

JANNICE FRIEDMAN

Syracuse University Department of Biology
107 College Place Syracuse, NY 13244
315.443.1564 phone
315.443.2012 fax
friedman@syr.edu

ACADEMIC POSITIONS

Assistant Professor, Department of Biology, Syracuse University. 2012 – present

Post-Doctoral Fellow with J.H. Willis, Duke University. 2009-2011

Funded by Natural Sciences and Engineering Research Council of Canada – PDF Fellowship

EDUCATION

Ph.D., Ecology & Evolutionary Biology, 2009. University of Toronto (Advisor: S.C.H. Barrett)

M.Sc., Ecology, 2003. University of Calgary (Advisor: L.D. Harder)

Honor's B.Sc., Evolution, 2000. University of Toronto.

SCHOLARSHIPS, GRANTS AND AWARDS

Grants

NSF DEB Award 1546106: Mechanisms of sexual selection in plants with different reproductive strategies. PI: J. Friedman. 2016-2018. (\$149,905)

NSF DEB Award 1354259: Understanding the evolutionary transition between annual and perennial life history strategies. PI: J. Friedman. 2014-2017. (\$475,900)

Canadian Society for Ecology and Evolution Student Grant, 2009 (\$500)

Alberta Challenge Grants in Biodiversity, 2002-2003 (\$10,000)

Research Services Travel Grant, 2003 (\$1000)

Fellowships and Scholarships

Post-doctoral Fellowship, Natural Sciences and Engineering Research Council of Canada, 2009-2011 (\$80000)

Frederick P. Ide Graduate Award, 2008 (\$2200)

Ontario Graduate Scholarships in Science and Technology, 2006-2008 (\$30000)

Canadian Graduate Scholar, Natural Sciences and Engineering Research Council of Canada, 2004-2006 (\$70000)

Valerie Anderson Graduate Fellowship, 2005 (\$1992)

Mary H. Beatty Award, 2004 (\$5000)

University of Toronto Fellowship, 2004 (\$2500)

Post-Graduate Scholarship A, Natural Sciences and Engineering Research Council of Canada, 2000-2002 (\$34500)
iCORE (Informatics Circle of Research Excellence) Fellowship, 2000-2002 (\$24000)
Province of Alberta Graduate Scholarship, 2002-2003 (\$6200)
Alberta Heritage Master's Scholarship, 2002 (\$2000)
Graduate Studies Tuition Bursary, 2000 (\$3000)
Biological Science's Scholarship, 2000 (\$1500)
Dr. James A. and Connie P. Dickson Scholarship, 1999-2000 (\$500)
University College Special In-Course Scholarship, 1998-1999 (\$250)
F.C.A. Jeanneret University College Alumni Scholarship, 1996-1997 (\$2400)
Ontario Secondary School Teacher's Federation Bursary, 1996-1997 (\$1000)
Miller Thomson Foundation Scholarship, 1996-1997 (\$1000)
University of Toronto Scholar, 1996-1997 (\$3000)

Awards and Honors

Governor General's Academic Gold Medal of Canada for top PhD, 2010
Nominated as University of Toronto's candidate for NSERC Doctoral Prize, 2009
Annals of Botany Prize – best Graduate Student Talk at the Canadian Society for Ecology and Evolution Meetings, 2007
D. L. Bailey Award – best Ph.D. proposal in Botany, 2006
Best Student Presentation, Botany Graduate Seminar Series, 2005

ARTICLES PUBLISHED IN REFEREED JOURNALS

- Preston, J. C., M. McKeown, M. den Bakker, and **J. Friedman**. 2016. Comparative transcriptomics indicates a role for *Short Vegetative Phase (SVP)* genes in *Mimulus guttatus* vernalization responses. Accepted at G3: Genes, Genomes, Genetics.
- Twyford A.D. and **J. Friedman**. 2015. Adaptive divergence in the monkey flower *Mimulus guttatus* is maintained by a chromosomal inversion. *Evolution*. 69: 1476-1486.
- Twyford A.D., M.A. Streisfeld, D.B. Lowry and **J. Friedman**. 2015. Genomic studies on the nature of species: adaptation and speciation in *Mimulus*. *Molecular Ecology*. 24: 2601-2609.
- Friedman J.** and M.J. Rubin. 2015. All in good time: understanding annual and perennial strategies in plants. *American Journal of Botany*. 102: 497-499.
- Friedman, J.**, A.D. Twyford, J.H. Willis, and B.K. Blackman. 2015. The extent and genetic basis of phenotypic divergence in life history traits in *Mimulus guttatus*. *Molecular Ecology*. 24: 111-122.

- Friedman, J.** 2014. Genetic determinants and epistasis for life history trait differences in *Mimulus guttatus*. *Journal of Heredity*. 105:816-827
- Yan, J., M.D. Bradley, **J. Friedman** and R.D. Welch. 2014. Phenotypic profiling of ABC transporter coding genes in *Myxococcus xanthus*. *Frontiers in Microbiology* 5: 352.
- Friedman, J.** and J.H. Willis. 2013. Major QTLs for critical photoperiod and vernalization underlie extensive variation in flowering in the *Mimulus guttatus* species complex. *New Phytologist* 199: 571-583.
- Friedman J.** 2011. Gone with the wind: understanding evolutionary transitions between wind and animal pollination in the angiosperms. *New Phytologist* 191: 911-913
- Friedman J.** and S.C.H. Barrett. 2011. Genetic and environmental control of temporal and size-dependent sex allocation in a wind-pollinated plant. *Evolution* 65: 2061–2074
- Friedman J.** and S.C.H. Barrett. 2011. The evolution of ovule number and flower size in wind-pollinated plants. *American Naturalist* 177: 246-257
- Friedman J.** and S.C.H. Barrett. 2009. Wind of change: new insights on the ecology and evolution of pollination and mating in wind-pollinated plants. *Annals of Botany* 103:1515-1527
- Friedman J.** and S.C.H. Barrett. 2009. The consequences of monoecy and protogyny for mating in wind-pollinated *Carex*. *New Phytologist* 181: 489-497
- Stehlik I., **J. Friedman** and S.C.H. Barrett. 2008. Environmental influence on primary sex ratio in a dioecious plant. *Proceedings of the National Academy of Science* 105: 10852-10857
- Friedman J.** and S.C.H. Barrett. 2008. High outcrossing in the annual colonizing species *Ambrosia artemisiifolia*. *Annals of Botany* 101: 1303-1309
- Friedman J.** and S.C.H. Barrett. 2008. A phylogenetic analysis of the evolution of wind pollination in the angiosperms. *International Journal of Plant Sciences* 169: 49-58
- Friedman J.** and L.D. Harder. 2005. Functional associations of floret and inflorescence traits among grass species. *American Journal of Botany* 92: 1862-1870
- Friedman J.** and L.D. Harder. 2004. Inflorescence architecture and wind pollination in six grass species. *Functional Ecology* 18: 851-860
- Dorken, M.E., **J. Friedman** and S.C.H. Barrett. 2002. The evolution and maintenance of monoecy and dioecy in *Sagittaria latifolia* (Alismataceae). *Evolution* 56: 31-41

INVITED TALKS

American Genetics Association Symposium: Genetics of Local Adaptation. Asilomar July 2016.
British Columbia Nature Annual General Meeting. Comox, BC. May 2016.
Harvard University. Arnold Arboretum. February 2015.
Binghamton University. Department of Biology. November 2014.
Novel Traits and Rapid Evolution Conference, Cornell University. May 2013.
Cornell University. Department of Plant Biology. March 2013.
University of Southern Mississippi. Department of Biology. February 2013.
University of Vermont, Department of Plant Biology. November 2012.
Syracuse University, Department of Biology. January 2011.
Duke University, Department of Biology. April 2010.
North Carolina State University, Department of Plant Sciences. November 2009.
University of Toronto, Department of Ecology and Evolutionary Biology. May 2009.

PRESENTED PAPERS

Rubin, M. J. and **J. Friedman**. The role of cold cues on life history transitions in the *Mimulus guttatus* species complex. Plant Biology Conference, MN. July 2015.

J. Friedman, and J. Preston. Understanding the evolution and genetic basis of variation in vernalization in *Mimulus guttatus*. Society for the Study of Evolution Annual Meeting. Raleigh, NC. June, 2014.

A. Twyford, and **J. Friedman**. Life-history evolution and the role of a chromosomal inversion for ecotype divergence in *Mimulus guttatus*. Society for the Study of Evolution Annual Meeting. Raleigh, NC. June, 2014.

J. Friedman, A. Twyford, J.H. Willis, B.K. Blackman. Phenotypic and genetic trade-offs between flowering and vegetative growth in *Mimulus guttatus*. Society for the Study of Evolution Annual Meeting. Snow Bird, Utah. June, 2013.

J. Friedman and J.H. Willis. Evolutionary genomics of life history strategies in *Mimulus guttatus*. Joint Congress on Evolutionary Biology. Ottawa, Canada. June, 2012.

J. Friedman and J.H. Willis. Ecological genomics of complex traits in life history transitions in *Mimulus guttatus*. Duke University. October 2011.

J. Friedman and J.H. Willis. Local adaptation and evolution of life-history changes in *Mimulus guttatus*. Society for the Study of Evolution Annual Meeting. Portland, Oregon. June, 2010.

J. Friedman and S.C.H. Barrett. Genetic and environmental control of sex allocation and dichogamy in ragweed. Canadian Society for Ecology and Evolution Annual Meeting. Halifax, Nova Scotia. May, 2009.

- J. Friedman.** The evolution and ecology of wind pollination. Ecology and Evolution Department, University of Toronto. May, 2009.
- Barrett, S.C.H., I. Stehlik and **J. Friedman.** Sex ratio variation in dioecious plant populations. Frontiers of Sexual Plant Reproduction III. Tucson, Arizona. October, 2008.
- Barrett, S.C.H., I. Stehlik and **J. Friedman.** Environmental influence on primary sex ratio in a dioecious plant. Analogies in the Evolution of Gender Expression and Sexual Strategies in Animals and Plants. Neuhausen/Fildern, Germany. September, 2008.
- S.C.H. Barrett and **J. Friedman.** Ecology and evolution of wind pollination. The Ecology and Evolution of Plant-Pollinator Interactions Conference. Milwaukee, Wisconsin USA. August, 2008.
- J. Friedman** and S.C.H. Barrett. A phylogenetic analysis of the evolution of wind pollination in the angiosperms. Canadian Society for Ecology and Evolution Annual Meeting. Toronto, Ontario. May, 2007.
- J. Friedman** and S.C.H. Barrett. The consequences of monoecy for pollination and mating in wind-pollinated *Carex* (Cyperaceae). Society for the Study of Evolution Annual Meeting. Stony Brook, New York. June, 2006.
- J. Friedman.** The evolution and ecology of wind pollination. PhD Proposal Seminar. Department of Botany, University of Toronto. January, 2006.
- J. Friedman** and S.C.H. Barrett. Is wind pollination an inefficient process? Ontario Ecology and Ethology Colloquium. Ottawa, Ontario. May, 2005.
- J. Friedman.** On the ecology and evolution of wind pollination. Botany Graduate Students Seminar Series. Toronto, Ontario. April, 2005.
- J. Friedman.** Inflorescence architecture in grasses and the consequences for pollination. Ontario Ecology and Evolution Colloquium. Toronto, Ontario. May, 2004.
- J. Friedman** and L.D. Harder. Wind pollination in grasses: the role of inflorescence architecture. Society for the Study of Evolution Annual Meeting. Chico, California. June, 2003.
- J. Friedman.** Wind pollination in grasses (Poaceae): Are they simply blowin' in the wind? Prairie Universities Biological Symposium. Calgary, Alberta. February, 2002.
- J. Friedman.** The evolution and maintenance of monoecy and dioecy in a plant species. Ecology Graduate Seminar Series. Calgary, Alberta. November 2000.

EMPLOYMENT AND TEACHING

Ecology and Evolution. Syracuse U. 2015. Undergraduate.
Evolutionary Genetics. Syracuse U. 2015-16. Advanced undergraduate/graduate.
Biological Literature. Syracuse U. 2015. Graduate.
Evolutionary Mechanisms. Syracuse U. 2014. Advanced undergraduate/graduate.
Sexual Selection and Mating Strategies. Syracuse U. 2014. Advanced undergraduate/graduate.
Comparing Sperm and Pollen Evolution. Syracuse U. 2014. Graduate.
Evolutionary Mechanisms. Syracuse U. 2013. Advanced undergraduate/graduate.
Evolutionary Genetics of Complex Traits, Syracuse U. 2013. Advanced undergraduate/graduate.
Environmental Biology, U. of Toronto. 2008. Redesign field and laboratory manual.
Environmental Biology, U. of Toronto, 2004-2008. Teaching assistant requiring leading field trips, laboratory experiments and marking.
Field Botany, U. of Toronto, 2007. Teaching assistant for field course involving plant identification, vegetation analysis and independent projects.
Organisms in their Environment, U. of Toronto, 2004-2006. Teaching assistant requiring tutorials, preparation and marking.
Invited Lecture, Experimental Ecology in S. Ontario, 2005, 2006, 2007, 2008. Field course guest lecture on the ecology and evolution of wind pollination. University of Toronto
Invited Lecture, Graduate Course in Quantitative Ecology, 2001. Size structured dynamics of pollen. University of Calgary.
Evolutionary Biology, U. of Calgary, 2003. Part time teaching assistant requiring tutorials, preparation and marking.
General Biology, U. of Calgary, 2000-2001. Part time teaching assistant, requiring lab preparation, instruction and marking. University of Calgary.
Research Assistant (Dr S.C.H. Barrett), University of Toronto, 2000.
Field Research Assistant (Dr K.J. Esler), University of Stellenbosch, South Africa, 1999.
Research Assistant (Dr S.M. Smith), University of Toronto, 1998-1999.
Research Assistant (Dr R.I.C. Hansell) University of Toronto. 1997-1998.

ADVISING AND GRADUATE COMMITTEES

Post-doctoral advisees

2014- Matthew Rubin
2012-2014 Alexander Twyford

Graduate students

2015- Reno Eckebrecht
2015 Christina Giovinazzo (rotation student)
2014- Kelly Schmid

Graduate committees

2015- Kelsey Martinez (PhD committee)
2015- Shengpei Wang (PhD committee)
2015- Kristin Haynes (PhD committee – SUNY ESF)
2015- Elizabeth Droge-Young (PhD committee)

2015 Irmak Erdem (PhD candidacy examination committee)
2015 Elise Hinman (PhD candidacy examination committee)
2015- Emma Whittington (PhD committee)
2014- Leanna Matthews (PhD committee)
2014- Haley Plasman (MSc committee)
2012- Brian Gress (PhD committee)
2014 Andrew Siefert (PhD examination committee)
2013-2015 Jessica McCordick (MSc committee)

Undergraduate researchers

2015- Lynjen Lu
2015- Genevieve Pilch
2014- Nick Conchieri
2014- Anna Bjarvin
2014-2015 Jeff Darkwa
2014 Shahin Bazeli
2013-2015 Marcus Rivera
2013-2014 Katie Hart
2013-2014 Aaron Caola
2012-2013 Adam Isbiroglu

PROFESSIONAL AFFILIATIONS AND SERVICE

Committees and Service Positions

Chairs Advisory Committee, Department of Biology, Syracuse University, 2014-
Departmental Vision and Long-Term Planning Committee, Department of Biology, Syracuse
University, 2014-
Greenhouse Committee, Department of Biology, Syracuse University, 2014-
Undergraduate Curriculum Committee, Department of Biology, Syracuse University. 2013-2014
Curriculum Review and Renewal Committee, Faculty of Arts and Science – Graduate student
representative, 2006-2007
Ombudsperson, Ecology and Evolution Graduate Students Association, 2006-2007
Botany Department Seminar Committee – Graduate student representative, 2005-2006
Ombudsperson, Botany Graduate Students Association, 2005-2006
President, Botany Graduate Students Association, 2004-2005
Functional Plant Ecology Assistant Professor – search committee, Graduate student
representative, 2004-2005
Faculty of Science Women’s Network, 2002-2003
Biological Sciences Representative, Graduate Students Association, U. of Calgary, 2001-2002
Ecology Assistant Professor, U. of Calgary graduate students’ hiring committee, 2003
Population Ecology Assistant Professor, U. of Calgary graduate students’ hiring committee, 2002

Associate Editor

American Journal of Botany

External Reviewer

Journals: American Journal of Botany, American Naturalist, Australian Journal of Botany, Axios Review, Botany, Central European Journal of Biology, Ecology, Evolution, Functional Ecology, Genetics, International Journal of Plant Sciences, Journal of Ecology, Journal of Theoretical Biology, Molecular Ecology, Molecular Phylogenetics and Evolution, New Phytologist, Oecologia, Plant Biology, Plant Species Biology, PLoS Genetics, Sexual Plant Reproduction.

Grants: NSF GRFP Panel 2014

(*ad-hoc* reviewer): National Science Foundation Dimensions of Biodiversity Program, Molecular and Cell Biology Program, Plant Genome Research Program, Research Initiation Award Program; Swiss National Science Foundation; M.J. Murdock Charitable Trust; Graduate Women in Science Fellowship.

Society Membership

American Society of Naturalists, Society for the Study of Evolution, Botanical Society of America