, and J. Gurevitch. Biological Invasions: A Field Synopsis, Systematic Review, and Database of the Literature. *Ecology and Evolution* 3(1):182-196. doi: 10.1002/ece3.431

2011 Ferson, S., **J. Mickley**, and W. McGill. Uncertainty Arithmetic on Excel Spreadsheets:
Add-In for Intervals, Probability Distributions, and Probability Boxes. *Vulnerability, Uncertainty, and Risk*. pp. 70-77. doi: 10.1061/41170(400)9

2008 **Mickley, J.** Tree density and fire scarring in Minnesota Oak Savanna: Implications for Restoration. Undergraduate Thesis. Kalamazoo College Biology Department. 46 pp. doi: 10920/24324

AWARDS, GRANTS, & FELLOWSHIPS

2015 **$2,000** **Doctoral Dissertation Fellowship**. The Graduate School, University of Connecticut, Storrs, CT. $2,000.

2015 **$600** **Departmental Service Award**. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT. Received for developing an online database and map of the campus arboretum.

2015 *Nominated*, **Departmental Excellence in Student Teaching Award**. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT.

2014 **$1,460** **Ronald Bamford Research Grant**, 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?*

2010 – 2013 **$30,500** **Outstanding Scholar Fellowship**, Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT. Three years.

2008 – 2010 **$4,000** **Presidential Fellowship**, Department of Ecology and Evolution, Stony Brook University, Stony Brook, NY. Two years.

2008 – 2010 **$20,000** **Graduate Council Fellowship**, The Graduate School, Stony Brook University, Stony Brook, NY. Two years.

2008 **$100** **Ronald O. Kapp Undergraduate Award** for 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

* denotes undergraduate co-authors

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.

6/2015 **Mickley J.**, M. Benedict*, G. Nuttall*, C. Hill*, D. Vine*, E. Mason*, & T. Jordan*. *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.*, G. Nuttall*, H. Holt*, & **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.*, K. Wojtas*, D. Atashsokhan*, **J. Mickley**, E. Lowry, & J. Gurevitch. Assessing the Invasive Threat of the Plant *Centaurea stoebe* in New York State. 2010 URECA, Stony Brook, NY.

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. 2008. Kalamazoo, MI.

RESEARCH EXPERIENCE

2010 – 2017 **Doctoral Thesis**, University of Connecticut, Storrs CT.
Performed research on natural variation in floral petal number in the Polemoniaceae, including greenhouse experiments to measure correlated selection on multiple floral traits, fieldwork in Texas and California to quantify patterns of variation between species and populations, compared field populations in a greenhouse common garden, and conducted pollinator visitation experiments.
Committee: Dr. Carl Schlichting, Dr. Gregory Anderson, Dr. Pamela Diggle, & Dr. Elizabeth Jockusch.

2010 – 2011 **Research Assistant**, University of Connecticut, Storrs, CT.
Contributed to digitizing the CONN herbarium, including databasing and geo-referencing specimens and connecting the CONN database to GBIF.
Supervisor: Dr. Robert Capers

2009 **Graduate Assistant**, Stony Brook University, Stony Brook, NY.
Designed and established field sites throughout New York to measure demographic parameters of the invasive plant *Centaurea stoebe*, and co-mentored undergraduate researchers recruited for the project.
Supervisor: Dr. Jessica Gurevitch

2008 **Site Botanist**, Cedar Creek Ecosystem Science Reserve (UMN), Bethel, MN.
Conducted and supervised experiments involving plant identification including measurements of percent cover, and identifying clipped biomass, trained four interns as botanists, taught plant species to University of Minnesota graduate students, visiting scientists, and other Cedar Creek interns, and assisted in experimental design and logistics.
Supervisors: Troy Mielke, Dr. Clarence Lehman, & Dr. David Tilman

2007 – 2008 **Senior Thesis**, Kalamazoo College, Kalamazoo, MI.
Tree density and fire scarring in Minnesota oak savanna: implications for restoration.
Supervisors: Dr. Clarence Lehman and Dr. Binney Girdler.

2007 **Intern**, Cedar Creek Ecosystem Science Reserve (UMN), Bethel, MN.
Appointed as a botanist and general intern at the research area, worked on percent cover and identified clipped biomass for numerous experiments, conducted tree surveys in oak savanna plots, assisted with modeling savanna tree populations in C.
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

2005 **Research Assistant**, Kalamazoo College, Kalamazoo, MI.
Conducted plant surveys and identified plants for a project on the allelopathic effects of *Centaurea maculosa* on invertebrate diversity.
Supervisor: Dr. Ann Fraser

2004 – 2008 **Research Assistant**, Kalamazoo College, Kalamazoo, MI.
Renovated and maintained the college greenhouse, conducted research on competition and plant neighborhoods in *Arabidopsis thaliana*, the relative importance of neutral and habitat factors in structuring Lake Michigan shoreline plant communities, the effects of spatial competition, herbivory, and dispersal on the population dynamics of the threatened dune thistle *Cirsium pitcheri*, plasticity in leaf stomatal density, the effects of urban sprawl on wetlands, and provided plant identification for numerous projects.
Supervisor: Dr. Binney Girdler

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 in workshops around the world.

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

2014 – 2015 **Lab Coordinator**, EEB 2244 – General Ecology, UConn.
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.

2011; '14; '17 **Teaching Assistant**, EEB 2244 – General Ecology, UConn.

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

October 2016 **Software Carpentry** (Python-based) – Harvard Medical School

January 2017 **Software Carpentry** (R-based) – University of Connecticut

UNDERGRADUATE MENTORING

* 18 total, including ten women

2016 – 2017 Amber DeRobertis, University of Connecticut

2015 – 2016 Miranda Squillace, University of Connecticut

2015 – 2016 Max Engel, University of Connecticut (B.A. 2015, CT Agricultural Experiment Station)

2015 Thomas Jordan, University of Connecticut (B.S. 2015)

2015 Jeffrey Hammond, University of Connecticut (B.S. 2015)

2014 – 2015	Connor Hill, University of Connecticut (B.S. 2016, NIH Postbaccalaureate Fellow)
2014 – 2015	Genevieve Nuttall, University of Connecticut (2015 UConn IDEA grant recipient, B.S./M.S. student in the Tingley Lab at UConn)
2014 – 2015	Matt Benedict, University of Connecticut
2014 – 2015	Darren Thorne, University of Connecticut (B.A. 2015)
2014 – 2015	Hillary Holt, University of Connecticut (B.S. 2015)
2014 – 2017	Emilia Mason, University of Connecticut
2014 – 2015	Jenny Yung, University of Connecticut
2011	Ellen Deering, University of Connecticut (B.S. 2013)
2010 – 2011	Lauren Abbott, University of Connecticut (B.S. 2013, Research Specialist at UConn)
2009 – 2010	Faria Hasan, Stony Brook University (B.S. 2012)
2009 – 2010	Konrad Wojtas, Stony Brook University (B.S. 2012)
2009 – 2010	Daniel Atashsokhan, Stony Brook University (B.S. 2010)
2009 – 2010	Sun Man Ceng, Stony Brook University (B.S. 2011)

COMMUNITY OUTREACH & SERVICE

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

2016 – 2017 **Recording Secretary**, New England Botanical Club. Sat on the NEBC executive council and wrote summaries of each monthly meeting that were 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, and supervised 12 departmental leaders during organizing efforts.

2010 – present **Committee Member**, Arboretum Committee, University of Connecticut.

2009 to 2010 **Field Trip Chair**, Long Island Botanical Society. Organized field trips for the membership.

2008 to 2010 **Committee Member**, Friends of the Ashley Schiff Park Preserve, Stony Brook University.

2005 to 2008 **Volunteer**, Cleanup and maintenance of the Lillian Anderson Arboretum, Kalamazoo College.

2004 to 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 website for the Department of Ecology and Evolutionary Biology at the University of Connecticut.
Supervisor: Dr. Paul Lewis

2012 – 2016 **Database & Website Developer**, University of Connecticut, Storrs, CT.
Created a database and interactive website to display data from a large collaborative effort to study biodiversity in South Africa.
Supervisor: Dr. Carl Schlichting

2010 – 2013 **Programming Consultant**, Applied Biomathematics, Setauket, NY.
Built an add-on platform for Excel to allow for work with mathematical uncertainty calculus and risk analysis. Conducted research on mathematical uncertainty and the importance and meaning of natural language expressions of uncertainty.
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 proficient in Python, R, Unix, Visual Basic, Lua, PHP, MySQL, Javascript, HTML, and CSS.
  - Experience with C and C++.
  - Experience in collaborative coding environments using Git and Subversion.
  - Experience with Arduino and ESP8266/NodeMCU microprocessor platforms and using associated environmental sensors in ecological research.
  - Proficient in Microsoft Office, imageJ, Diva GIS, and Google Earth.
- **Languages**:
  - German
  - Latin
- **Photography**:
  - I have been an amateur and professional 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.
  - Photography website: www.mickleyphotography.com.
  - Extensive experience with Photoshop, Lightroom, Illustrator, and other image editors.

PROFESSIONAL SOCIETIES

- Botany Society of America
- Society for the Study of Evolution
- American Society of Naturalists
- New England Botanical Society
- Long Island Botanical Society