
MICHIGAN TECHNOLOGICAL UNIVERSITY
DEPARTMENT OF BIOLOGICAL SCIENCES
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EDUCATION

Ph.D., Center for Ecology and Evolutionary Biology, University of Oregon, 2007
Major: Ecology and Evolutionary Biology of Plants

M.S., Population Biology, University of California at Davis, 2001

B.S., University of Wisconsin at Madison, Graduation with Distinction, 1996
Majors: Biological Conservation and Psychology
Minor: Environmental Studies

PROFESSIONAL POSITIONS

Assistant Professor, Michigan Technological University– Biological Sciences (January 2012-Present)

Research Associate, North Carolina State University (2009-2011)

Postdoctoral Fellow, Northern Arizona University (2007-2009)

Teaching Assistant, University of Oregon

Teaching Assistant, University of California, Davis

PUBLICATIONS

8. Bangert, R., Ferrier, S. M., Evans, L., Kennedy, K., Grady, K. C., Hersch-Green, E. I., Allan, G. J., and T. G. Whitham. In Press. The proportion of three foundation plant species and their genotypes influence an arthropod community: restoration implications for the endangered southwestern willow flycatcher. **Restoration Ecology**.
7. Hersch-Green, E. I., H. Myburg, and M. T. Johnson. 2012. Adaptive molecular evolution of a defence gene in sexual but not functionally asexual evening primroses. **Journal of Evolutionary Biology** 25: 1576-1586.
6. S.M. Ferrier, R.K. Bangert, E. I. Hersch-Green, J. K. Bailey, T.G. Whitham, and G.J. Allan. 2012. Unique arthropod communities on different host-plant genotypes results in greater arthropod diversity. **Arthropod Plant Interactions** 6: 187-195

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5. Hersch-Green, E. I, N. Turley, and M. T. J. Johnson. 2011. Community genetics: what have we accomplished and where should we be headed? **Phil. Trans. R. Soc. B.** 366: 1453-1460.
 4. Hersch-Green, E.I., and R.C. Cronn. 2009. Tangled trios, or something entirely different? Characterizing a hybrid zone in *Castilleja* (Orobanchaceae). **American Journal of Botany** 96(8): 1519-1531.
 3. Hersch, E.I, and B. A. Roy. 2007. Context-dependant pollinator behavior: an explanation for patterns of hybridization among three species of Indian paintbrush. **Evolution** 61(1): 111-124. Cover Photo.
 2. Hersch, E.I. 2006. Foliar damage to parental plants interacts to influence mating success of *Ipomoea purpurea*. **Ecology** 87(8): 2026-2036.
 1. Hersch, E.I., and P.C. Phillips. 2004. Power and potential bias in field studies of natural selection. **Evolution** 58(3): 479-485.

MANUSCRIPTS IN PROGRESS

- Hersch-Green, E.I, , G.J. Allan, and T.G. Whitham. Admixture in a cottonwood hybrid zone between *Populus angustifolia* and *P. deltoides* (Salicaceae): Evolutionary and ecological implications. *In Review.*
- Hersch-Green, E.I. Polyploidy in Indian Paintbrush (*Castilleja*) species shapes but does not prevent gene flow across species boundaries. *In Review.*
- Hersch-Green, E. I and B. A. Roy. Yearly fluctuations in the patterns of damage by natural enemies: consequences for genetically divergent Indian paintbrush taxa. *Plan to resubmit.*
- Hersch-Green, E. I., H. Myburg, and M. T. Johnson. Adaptive constraints on molecular evolution of genes involved in the biosynthetic flavanoid pathway of sexual and asexual evening primrose species.
- S.M. Ferrier, R. K. Bangert, E.I. Hersch-Green, A. R. Gitlin, L. E. Hagenauer, K. J. Kennedy, G.J. Allan, and T.G. Whitham. Home-site advantage hypothesis revisited: Riparian restoration survivorship is driven by source population climatic variation.
- Busby, P., S. Ferrier, E. Hersch-Green, M. Zingraff, T. Whitham, and G. Newcombe. Host genetic differentiation determines spatial variation in pathogen local adaptation in *Populus*.

AWARDS, GRANTS, AND HONORS

2012	Ecosystem Science Center award for the International Exchange Initiative at Michigan Technological University, \$4500 + \$1000
2006-2007	NIH Genetic Training Grant Fellow, Univ. of Oregon, \$32,000 + tuition.
2006	ESA Student Travel Award, \$600
2005-2006	IGERT Research Training Grant Fellow, Univ. of Oregon, \$30,000 + tuition.
2004	NSF Dissertation Improvement Grant, \$13,800
2003-2004	IGERT Research Training Grant Fellow, Univ. of Oregon, \$30,000 + tuition.
2002	University of Oregon, Biology Travel Award, \$1000
2001	NSF Pre-doctoral Fellowship Award, 3-year award, including \$89,000 + tuition.
2000	NSF Pre-doctoral Fellowship Award, Honorable Mention, 2000.
1999-2001	Univ. of California, Davis, Block Grant, 4 semesters of \$17,000 + tuition.
2000-2001	Univ. of California, Davis, Center for Population Biology Research Grant, \$1000.
2000	Univ. of California, Bodega Bay Marine Laboratory, Research Grant, \$750.

TEACHING EXPERIENCE

2012	<i>Plant-Insect Interactions</i> , Michigan Technological University.
2011	Guest lecturer for <i>Evolution</i> , Michigan Technological University.
2011	Guest lecturer for <i>Evolution</i> , Rhodes College.
2011	Guest lecturer for <i>Evolution</i> , North Carolina State University.
2010-2011	NSF Research Experiences for Undergraduates (REU) advisor
2009-2010	Teaching Certificate, Northern Carolina State University.
2008-2010	Undergraduate IGERT Research Project Co-Advisor, Northern Arizona University for Elisa Olson.
2006	NSF Research Experiences for Undergraduates (REU) advisor at the Rocky Mountain Biological Laboratory, Colorado.
2002-2006	Research Mentor at the Rocky Mountain Biological Laboratory, Colorado.
2002-2003	Undergraduate Honors College Thesis Co-Advisor, University of Oregon, for Claire Mecredy's research entitled "Costs and benefits of support for the common morning glory vine"
2006	Teaching Assistant for <i>Pollination Biology</i> , University of Oregon. I gave a series of guest lectures on pollination biology, co-planned lessons, reading material, and administered grades and helped students with class material.
2005	Research advisor for an undergraduate student from The Evergreen State College.
2003	Teaching Assistant for <i>Ecology for non-majors</i> , University of Oregon. • I taught discussion sections to help students with lecture material, designed projects, quizzes, exams and administered grades.
2003	Guest lecturer for <i>Pollination Biology</i> (6 times), University of Oregon.
2003	Guest lecturer for <i>Biodiversity</i> (3 times), University of Oregon.
2001	Guest lecturer for <i>Plant Ecology</i> (2 times), University of Oregon.
2001	Guest lecturer for <i>Evolution of Infectious Diseases</i> , University of Oregon.
Winter 2000	Teaching Assistant for <i>Zoology laboratory</i> , University of California, Davis. • I taught laboratory sections, administered quizzes, exams and grades.
Fall 2000	Teaching Assistant for <i>Zoology laboratory</i> , University of California, Davis. . • I taught laboratory sections, administered quizzes, exams and grades.
2001-present	Direct supervision of over twenty undergraduate researchers.

PRESENTED PAPERS

- Hersch-Green, E.I.**, H. Myburg, and M.T.J. Johnson. Sexual reproduction, position in a network, and molecular evolution of flavonoid genes. Society for the Study of Evolution, Ottawa, Canada. June 2012.
- Hersch-Green, E.I.**, H. Myburg, and M.T.J. Johnson. The consequences of losing sex for the molecular evolution of plant defenses against natural enemies. Society for the Study of Evolution, Portland, OR. June 2010.
- Hersch-Green, E.**, T. Whitham and G. Allan. Different community consequences in different *Populus* hybrid zones? Cottonwood Symposium. Flagstaff, AZ. February 2010.
- Johnson, M., S. Smith, R. FitzJohn, **E. Hersch-Green**, H. Myburg, S. Otto, and M. Rausher. The effects of plant sex on the evolution of plant defenses and diversification. Gordon Research Conference on Plant Herbivore Interactions, Galveston, TX. January 2010.
- Ferrier, S., R. Bangert, **E. Hersch-Green**, K. Grady, P. Busby, A. Gitlin, K. Kennedy, L. Hagenauer, G. Allan, and T. Whitham. Restoration at Palo Verde Ecological Reserve, Blythe, CA. Colorado River Riparian and Terrestrial Research Bureau of Reclamation Meeting. Laughlin, NV. January 2010.
- Hersch-Green, E.**, T. Whitham and G. Allan. Using microsatellites to infer genetic structure in a *Populus* hybrid zone. Cottonwood Symposium. Flagstaff, AZ. March 2008.
- Hersch-Green, E.**, T. Whitham and G. Allan. A hidden geographic mosaic: Cottonwoods, aphids and endosymbionts. Cottonwood Symposium. Flagstaff, AZ. March 2008.
- Hersch, E.I.** Patterns of parasite attack in 3 species of Indian paintbrushes (*Castilleja*) and their hybrids. Ecological Society of America, Memphis, TN. 2006.
- Hersch, E.I.** Context-dependant pollination could influence interspecific hybridization among 3 species of Indian paintbrushes in the Rocky Mountain region, USA. Society for the Study of Evolution, Ft. Collins, CO. 2004.
- Hersch, E.I.** and P.C. Phillips. The power (or lack thereof) of regression approaches to detecting selection in natural populations. Society for the Study of Evolution, Champaign/Urbana, IN. 2002.

INVITED SEMINARS AND PRESENTATIONS

- 2012 Michigan Technological University, Department of Biological Sciences, Houghton, MI.
- 2011 Michigan Technological University, Department of Biological Sciences, Houghton, MI.
- 2011 Rhodes College, Department of Biology, Memphis, TN.
- 2009 North Carolina State University, Department of Plant Biology, Raleigh, NC.
- 2008 Northern Arizona University, Department of Biological Sciences, Flagstaff, AZ
- 2007 York University, Toronto CAN
Northern Arizona University, Flagstaff, AZ.
University of Virginia, Charlottesville, VA.
- 2005 University of Guelph, CAN
- 2004 University of Colorado, Boulder CO.
- 2004 Harvard University, Cambridge, MA.
- 2003 IGERT symposium, Eugene, OR.
- 2002 University of Indiana, Bloomington, IN.

SOCIETY MEMBERSHIP

Botanical Society of America
Ecological Society of America
Society for the Study of Evolution
Golden Key National Honors Society
Phi Beta Kappa National Honors Society
Phi Kappa Phi National Honors Society

SERVICE

Over the past five years I have reviewed ca. 5-10 papers/grants per year including from:
NSF, Sigma Delta Epsilon/Graduate Women in Science Fellowships, *American Journal of Botany*, *Ecology*, *Ecological Entomology*, *Evolutionary Ecology*, *Functional Ecology*, *Journal of Evolutionary Biology*, *Journal of Ecology*, *New Phytologist*, *Oecologia*, *Oikos*
Co-organizer of the 2008 Cottonwood Symposium, Flagstaff, AZ.

ADDITIONAL RESEARCH EXPERIENCE (PRIOR TO GRADUATE SCHOOL)

Researched spatial and temporal changes in Southwestern desert vegetation, Sevilleta LTER, NM.
Researched the effects of elk trampling on vegetation and soil dynamics in Bandelier National Monument, NM.
Plant migratory bird studies (mist netting, acoustic identification, bird tagging and identification, nest monitoring) in GA.
Soil nutrient and plant defense chemistry analyses
Researched the effects of phosphorous inputs on aquatic plants and phytoplankton/diatoms in the Everglades, FL.
Researched the effects of an endophyte on swansonine production in locoweed to determine its toxicity for cattle, and examined chile plants from different geographical regions to identify specific ecotypes.
Herbarium development, Fakahatchee Strand Preserve State Park, FL.