

Krissa A. Skogen

Chicago Botanic Garden 1000 Lake Cook Road Glencoe, IL 60022
847-835-6919 kskogen@chicagobotanic.org
<http://faculty.wcas.northwestern.edu/skogen/index.html>

Education

- Ph.D. Ecology and Evolutionary Biology. University of Connecticut. Storrs, Connecticut. 2008 “Declining *Desmodium cuspidatum* (Muhl.ex Willd.) DC. Ex Loudon, Multiple approaches to a unique conservation problem” K. Holsinger (major advisor)
- B.A. Biology. 2000. Gustavus Adolphus College. St. Peter, Minnesota

Professional Appointments

- Conservation Scientist Chicago Botanic Garden. May 2008 – Present
Manager, Conservation & Land Management Internship Program. Chicago Botanic Garden.
May 2008 – Present
Adjunct Assistant Professor, Plant Science and Conservation, Northwestern University, Evanston, IL
September 2008 - Present

Publications (* = student authors)

- Ksiazek*, K., J. Fant and K. Skogen. 2012. An assessment of pollen limitation on Chicago green roofs. *Landscape and Urban Planning*. 107(4):401-408.
- Skogen, K., E. Hilpman*, S. Todd*, and J. Fant. 2012. Microsatellite primers in *Oenothera baringtonii* (Onagraceae), and annual endemic to the shortgrass prairie of Colorado. *American Journal of Botany Primer Notes and Protocols in the Plant Sciences*. 99(8):e313-6.
- Skogen, K., K. H. Holsinger, and Z. G. Cardon. 2011. Nitrogen deposition and the decline of a regionally threatened legume, *Desmodium cuspidatum*. *Oecologia*. 165(1):261-269.
- Skogen, K., L. Senack*, and K. Holsinger. 2010. Dormancy, small seed size and low germination rates contribute to low recruitment in *Desmodium cuspidatum* (Fabaceae). *Journal of the Torrey Botanical Society*. 137(4):355-365.
- Tienes, M., K. Skogen, P. Vitt and K. Havens. 2010. Optimal monitoring of rare plant populations - Report for the USDA Forest Service.
- Johnson-Groh, C., C. Riedel, L. Schoessler and K. Skogen. 2002. Belowground distribution and abundance of *Botrychium* gametophytes and juvenile sporophytes. *American Fern Journal* 92(2):80-92.

Funding & Awards

- National Science Foundation MRI: Acquisition of a Seed X-ray Machine at Chicago Botanic Garden. Co-PIs: K. Havens, P. Vitt, S. Wagenius, J. Fant. 2011. \$136,597.
- National Science Foundation MRI: Acquisition of Conservation Geographic Information Systems (GIS) Instrumentation. Co-PIs: P. Vitt, K. Havens, D. Larkin, J. Fant. 2009. \$305,389.
- National Fish and Wildlife Foundation, Native Plant Conservation Initiative. Co-PIs: J. Fant, D. Larkin, E. Yates. 2009. \$40,000.
- The Provost's Commission on the Status of Women & The Women's Center. Outstanding Academic Achievement Award. 2008.
- Colorado Native Plant Society, Steinkamp Research Grant. 2008. \$800.
- Environmental Leadership Program New England Regional Network, Senior Fellow. 2007.
- Environmental Protection Agency, Science to Achieve Results Graduate Fellowship. 2006. \$110,000.
- National Science Foundation, Doctoral Dissertation Improvement Grant. 2006. \$11,990.
- Robert and Patricia Switzer Foundation, Alternate Fellow. 2006.
- Torrey Botanical Society, Research Fellowship. 2005. \$2500.
- Botanical Society of America, Karling Graduate Student Research Award. 2004. \$500.
- New England Botanical Club, Graduate Research Grant. 2004. \$1055.

University of Connecticut, Storrs, CT

Ronald Bamford Endowment, Graduate Research Grant. 2003 – 2007. \$5000.

Center for Conservation and Biodiversity, Research Grant . 2004 & 2005. \$1500.

Outstanding Teaching Assistant Award, Nomination. 2004.

Summer Institute in Statistical Genetics, North Carolina State University, NC. Scholarship. 2003. \$1000.

National Science Foundation & New England Wildflower Society. Conservation Biology Fellow. 2003. \$4000.

Gustavus Adolphus College, Biology Dept. Special Recognition Award. 2000.

Sigma Xi Scientific Research Society, Elected member. 2000.

Sigma Xi Scientific Research Society, Research Grant. 1999. \$500.

Graduate Students Advised – Major Advisor

Kelly Ksiazek (Northwestern University, Ph.D. expected 2016)

Matthew Rhodes (Northwestern University, M. S. expected 2013)

Rebecca Barak (Northwestern University, M. S. expected 2012) Species interactions between native forbs and invasive cheatgrass (*Bromus tectorum* L.) in the Colorado Plateau.

Ricardo Rivera (Northwestern University, M. S. expected 2012) Quantitative genetics in a fragmented landscape, a study of heritable floral traits in *Oenothera harringtonii* (Onagraceae)

Emily Booth (Northwestern University, M. S. 2011) Potential effects of climate change on *Penstemon palmeri* at Zion National Park, Utah, U.S.A.

Melissa Gray (Northwestern University, M. S. 2011) The effects of floral density manipulation on the pollination and reproductive success of *Penstemon pachyphyllus*.

Graduate Students Advised - Committee Member

Anna Braum (Northwestern University, M. S. expected 2012)

Byron Tsang (Northwestern University, M. S. expected 2012)

Kelly Ksiazek (Northwestern University, M. S. 2011) Patterns of Pollen Limitation and Seed Set on Chicago Green Roofs. Committee Member.

Megan Kate Gallagher (Northwestern University, M. S., 2011) Plant Performance in prairie restorations: Does seed source matter? Committee Member

Megan Jensen (Northwestern University, M. S., 2010) Breeding system assessment in a prairie plant community. Committee Member.

Undergraduate Students and Research Assistants Advised

Evan Hilpman Colorado College, 2010 2008 – Present
Senior thesis co-advisor. Genetic analysis of a Colorado endemic threatened by anthropogenic landscape alteration: *Oenothera harringtonii* (Onagraceae). *Oenothera harringtonii* & Colorado Plateau/CARICE Projects.

Sadie Todd University of Missouri, Columbia 2009 – Present
Oenothera harringtonii & Colorado Plateau/CARICE Projects.

Heather-Rose Kates Oberlin College 2010
NSF REU Student. Variation in floral morphology in *Oenothera harringtonii*.

Carrie Klase Warren Wilson College 2009
NSF REU Student. *Oenothera harringtonii* fruit and seed morphology, weight, and seed viability analyses.

Quincy Roberts Lake Forest College 2008 - 2009

Logan Senack University of Connecticut, University Scholar and Honors Student 2006 –2008
Senior thesis co-advisor. Seed size, germination, and the effects of herbivory in rare and common *Desmodium* species.

Susan Kim University of Connecticut 2007

Kathryn Sturgeon University of Connecticut 2005 - 2006

Claudette Casile University of Connecticut, Honors student 2005

Meagan Ridder University of Connecticut, Garden Club of America Scholar 2004

Teaching Experience

Fundamentals of Plant Science & Conservation, Instructor
Plant Science and Conservation

Northwestern University, Evanston, IL
Winter 2009, 2010, 2011, Fall 2011, 2012

This course provides students with the conceptual and theoretical framework within the field of plant biology (especially ecology) and conservation. This seminar-style class is based on reading and discussion of historical literature paired with more recent research. It provides students with the opportunity to think critically and discuss their thoughts within a structured yet informal setting and provides them with a basic background in reading and writing scientific papers.

Field & Laboratory Methods in Plant Biology & Conservation, Co-Instructor Northwestern University, Evanston, IL
Plant Science and Conservation

Fall 2009, 2010, 2011, 2012

The goals of this course are to (1) familiarize students with various tools and techniques used frequently in the plant biology and conservation research, (2) provide students hands-on experience with a variety of field and laboratory methods used in plant biology and conservation research, and (3) ensure that students complete the course feeling confident in their ability to select and implement the appropriate methods to address a variety of research questions.

Current Topics in Ecology & Evolutionary Biology, Co-instructor
Department of Ecology and Evolutionary Biology

University of Connecticut, Storrs, CT
Spring and Fall 2007

Weekly undergraduate seminar designed around the EEB weekly seminar series. Students learned how to critically read and discuss current primary literature written by the weekly seminar speaker, met with the speaker and attended the seminar.

Developmental Plant Morphology, Teaching Assistant
Department of Ecology and Evolutionary Biology

University of Connecticut, Storrs, CT
September 2004 – December 2004

Independently instructed laboratory classes of upper level undergraduate students and graduate students. Acquired skills on designing and implementing a course with a strong laboratory component.

Introduction to Botany, Teaching Assistant
Department of Ecology and Evolutionary Biology

University of Connecticut, Storrs, CT
September 2003 - December 2003

Independently instructed laboratory classes of undergraduates, focusing on various aspects of plant sciences, providing hands-on experience on topics covered in course lectures.

Principles of Biology, Teaching Assistant
Department of Ecology and Evolutionary Biology

University of Connecticut, Storrs, CT
September 2002 - May 2003

Co-instructed laboratory classes of undergraduate with another teaching assistant, focusing on general principals in biology, providing hands-on experience for undergraduates not majoring in Biology.

Professional Experience

National Research Council Assessment of Research Doctorate Programs, National Academies of Sciences
University of Connecticut, Storrs, CT

2006 – 2007

Graduate Assistant

Collected and compiled data on doctoral students, faculty and doctoral programs.

Teachers for a New Era Program, Department of Education
University of Connecticut, Storrs, CT

2005

Graduate Assistant

Developed Biodiversity curriculum for Connecticut sixth grade teachers incorporating ecology and evolutionary biology. Special emphasis on hands-on and interactive learning in the classroom and outdoors.

- National Science Foundation/New England Wildflower Society 2003
Conservation Research Fellow
 Preliminary research to identify causes of decline in New England populations of the large-bracted tick-trefoil, *Desmodium cuspidatum* (Fabaceae).
- Argonne National Laboratory, Argonne, IL 2001 - 2002
Environmental Research Division, Research Aide
 Studied effects of ambient and elevated CO₂ on soybean root growth and associated mycorrhizae using free-air CO₂ enrichment (FACE) rings in association with the SoyFACE Project at the University of Illinois, Urbana-Champaign. Developed novel methods of quantifying mycorrhizal fungi colonization intensities.
- Chicago Botanic Garden, Glencoe, IL 2000 - 2001
Conservation Science Department Intern, Research Intern
 Assisted on numerous projects including: Endangered and Threatened Plants of Cook County Inventory, Flora of Cook County Project, Herbarium teaching collection, Baseline Demographic Data and Genetic Analysis of *Viola conspersa*, Reproductive studies of *Platanthera leucophaea*, and outbreeding depression study of *Lobelia cardinalis* and *L. siphilitica*.
- Gustavus Adolphus College, St. Peter, MN 1998 - 2000
Plant Ecology Research Lab, Sigma Xi funded research
 Rare plant ecology research on *Botrychium* ferns: distribution and abundance of underground reproductive structures (gametophytes, gemmae, and juvenile sporophytes).
- University of Arizona, Tucson, AZ January 2000
Plant Pathology Department, Intern
 Preliminary research on aluminum toxicity tolerance/avoidance of pea and alfalfa root border cells as a mechanism defining plant growth habit.
- Gustavus Adolphus College, St. Peter, MN 1999
Plant Ecology Research Lab, Research Assistant
 Vegetation map of Gustavus Adolphus College and Linnaeus Arboretum, St. Peter, MN
- North Dakota State University, Fargo, ND 1997
Department of Plant Sciences, Research Assistant
 Maintenance of sugar beet and wheat plots investigating effects pesticide and herbicide treatments

Leadership, Service and Synergistic Activities

- Graduate Program in Plant Biology and Conservation. *Curriculum committee member*. Northwestern University and Chicago Botanic Garden. 2011-present.
- Graduate Program in Plant Biology and Conservation. *Master's selection committee member*. Northwestern University and Chicago Botanic Garden. 2011, 2012
- Botanical Society of America. Karling and Graduate Student Research Awards. *Committee member*. 2010 - 2012.
- Botanical Society of America. Certifying Botanists Committee. *Steering committee member*. 2010-2011.
- Botanical Society of America. Plant/Pollinator Interactions in Fragmented Landscapes. *Symposium Co-organizer*. Providence, RI. 2010.
- Conservation and Land Management Internship Program Training Workshop. *Committee chair*. Albright Training Center -Grand Canyon National Park (2009 & 2010); Chicago Botanic Garden (2011 & 2012). This weeklong meeting brings together 75 CLM interns and 10-15 instructors. Interns attend sessions on the Endangered Species Act, plant inventorying and monitoring, field botany and wildlife biology, conservation genetics, etc. June 2009, 2010, 2011, 2012.
- Science, Engineering and Health Professions Collaborative Symposium to promote minorities in the sciences. *Ecology and Evolutionary Biology Department representative*. University of Connecticut. January 2007.

Board of Trustees Distinguished Professor Advisory Committee. *Committee member and graduate student representative*. University of Connecticut. Fall 2006.

Center for Conservation and Biodiversity. *Committee member and graduate student representative*. University of Connecticut. 2006 – 2008.

15th Annual Graduate Student Symposium. *Committee member*. Ecology and Evolutionary Biology Department, University of Connecticut, Spring 2006.

Board of Trustees Distinguished Professor Advisory Committee. *Committee member and graduate student representative*. University of Connecticut. Fall 2005.

Society for Conservation Biology. *Student Advisory Committee member*. July 2004-2005.

Northeast Ecology and Evolution Conference 2004. *Co-chair member, Organizing and Fundraising Committees*. University of Connecticut, Storrs, CT. March 26-28, 2004. Raised \$23,000; Oversaw 4 committees (Abstract/Program, Registration, Website and Internal Recruiting Committees); 210 participants; 135 presentations (oral and poster).

Ecology and Evolutionary Biology Graduate Student Association. *Welcome Committee member*. University of Connecticut. 2003

Graduate Student Senate *Elected Senator, representing the Ecology and Evolutionary Biology*. University of Connecticut. 2002-2003.

Professional Associations

Ecological Society of America (2008)

Graduate Women in Science (2006)

Association for Women in Science (2006)

Union of Concerned Scientists (2003)

Society for Conservation Biology (2003)

Botanical Society of America (2003)

New England Botanical Society (2003)

Torrey Botanical Society (2003)

The Nature Conservancy (2002)

Sigma Xi Scientific Research Society (2000)

Reviewed Manuscripts

American Journal of Botany

Annals Botanici Fennici

Oecologia

Plant Species Biology

Guest Lectures and Seminars

Does fragmentation negatively impact plant species pollinated by long-distance dispersers? Variation in floral advertisements, rewards and neutral genetic markers in *Oenothera harringtonii*. The Field Museum. Chicago, IL. April 2010.

Same but different: using a similar synthetic approach to illuminate the causes and consequences of species decline in two unrelated plant species. Biology Department Seminar, Lawrence University, Appleton, WI. December 2008

Declining *Desmodium*: Multiple approaches to solving a unique conservation problem. Plant Biology and Conservation Departmental Seminar, Northwestern University, Evanston, IL. October 2008

Declining *Desmodium*: Multiple approaches to solving a unique conservation problem. Biology Departmental Seminar, Central Connecticut State University, New Britain, CT. February 2008.

Using scientific data to inform plant conservation decisions. Guest Lecturer, Biology 327, Vascular Plants. Instructor: T. Mione. Central Connecticut State University, New Britain, CT. February 2008.

Published Abstracts (oral presentations unless otherwise noted; * indicates presenting author)

- Skogen, K.*, J. Fant and R. Raguso. 2012. Vagrant pollinators and fragrant plants - geographic structure in floral scent despite hawkmoth-mediated gene flow linking isolated populations. Ecological Society of America, Portland, OR.
- Rivera, R.*, K. Skogen, and J. Fant. 2012. Quantitative genetics in a fragmented landscape, a study of heritable traits in *Oenothera harringtonii*. Ecological Society of America, Portland, OR.
- Barak, B.*, K. Skogen, and J. Fant. 2012. Assessing competitive potential of native forbs from cheatgrass-dominated habitats. Ecological Society of America, Portland, OR.
- Skogen, K.*, R. Raguso, J. Fant and E. Hilpman. 2010. Does fragmentation negatively impact species pollinated by long-distance dispersers? Variation in floral advertisements, rewards and neutral genetic markers in *Oenothera harringtonii*. Botanical Society of America, Providence, RI.
- Skogen, K*, R. Raguso, J. Fant, E. Hilpman*, S. Kelso, and Q. Roberts. 2009. Fragmented fragrances: habitat modification, population structure and reproductive ecology in a rare prairie endemic, *Oenothera harringtonii*. Botanical Society of America, Snowbird, UT.
- Skogen, K* and K. Havens. 2008. Demand for botanists on federal lands: Partnerships between botanic gardens and land management agencies. Botanical Society of America, Vancouver, Canada.
- Skogen, K*. 2007. Does atmospheric nitrogen deposition contribute to the decline of a native nitrogen-fixing species, *Desmodium cuspidatum*? Botanical Society of America, Chicago, IL.
- Skogen, K*. 2007. Does atmospheric nitrogen deposition contribute to the decline of a native nitrogen-fixing species, *Desmodium cuspidatum*? 17th Annual Graduate Student Symposium, Ecology and Evolutionary Biology Department, University of Connecticut.
- Skogen, K*. 2006. Atmospheric nitrogen deposition and the decline of a nitrogen-fixing plant species. Environmental Protection Agency Science to Achieve Results Conference, Washington, DC. Poster presentation.
- Skogen, K*. and K. Holsinger. 2006. Does size matter? Genetic diversity in declining and secure populations of *Desmodium cuspidatum*. Botanical Society of America, Chico, CA.
- Holsinger, K*, and K. Skogen. 2005. Plant genetic consequences of pollinator declines. National Research Council Workshop on the Status of Pollinators in North America. National Academy of Sciences, Washington, DC.
- Skogen, K*. 2005. Demography and reproductive biology of threatened populations of *Desmodium cuspidatum* (Fabaceae). Botanical Society of America, Austin, TX.
- Skogen, K*. 2004. Exploring causes of decline in the large-bracted tick-trefoil, *Desmodium cuspidatum*, (Fabaceae). 2nd Annual Northeast Ecology and Evolution Conference, University of Connecticut, Storrs, CT. Poster presentation.
- Skogen, K*. 2003. Exploring causes of decline in the large-bracted tick-trefoil, *Desmodium cuspidatum*, (Fabaceae). 2003 National Science Foundation/New England Wildflower Society Fellowship in Conservation Biology Symposium, New England Wildflower Society, Framingham, MA. Oral and poster presentations.
- Skogen, K*. 2003. Exploring causes of decline in rare plant species. Northeast Ecology and Evolution Conference, Rutgers University, New Brunswick, NJ.
- Skogen, K*. 2003. Exploring causes of decline in rare plant species. 13th Annual Graduate Student Symposium, Ecology and Evolutionary Biology Department, University of Connecticut.
- Bradford, K*, S. Liarakos, K. Skogen, A. Tietmeyer, P. Vitt and K. Havens. 2001. Comparing the ability of two PCR-based techniques, RAPD and ISSR, to detect low levels of genetic diversity 2001

Midwestern Plant Conservation Conference, Chicago Botanic Garden, Glencoe, IL. Poster presentation.

Tietmeyer, A.*, K. Skogen*, K. Bradford, J. Taylor* and P. Vitt. 2000. Using demographic and genetic indicators to investigate the effects of woodland restoration on the threatened *Viola conspersa*. Sixth Annual Janet Meakin Poor Research Symposium: 2001 Midwestern Plant Conservation Conference, Chicago Botanic Garden, Glencoe, IL. Poster presentation.

Johnson-Groh, C.L., L. Schoessler*, C.Riedel and K. Skogen. 2000. Underground distribution and abundance of *Botrychium* gametophytes and juvenile sporophytes. Symposium: Biology and Conservation of the Ophioglossaceae--A Tribute to Warren "Herb" Wagner. Botanical Society of America, Portland, OR.

Johnson-Groh, C.L., L. Schoessler*, C.Riedel and K. Skogen*. 2000. The distribution and abundance of underground gametophytes in four species of *Botrychium* (moonwort ferns). National Conference of Undergraduate Research, Missoula, MT.

Johnson-Groh, C.L., L. Schoessler*, C.Riedel and K. Skogen*. 1999. Underground distribution and abundance of *Botrychium* gametophytes and juvenile sporophytes. National Sigma Xi Annual Meeting, Minneapolis, MN. Poster presentation.

Johnson-Groh, C.L., L. Schoessler*, C.Riedel and K. Skogen*. 1999. Underground distribution and abundance of *Botrychium* gametophytes and juvenile sporophytes. International Botanical Congress, St. Louis, MO. Poster presentation.