**J.R. ETTERSON**

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**Education**

2000-2002 Postdoctoral Researcher, Dept. of Biology, U of VA

Advisor – Dr. L.F. Galloway

2000 PhD Ecology, Dept. of Ecology, Evolution and Behavior, U of MN Twin Cities (UMTC) Advisor – Dr. R.G. Shaw

1994 BS Biology, *Summa cum laude,* UMTC

1986 BA International Studies, School for International Training. Brattleboro, VT

**Appointments**

2016 - Professor, Dept. of Biology, UMD

2016 - Faculty Fellow, Institute on the Environment, UMTC

2008-2016 Associate Professor, Dept. of Biology, UMD

2015 Spring Associate Director of Graduate Studies, Ecology and Organismal Biology track, IBS

2013 Fall Associate Department Head, Department of Biology, UMD

2013 - Graduate Faculty, Conservation Biology, UMTC

2002-2008 Assistant Professor, Dept. of Biology, UMD

2002-2008 Graduate Faculty, Biology Program (no longer exists), UMD

2005 - Graduate Faculty, Integrated Biological Sciences Program (IBS), UMD

2003 - Senior Graduate Faculty, Dept. Plant Biological Sciences, UMTC

**Recognition & Awards**

2018 Chancellor’s Award for Distinguished Research. University of Minnesota Duluth

2017-2018 One-year sabbatical for research. Swenson College of Science and Engineering

2017 Agate Magazine, article about TNC/UMD “Back to the Future – Adaptation Forestry in Minnesota’s North Woods” (Wildlife Conservation Society, Cornett PI, Etterson co-PI) Adaptation as Acceptance: Toward a New Normal in the Northwoods, story about http://www.agatemag.com/2017/09/adaptation-as-acceptance-toward-a-new-normal-in-the-northwoods/

2016 Nature News in Focus, featured story about Project Baseline (NSF DEB 1142784, Etterson PI; Etterson et al. 2016. Project Baseline, an unprecedented resource to study evolution across space and time) “Resurrected seeds to track evolution” Nature 531:152

2015 Featured story about Project Baseline. “New seed bank for plant evolution studies.” Frontiers in Ecology and the Environment, October issue, pg. 407

2015 Featured story about Project Baseline. “The Lazarus plants: Why 3 million seeds are being sent to cold storage for 50 years.” Atlas Obscura, July issue

2012 Featured story about Project Baseline. UMD Bridge, “Seeds and climate.” Winter issue

2011 Featured story about Project Baseline. “Banking seeds for future evolutionary scientists.” Science 333:693

2011 Cooper Award (honor for outstanding papers), Ecological Society of America. "Evolutionary Responses to Changing Climate" (Davis, Shaw and Etterson. 2005. Ecology 86:1704–1714)

2009-2010 One-year sabbatical for research. Swenson College of Science and Engineering (SCSE)

2009 American Society of Naturalists Presidential Award for the 'best' paper published in The American Naturalist in 2008 (Shaw, Geyer, Wagenius, Hangelbroek, and Etterson. 2008. Am Nat172:E35-347)

2007 Young Teacher Award, SCSE, UMD

2007 Nature Research Highlights, news story about Galloway and Etterson 2007 “Transgenerational plasticity is adaptive in the wild.” (Science 318:1134-1136), Nature 2007 450:461

2006, 2014 Single-semester Sabbatical for Research. SCSE

1994 Philip C. Hamm Undergraduate Research Award for outstanding achievement, UMTC

1994 Honors Undergraduate Research Award (1 of 5), College of Biological Sciences UMTC

**Publications**

*Authors were undergraduates\*, graduate students\*\*, postdoctoral researcher\*\*\**

Ramirez-Valiente, J.A.\*\*\*; N. Deacon, J.R. Etterson, A. Center\*\*, J. Sparks, K. Sparks, T. Longwell, and J. Cavender-Bares. 2018. Natural selection and neutral evolutionary processes contribute to genetic divergence in leaf traits across a precipitation gradient in the tropical oak *Quercus oleoides*. *In press.* Molecular Ecology

Ramirez-Valiente, J.A.\*\*\*, A. Center\*\*, J. Sparks, K. Sparks, J. Etterson, T. Longwell, G. Pilz, J. Cavender-Bares 2017. Population-level differentiation in growth rates and leaf traits in seedlings of the neotropical live oak *Quercus oleoides* grown under natural and manipulated precipitation regimes. Frontiers in Plant Science 8:1-14*.*

Espeland, E.K., N.C. Emery, K.L. Mercer, S.A. Woolbright, K.M. Kettenring, P.L. Gepts, J.R. Etterson. 2017. Evolution of plant materials for ecological restoration: insights from the applied and basic literature. Journal of Applied Ecology doi: 10.1111/1365-2664.12739

Etterson, J.R. and S.J. Mazer. 2016. How climate change affects plants’ sex lives: Shifts in plant sex ratios help plant species to expand upslope in a warmer climate. Science 353:32-33.

Etterson, J.R. 2016. Quantitative Genetics and Climate Change. *In*: Kliman, R.M. (ed.), Encyclopedia of Evolutionary Biology. Vol. 1, pp. 277–286. Oxford: Academic Press.

Etterson, J.R., H. Schneider\*\*\*, N. Soper Gorden\*\*\*, J. Weber\*\*\*. 2016. Evolutionary insights from studies of geographic variation: Contemporary variation and looking to the future. American Journal of Botany 103:5-9.

Etterson, J.R., S. Franks, S. Mazer, H. Schneider\*\*\*, N. Soper Gorden\*\*\*, J. Weber\*\*\*, R.G. Shaw, K. Winkler\*\*, A. Weis. 2016. Project Baseline, an unprecedented resource to study evolution across space and time. American Journal of Botany 103:164-173.

Etterson, J.R., R.H Toczydlowski\*, K.J Winkler\*\*, J.A. Kirschbaum\*\*, T.S. McAulay\*\*. 2016. *Solidago altissima* differs with respect to ploidy frequency and clinal variation across the prairie-forest biome border in Minnesota. American Journal of Botany 103:22-32.

Soper Gorden, N.\*\*\*, K. Winkler\*\*, M. Jahnke\*\*, E. Marshall\*, J. Horky\*, C. Huddelson\*, and J.R. Etterson. 2016. Geographic patterns of seed mass are associated with climate factors, but relationships vary between species. American Journal of Botany103:60-72.

Center, A\*\*, J.R. Etterson, J. Cavender-Bares. 2016. Seed production timing influences seedling fitness in the tropical live oak Quercus oleoides of Costa Rican dry forests American Journal of Botany 103:1407-1414

Geyer, C.J., Ridley, C.E., Latta, R.G., Etterson, J.R and Shaw, R.G. 2013. Local adaptation and genetic effects on fitness: calculations for exponential family models with random effects. Annals of Applied Statistics 7:1778-1795

Etterson, J.R. and R.G. Shaw. 2013. Evolution in response to climate change. Encyclopedia of Biodiversity, 2nd Edition (Ed. S.A. Levin) Elsevier, New York, NY

Shaw, R.G. and J.R. Etterson. 2012. *Tansley Review* Rapid climate change and the rate of adaptation: insight from experimental quantitative genetics. New Phytologist 195:752–765

Schwartz, M.W., J.J. Hellmann, J.M. McLachlan, D.F. Sax, J.O. Borevitz, J. Brennan, A.E. Camacho, G. Ceballos, J.R. Clark, H. Doremus, R. Early, J.R. Etterson, D. Fielder, J.L. Gill, P. Gonzalez, N. Green, L. Hannah, D.W. Jamieson, D. Javeline, B.A. Minteer, J. Odenbaugh, S. Polasky, D.M. Richardson, T.L. Root, H.D. Safford, O. Sala, S.H. Schneider, A.R. Thompson, J.W. Williams, M. Vellend, P. Vitt, and S. Zellmer. 2012. Managed Relocation: Integrating the Scientific, Regulatory, and Ethical Challenges. Bioscience 62:732-743

Holmstrom, R.M.\*\*, J.R. Etterson and D. Schimpf. 2010. Dune restoration introduces genetically distinct American Beachgrass, *Ammophila breviligulata*, into a threatened native population. Restoration Ecology 18 (S2): 426–437

Etterson, J.R. and R.M. Holmstrom\*\*. 2010. Case study “Dune restoration introduces genetically distinct American beachgrass, *Ammophila breviligulata*, into a threatened local population” In J.A. DeWoody, J.W. Bickham, C.H. Michler, K.M. Nichols, O.E. Rhodes, and K.E. Woeste (eds). Molecular Insights Towards the Conservation and Management of our Natural Resources, Cambridge University Press. pp. 214-216

Richardson, D.M, J.J. Hellmann, J. McLachlan, D.F. Sax, M.W. Schwartz, D. Ashe, J.R. Etterson, P. Gonzalez, T. Root, O. Sala, S. Schneider, D. Ashe, J. Brennan, A. Camacho, J. Rappaport Clark, R. Early, D. Fielder, J. Gill, S. Polasky, H. Safford, A. Thompson, and M. Vellend. 2009. Multidimensional evaluation of managed relocation. Proceedings of the National Academy of Science 106: 9721-9724

Galloway, L.F., J.R. Etterson and J. W. McGlothlin. 2009. Contribution of direct and maternal genetic effects to life-history evolution. New Phytologist 183: 826–838

Galloway, L.F. and J.R. Etterson. 2009. Plasticity to canopy shade in a monocarpic herb: within- and between-generation effects. New Phytologist 182:1003-1012

Shaw, R.G., C.J. Geyer, S. Wagenius, H.H. Hangelbroek, and J.R. Etterson. 2008. Unifying life history analyses for inference of fitness and population growth. American Naturalist 172:E35–E47

Fant, J.B., R.M. Anderson\*\*, E. Sirking, J.R. Etterson, and S. Masi. 2008. Genetic structure of threatened native populations and propagules used for restoration, in a clonal species, *Ammophila breviligulata* (American beachgrass). Restoration Ecology. 16:594 - 603

Etterson, J.R., D.E. Delf\*, T.P. Craig, Y. Ando, and T. Ohgushi. 2008. Parallel patterns of clinal variation in *Solidago altissima* in it native range in central U.S.A. and it invasive range in Japan. Botany 86:91-97

Etterson, J.R. 2008. Evolution in response to climate change. Chuck Fox and Scott Carroll (eds). Conservation Biology: Evolution in Action. Oxford University Press. New York, NY pp. 145-163

Franks, S.J., J.C. Avise, W.E. Bradshaw, J.K. Conner, J.R. Etterson, S.J. Mazer, R.G. Shaw, and A.E. Weis. 2008. The resurrection initiative: storing ancestral genotypes to capture evolution in action. BioScience 58:870-873

Galloway, L.F., J.R. Etterson. 2007. Transgenerational plasticity is adaptive in the wild. Science 318:1134-1136

Etterson, J.R., S.R. Keller, L.F. Galloway. 2007. Epistatic and cytonuclear interactions govern outbreeding in the autotetraploid, *Campanulastrum americanum*. Evolution 61:2671-2683

Etterson, M.A., J.R. Etterson, and F. Cuthbert. 2007. A robust new method for analyzing community change and an example using 86 years of avian response to forest succession. Biological Conservation 138:381-389

Burgess, K.S., J.R. Etterson and L.F. Galloway. 2007. Artificial selection shifts flowering phenology and other correlated traits in an autotetraploid herb. Heredity 99:641-648

Botkin, D.B., H. Saxe, M.B. Araújo, R. Betts, R. Bradshaw, T. Cedhagen, P. Chesson, M.B. Davis, T. Dawson, J.R. Etterson, D.P. Faith, S. Ferrier, A. Guisan, A. Skjoldborg Hansen, D. Hilbert, P. Kareiva, C. Loehle, C. Margules, M. New, F. Skov, M.J. Sobel, D. Stockwell, and J.C. Svenning. 2007. Forecasting the effects of global warming on biodiversity. BioScience 57:227-236

Galloway, L.F. and J.R. Etterson. 2005. Population differentiation and hybrid success in *Campanula americana*: geography and genome size. Journal of Evolutionary Biology 18:81-90

Davis, M.B., R.G. Shaw and J.R. Etterson. 2005. Evolutionary responses to a changing climate. Ecology. 86:1704–1714

Etterson, J.R. 2004. Evolutionary potential of *Chamaecrista fasciculata* in relation to climate change: I. Clinal patterns of selection along an environmental gradient in the Great Plains. Evolution 58(7):1446-1458

Etterson, J.R. 2004. Evolutionary potential of *Chamaecrista fasciculata* in relation to climate change: II. Genetic architecture of three populations reciprocally planted along an environmental gradient in the Great Plains. Evolution 58(7):1459-1471

Galloway, L.F., J.R. Etterson, and J. Hamrick. 2003. Outcrossing rate and inbreeding depression in the herbaceous autotetraploid, *Campanula americana*. Heredity 90(4):308-315

Etterson, J.R. and L.F. Galloway. 2002. The influence of light on paternal plants in *Campanula americana* (*Campanulaceae*): Pollen characteristics and offspring traits. American Journal of Botany 89(12):1899-1906

Etterson, J.R. and R.G. Shaw. 2001. Constraint to adaptive evolution in response to global warming. Science 294:151-154

***Published - Not peer reviewed***

Shaw, R.G. C.J. Geyer, S. Wagenius, H.H. Hangelbroek, and J.R. Etterson. 2007. Supporting data analysis for “Unifying life history analysis for inference of fitness and population growth.” Technical Report No. 658, School of Statistics, UMTC

Shaw, R.G. C.J. Geyer, S. Wagenius, H.H. Hangelbroek, and J.R. Etterson. 2007. More supporting data analysis for “Unifying life history analysis for inference of fitness and population growth.” Technical Report No. 661, School of Statistics, UMTC

***Published Undergraduate Abstracts***

Marshall, E\*, K Winkler\*\*, and JR Etterson. 2014. Seed characteristics of *Schizachyrium scoparium* (Poaceae) along geographical gradients. Proceedings of the National Conference on Undergraduate Research (NCUR)

Ellis, G\* K. Updegraff\*\*\*, and JR Etterson. 2013. A test of methods for estimating the size of plant populations sampled for the Project Baseline seed collection. Proceedings NCUR

Prochazka, J\* and JR Etterson. 2012. Selection on flowering time differs on *Solidago altissima* in sites with contrasting water availability. Proceedings NCUR

Toldo, J\*and JR Etterson. 2011. Phenotypic plasticity in leaf attributes of different ploidy levels of *Solidago altissima*. Proceedings NCUR

Wagner, J\* and JR Etterson. 2005. Effects of maternal herbivory of *Campanula cervicaria* on seed fitness. Proceedings NCUR

***In review***

Winkler, K\*\* and J.R. Etterson, *In review.* Constituents of a mixed-ploidy population of *Solidago altissima* (Asteraceae) differ in plasticity and predicted response to selection under simulated climate change. American Journal of Botany.

Sabin, J.T.\*\* and J.R. Etterson. *in review*. Rapid and accurate methods of measuring powdery mildew infection in natural plant populations. Native Plants Journal

Janke, M.\*\* and J.R. Etterson. *in review*. Autonomous self-fertilization in *Linum sulcatum*, a native annual with a previously unknown mating system. Plant Reproduction.

Ramirez-Valiente, J.A.\*\*\*, J.R. Etterson, N. Deacon, J. Cavender-Bares*. In review*. Climate predicts evolutionary potential of functional traits in the neotropical *oak Quercus oleoides.* New Phytologist.

*In revision*

Etterson, J.R. and A.F. Tse\*\*. Polyploidy influences pathways to coadaptation between a native and invasive species

**Research Grants**

***Awarded***

2018-2019 Etterson, J.R., E. Espeland, S. Green\*, Does cultivation of MT wildflower species on native seed farms cause unintended evolution? Montana Native Plant Society $1500.

2018-2019 R. Pizza, J. R. Etterson. Are Restoration Seed Pools Evolving Under Commercial Propagation? Garden Club of America $8,000

2018-2019 Etterson, J.R., H. Goltz\*\*, D. Haines\*\*\*, S. Dymond. Response of forest understory species to experimental treatments that mimic climate change. Minnesota Lake Superior Coastal Program $7,500.

2017-2018 Gross, B.L. and J. R. Etterson. Why Do Coastal Seeds Fail? Minnesota Lake Superior Coastal Program. $222,372.

2011-2017 Etterson, J.R. (PI) S. Franks, S. Mazer, R.G. Shaw, (Co-PIs), C. Walters, C. Richards, A. Weis (consultants). Project Baseline, a living plant genome reserve for the study of evolution. National Science Foundation. DEB 1142784, $1,313,480. No cost extension to July 2017

 *Supplements*

2016 Etterson, J.R. Preparing seeds for deep storage. Research Supplement to DEB 1142784. $28,000

2016 Etterson, J.R. National Science Foundation Research Experience for Undergraduates (REU) 2015. Supplement to DEB 1142784. $21,825

2015 Etterson, J.R. National Science Foundation Research Assistantships for High School Students (RAHSS). Supplement to DEB 1142784. $6,000

2015 Etterson, J.R. (PI), S. Mazer and S. Franks (co-PIs). National Science Foundation Research Experiences for Undergraduates (REU) supplement to DEB 1142784. Three projects $22,079

2014 Etterson, J.R. (PI), S. Mazer and S. Franks (co-PIs). REU supplement to DEB 1142784. Three projects $20,000

2012 Etterson, J.R. A test of methods for estimating the size of plant populations sampled for the Project Baseline seed collection. REU supplement to DEB 1142784 $8,000

2015 Etterson, J.R. (PI), Jordan Mead\*\* (co-PI). Establishment of white pine in coastal forests of Lake Superior. Short Term Action Request Grants (STAR) Minnesota's Lake Superior Coastal Program $7,500

2014 Etterson, J.R. (PI), Katie Winkler\*\* (co-PI). Genetics of coastal arctic plants. Short Term Action Request Grants (STAR) Minnesota's Lake Superior Coastal Program. $7,000

2012-2014 Cornett, M (PI), M. White, C. Dunham, J. Etterson, K. Hall, C. Swanson (co-PIs), Back to the Future – Adaptation Forestry in Minnesota’s North Woods. WildlifeConservation Society Climate Adaptation Fund and The Nature Conservancy $484,204

2009-2014 Cavender-Bares, J. (PI), J.R. Etterson and J.D. Sparks (co-PIs). National ScienceFoundation. Collaborative Research: Adaptive differentiation, selection and water use of a seasonally dry tropical oak: implications for global change. DEB 0843665 $576,765

2007-2013 Etterson, J.R. Testing the evolutionary potential of polyploids in the context of climate change. National Science Foundation. DEB 0641285 $576,333

*Supplements*

2010 Etterson, J.R. 2010. Do diploid and polyploid cytotypes of *Solidago altissima* experience different patterns of natural selection? A study using plants with manipulated flowering phenology. REU supplement to DEB 0641285 $7,500

2008 Etterson, J.R. Phenotypic selection in a natural population of a polyploid goldenrod. REU Supplement to DEB 0641285 $6,000

2008 S. Guildford (PI), R. Hicks, and J.R. Etterson (co-PIs). National Science Foundation Major Instrumentation. MRI proposal for acquisition of a flow cytometer for aquatic ecosystem research. DEB 0821687 $193,827

2004 Etterson, J.R. National Oceanic and Atmospheric Administration: MN Lake Superior Coastal Program. The risk to native MN beachgrass posed by historical restoration efforts that used MI plants $15,000

2003 Etterson, J.R. Minnesota Sea Grant. Potential disruption of local adaptation of native MN populations of *Ammophila breviligulata* as a consequence of habitat restoration using nonlocal propagules $7,500

1995-1998 Science to Achieve Results (STAR) Fellowship, US EPA. 3 years of salary, tuition, and annual $5,000 research budget

1995 National Science Foundation Graduate Fellowship (declined)

***Awarded***

2017 Etterson, J.R. Global Travel Grant to present at XIX International Botanical Congress in Shenzhen, China. Global Programs and Strategy Alliance. U of MN $1,100.

2016 Etterson, J.R., K. Schreiner. Two-day workshop for the Swenson College of Science and Engineering, “Birds of a Feather” Climate Change Group at UMD. Institute on the Environment Mini Grant. U of MN $3,000

2015 Gross, B. and J.R. Etterson. Laying the groundwork for a comparison of evolution across 30+ years: Finding wild sunflower populations to match historic seed collections. UMD Executive Vice Chancellor for Academic Affairs Research and Scholarship Grant $2000

2013-2014 Etterson, J.R. Does earlier flowering in response to climate change incur a fitness cost? Grant-in-Aid of Research, Artistry, and Scholarship. Office of the Dean of the Graduate School UMTC $29,752

2013 Etterson, J.R. and N. Soper Gorden. Floral defense traits and floral herbivory along a latitudinal gradient. UMD Chancellor’s Small Grant $1500

2013 Etterson, J.R. Webinar, Retention of Women in STEM Fields. Swenson College of Science and Engineering (SCSE) $200

2012 Etterson, J.R., Carter, C., Craig, T.P., Gross, B., Pastor, J. and Strasburg, J. Research Greenhouse Initiative at UMD, SCSE, UMD ICR $500,000

2012 Etterson, J.R. Will earlier flowering with climate change alter community structure? Department of Biology ICR Grant Program: Bridge and Seed $5,000

2012 Liang, J., R. Hicks, and J.R. Etterson. Imaging system for Hicks lab and Biology, compound fluorescent microscope. Biology ICR Grant Program: Equipment $9,753

2012 Etterson, J.R., T. Craig, J. Pastor. A request for a well for the newly established experimental research space at the UMD Research and Field Studies Center. Biology ICR Grant Program: Equipment $10,000

2012 Pastor, J., C. Carter, J.R. Etterson. A request for equipment to upgrade growth chamber capabilities. Biology ICR Grant Program: Equipment $25,540

2010 Etterson, J.R., T. Craig, J. Pastor, C. Hale, and R. Hanson. A Master Plan for the UMD Research and Field Studies Center to enhance research. UMD SCSE and Facilities Management $49,000

2005 Etterson, J.R. Testing the evolutionary potential of polyploids Grant-in-Aid of Research, Artistry, and Scholarship. Office of the Dean of the Graduate School UMTC $30,484

2004 Etterson, J.R. Collaborative effort to assess the risk to the threatened MN American beachgrass population on Park Point posed by historical restoration projects that used nonlocal plants. UMD Center for Community and Regional Research $5,000

1998 Etterson, J.R. Graduate Student Dissertation Research Grant, UMTC $500

1995-1998 Etterson, J.R. Dayton-Wilkie Funds for Graduate Research, Bell Museum of Natural History, UMTC Four awards $500, $1,150, $900, $1,000

1995-1998 Etterson, J.R. Research grants from the MN Center for Community Genetics, UMTC, five awards $1,500, $1,500, $2,000, $2,500, $3,900

1992 Etterson, J.R. Alumni Society Undergraduate Research Grant, UMTC $1,200

1998-1999 Etterson, J.R. Graduate Student Dissertation Fellowship, UMTC 1 year salary, tuition

1994 Etterson, J.R. Hamm Memorial Scholarship, College of Agriculture, UMTC $500

1993 Etterson, J.R. Howard Hughes Undergraduate Research Fellowship, UMTC $2500

**Presentations**

*Invited*

2018 Etterson, J.R. *Invited Seminar*. Are we domesticating wild plants during seed increase for restoration? Department of Biology. University of Colorado, Boulder CO

2018 Etterson, J.R., M. Cornett, M. White. *Invited seminar.* An experimental test of assisted migration in the context of forest regeneration. The Nature Conservancy. Minneapolis, MN

2018 Etterson, J.R., M. Cornett, M. White. *Invited salon*. How is climate change affecting vegetation and how is this feeding back onto hydrological dynamics? Institute on the Environment, University of MN, Minneapolis, MN

2018 Etterson, J.R. *Invited Seminar.* Evolution in the Anthropocene. Harmonies in Biology Symposium, Integrated Bioscience Program, Duluth, MN

2017 Etterson, J.R. *Invited Symposium Seminar*. Climate-informed restoration in Coastal Forests of Lake Superior. *Harnessing New Genetic Approaches to Improve Restoration Success.* XIX International Botanical Congress, Shenzhen, China, 23-29 July.

2017 Etterson, J.R., S. Mazer, and S. Franks. *Invited Symposium Seminar*. Project Baseline, A time capsule of seeds. *Seeds and Climate Change*, XIX International Botanical Congress, Shenzhen, China, 23-29 July.

2017 Etterson, J.R. *Invited Webinar*. Adaptation forestry practices for climate change mitigation: a field study. U.S. Forest Service. Reforestation, Nurseries and Genetic Resources Team. http://www.forestrywebinars.net/webinars/adaptation-forestry-practices-for-climate-change-mitigation-a-field-study

2017 Etterson, J.R. *Plenary Lecture*. Project Baseline: A time capsule of seeds. Annual Meeting of the Native Plant Society. Taos, NM.

2017 Etterson, J.R. M. Cornet, M. White, L. Kavajecz, J. Mead. *Invited, presented by L. Kavajecz.* Climate-informed restoration in Coastal Forests of Lake Superior. Joint Annual meeting of Northeast and Southern Nursery Associations and the Intertribal Nursery. Walker MN. 1-3 August.

2016 Etterson, J.R. *Plenary Lecture*. Will evolution rescue plant populations from climate change? Janet Meakin Poor Research Symposium *Seed Sourcing in an Era of Climate Change*. Chicago Botanic Garden, Chicago IL.

2016 Etterson, J.R. *Seminar.* Project Baseline: A time capsule of seeds. Department of Biological Sciences, North Dakota State University, Fargo, ND

2014 Etterson, J.R. *Plenary Lecture.* Invasion and evolution in an age of climate change. Upper Midwest Invasive Species Conference, Duluth, MN

2014 Soper Gorden, N.L.\*\*\*, J.R. Etterson, K. Winkler\*\*, M. Jahnke\*\*, E. Marshall\*, *Symposium seminar.* Project Baseline: A long-term genome bank and a resource for studying geographic variation over time *in* Evolutionary insights from studies of geographic variation: Establishing a baseline and looking ahead to future change. Annual Meeting of the Botanical Society of America. Boise, ID. (*Organized by the Project Baseline postdocs*)

2014 Etterson, J.R. *Symposium seminar.* The geographic structure of populations informs population management with climate change *in* Evolutionary insights from studies of geographic variation: Establishing a baseline and looking ahead to future change. Annual Meeting of the Botanical Society of America. Boise, ID (*Organized by the Project Baseline postdocs*).

2013 Etterson, J.R. *Seminar.* Climate-informed restoration. 40th Conference of the Annual Natural Areas Association, Chicago, IL

2012 Etterson, J.R., S. Franks, S. Mazer, and R. Shaw. *Symposium seminar.* Project Baseline: A living genome bank for the study of evolution *in* Evolutionary processes and restoration: Managing for long-term success. EcoSummit, Columbus, OH

2011 Etterson, J.R. *Plenary Lecture.* Evolution in response to climate change. European Society for Evolutionary Biology, Tübingen, Germany

2011 Etterson, J.R. *Seminar.* Evolution in response to climate change. Purdue University, West Lafayette, IN

2010 Etterson, J.R. *Symposium seminar.* Adaptation to climate change *in* Native plant materials development, production & use in habitat restoration. National Native Seed Conference, Snowbird, UT

2009 Etterson, J.R. *Seminar and participation in working group.* Assisted migration: An interdisciplinary evaluation of a newly proposed conservation strategy. Organized by D. Sax, J. McLachlan, J. Hellman, and M. Schwartz. National Center for Ecological Analysis and Synthesis (NCEAS), University of California, Santa Barbara, CA

2009 Etterson, J.R. *Seminar.* Genetic implications of assisted migration. Fordham University, New York, NY

2009 Etterson, J.R. *Symposium seminar.* Genetic considerations for facilitated migration *in* Assisted migration: An interdisciplinary evaluation of a newly proposed conservation strategy. Annual Meeting of the Ecological Society of America Albuquerque, NM

2009 Etterson, J.R. *Keynote speaker and participation in working group.* Evolution in response to climate change *in* Global change and plant microevolution. Organized by O. Bossdorf, M. Fischer, M. van Kleunen and D. Prati from the University of Bern, Mürren, Switzerland

2009 Etterson, J.R. *Seminar.* Evolution in response to climate change. Fordham University, New York, NY

2009 Etterson, J.R. *Seminar.* Evolution in response to climate change. Cornell University, Ithaca, NY

2008 Etterson, J.R. *Seminar and participation in working group.* Assisted migration: Evaluating a new strategy for species conservation. Organized by D. Sax (Brown University), J. McLachlan (Notre Dame), J. Hellman (Notre Dame), and M. Schwartz (UC Davis). Sponsored by NSF and the Cedar Tree Foundation. Milwaukee, WI

2008 Etterson, J.R. *Seminar and expert panelist.* Evolution in response to climate change *in* Climate Change Adaptation and Biodiversity Conservation: A Minnesota Response. Organized by S. Galatowitsch and L. Frelich, UMTC, Minneapolis, MN

2008 Etterson, J.R. *Symposium seminar.* Evolution in response to climate change *in* Climate change, sustainable agriculture and bioresources. The Center for Austrian Studies and the Horst M. Rechelbacher Foundation. UMTC, Minneapolis, MN.

2008 Etterson, J.R. *Seminar.* Evolution in response to climate change. Wesleyan University, Middletown, CT

2007 Etterson, J.R. *Organizing committee member for working group.* Project Baseline: A workshop to plan the collection of materials for the future of evolutionary genetics. *Chair* A.E. Weis, *other organizers* J.K. Conner, R.G. Shaw, and S. Mazer. Arnold and Mabel Beckman Center of the National Academies, Irvine, CA

2007 Etterson, J.R. *Seminar.* Evolution in response to anthropogenic change. UMTC

2006 Etterson, J.R. *Saul Memorial Lectures in Genetics.* Biotic response to climate change *and* Will plants adapt to climate change? A case study from the Great Plains. Middlebury College, Middlebury, VT

2006 Etterson, J.R. *Symposium seminar.* Pondering the near future: the impact of climate change on native plants *in* What is local? Genetics and plant selection in the urban context. American Museum of Natural History, The NYC Department of Parks, Center for Biodiversity and Conservation, the Brooklyn Botanic Garden- Metro Flora Project, and the Center for Urban Restoration Ecology at Rutgers University. New York City, NY

2006 Etterson, J.R. *Symposium seminar.* Local adaptation of plant populations across climate gradients *in* Thermal Tolerance and it Relationship to Climate Change. Ecological Society of America, Memphis, TN

2006 Etterson, J.R. *Seminar.* Evolution in response to climate change. Sigma Xi, UMD

2006 Etterson, J.R. *Seminar.* Evolution in response to climate change. Northern Forest Genetics Association. U of MN Cloquet Forestry Center, Cloquet, MN

2006 Etterson, J.R. *Seminar* .Evolution in response to climate change. Lakehead University, Thunder Bay, Ontario, Canada

2005 Etterson, J.R. *Symposium seminar.* Will plants adapt to climate change? A case study from the Great Plains *in* Plant conservation in an era of global climate change. Chicago Botanical Garden. Chicago, IL

2005 Etterson, J.R. *Symposium seminar.* Evolution in response to climate change of a prairie species at the northern range limit *in* Dynamics of species range limits. Ecological Society of America. Montréal, Québec, Canada.

2004 Etterson, J.R. *Symposium seminar.* How can we best forecast the likely effects of global warming on general probabilities of extinction? Adaptive evolution should be considered *in* Biodiversity and climate change. Institut for Miljøvurdering (IMV), Environmental Assessment Institute, Copenhagen, Denmark

2002 Etterson, J.R. *Seminar.* Adaptation in a changing environment: Evolutionary potential and the limits to natural selection. U of WA, Seattle, WA

2002 Etterson, J.R. *Seminar.* Adaptation in a changing environment: Evolutionary potential and the limits to natural selection. U of TN, Knoxville, TN

2002 Etterson, J.R. *Participant in workshop.* Evolutionary consequences of invasions by exotic species. Institute for Mathematics and its Applications, UMTC, Minneapolis, MN

2002 Etterson, J.R. *Seminar.* Adaptation in a changing environment: Evolutionary potential and the limits to natural selection. U of OR, Eugene, OR

2001 Etterson, J.R. *Seminar.* Will plant populations adapt to global warming? A case study from the Great Plains American Society of Plant Biologists, National Arboretum, Washington, D.C.

2001 Etterson, J.R. *Seminar.* Adaptation in a changing environment: Evolutionary potential and the limits to natural selection. Utah State University, Logan, UT

2001 Etterson, J.R. *Seminar.* Will plant populations adapt to climate change? Carlton College, Northfield, MN

1999 Etterson, J.R. *Participant in workshop.* Evolutionary approaches to global change. Reno, NV

*Unsolicited*

2017 Etterson, J.R. *Oral presentation* Are plant populations evolving during seed increase for restoration? 2017 National Native Seed Conference, Washington DC, 13-16 February.

2017 White, M. Etterson, J.R. M. Cornet, L. Kavajecz, J. Mead. *Oral presentation* *by M. White*. Climate-informed restoration in Coastal Forests of Lake Superior. Annual Meeting of the Ecological Society of America, Portland, OR, 9-14 August.

2016 Etterson, J.R., J. Mead. Climate-informed restoration: White pine establishment in coastal forests of Lake Superior. MN Lake Superior Coastal Program Annual Meeting, Two Harbors, MN.

2015 *Chair, Organized session* co-organized by S. Mazer and S. Franks, *Oral presentation* Project Baseline, a seed bank to study evolution. *in* Seeds of evolution: Using resurrection ecology and the Project Baseline collection to understand responses to anthropogenic and natural change. Centennial meeting of the Ecological Society of America. Baltimore, MD

2014 Shaw, R.G., S. Wagenius, and J.R. Etterson. *Oral presentation.* Evaluating the immediate capacity for ongoing adaptation. Society for the Study of Evolution, Raleigh, NC

2014 Cornett, M., M. White, J.R Etterson, L. Kavajecz, J. Mead, S. Handler, C. Swanston, K. Hall, *Oral presentation.* Adaptation Forestry in Minnesota's Northwoods. American Geophysical Union, San Francisco, CA

2013 Winkler, K.\*\* and J.R. Etterson. *Poster*. Plasticity, genetic diversity and selection: a native polyploid under simulated climate change. Ecological Society of America. Minneapolis, MN

2013 Soper Gorden, N., Jahnke\*, J.R. Etterson, J.R. S. Franks, S. Mazer, R. Shaw, K. *Poster.* Project Baseline: A living genome bank for the study of evolution. Ecological Society of America. Minneapolis, MN

2013 Center, A.\*\*, J. Cavender-Bares, J.R. Etterson, J. Sparks, T. Longwell, and G. Pilz. *Poster*. Differentiation of physiological traits among tropical live oak populations throughout dry forests of Central America. Ecological Society of America. Minneapolis, MN

2012 Franks, S. J.R. Etterson, S. Mazer, R. Shaw, K. Updegraff, and M. Jahnke\*\*. *Poster.* Project Baseline: A living genome bank for the study of evolution. Society for the Study of Evolution. Ottawa, Ontario, Canada

2012 J. Prochazka\* and J.R. Etterson, *Poster.* Selection on flowering time differs in *Solidago altissima* in sites with contrasting water availability. The Prairie Enthusiasts, Inc. University of WI Stout, Menomonie, WI

2012 Etterson, J.R., S. Franks, S. Mazer, R. Shaw, K. Updegraff\*\*\*, and M. Jahnke\*\*. *Poster*. Project Baseline: A living genome bank for the study of evolution. The Prairie Enthusiasts, Inc. University of WI Stout, Menomonie, WI

2010 Tse, A.\*\* and J.R. Etterson. *Poster*. Competitive responses of tansy and goldenrod differ according to ploidy and genotype. MN WI Invasive Species Conference St. Paul, MN

2010 R. Shaw, J.R. Etterson and C. Geyer. 2010. *Poster*. The distribution of genetic effects on fitness in the annual plant, *Chamaecrista fasciculata*. Society for the Study of Evolution. Portland State University, Portland, OR

2008 Snell, K.\*\*, and J.R. Etterson. *Poster.* Endoreduplication and plant functional traits. Society for the Study of Evolution. Minneapolis, MN

2008 Etterson, J.R. and L.F. Galloway. *Oral presentation.* Adaptive maternal effects: a quantitative genetic analysis. Society for the Study of Evolution, Minneapolis, MN

2007 Franks, S.J., A.E. Weis, J.K. Conner, J.R. Etterson, S.J. Mazer, R.G. Shaw. *Poster.* Storing and resurrecting ancestral genotypes to capture evolution in action. Botanical Society of America. Chicago, IL

2005 Galloway, L.F. and J.R. Etterson. *Oral presentation.* The contribution of maternal effects to adaptation in natural plant populations XVII International Botanical Congress. Vienna, Austria

2004 Galloway, L.F. and J.R. Etterson. *Poster* Inbreeding depression in autotetraploid, *Campanula americana*: a three year field study.Society for the Study of Evolution. Ft. Collins, CO

2004 Etterson, J.R. and L.F. Galloway. *Oral presentation.* Mode of gene action contributing to population divergence in *Campanula americana*. Society for the Study of Evolution. Ft. Collins, CO

2003 Galloway, L.F. and J.R. Etterson. *Oral presentation.* Cyto-nuclear interactions contribute to outbreeding depression in the herbaceous plant *Campanula americana*. Society for the Study of Evolutionary Biology. Chico, CA

2003 Etterson, M.A., J.R. Etterson, and F. Cuthbert. *Oral presentation*. Changes in Neotropical migrant land birds with forest succession at the University of Michigan Biological Station: A meta-analysis spanning 84 years, Society for Conservation Biology. Duluth, MN

2003 Etterson, J.R. and L.F. Galloway. *Oral presentation.* The genetics of population divergence studied through hybridization. Society for Conservation Biology. Duluth MN

2002 Davis, M.B., R.G. Shaw and J.R. Etterson. *Oral presentation.* Evolutionary responses to changing climate. American Quaternary Association, Anchorage, AK

## 2001 Etterson, J.R. and R.G. Shaw. *Oral presentation*. Constraint to adaptive evolution in response to global warming: A case study from the Great Plains.The Society for the Study of Evolution, Knoxville, TN

2000 Etterson, J.R. *Oral presentation.* Will plants adapt to global warming? A case study from the Great Plains.Southeastern Population Ecology and Genetics Group. Highlands, NC

2000 Etterson, J.R. *Oral presentation*. Adaptive evolution in response to global warming: A case study from the Great Plains. Ecological Society of America. Snowbird, UT

1999 Etterson, J.R. *Oral presentation.* Fitness consequences of hybridization between locally adapted populations of *Chamaecrista fasciculata*. The Society for the Study of Evolution. Madison, WI

1998 Lee, T.D. and J.R. Etterson. *Poster.* Physiological differences among population of *Chamaecrista fasciculata* in response to drought. The American Society of Plant Physiologists. Madison, WI

## 1998 Etterson, J.R. and T.D. Lee *Oral presentation.* Clinal variation in morphology and physiology of the annual legume, *Chamaecrista fasciculata*: Greenhouse drought studies. The Society for the Study of Evolution. Vancouver, BC

### 1995 Etterson, J.R. and R.G. Shaw. *Oral presentation.* Spontaneous mutational variation in quantitative traits of *Arabidopsis thaliana*. The Society for the Study of Evolution. Montreal, Quebec

### TEACHING EXPERIENCE

***University of Minnesota Duluth***

Evolution. BIOL 3401. 3 cr. (Sp08, F08, 15, Sp11-17, Sum17) Developed a new computer simulation lab in active learning classroom for spring 2013,

Evolution in the News. BIOL 3402. 1 cre. (Sum17) Developed a new journal article reading course as a companion to the core Evolution course listed above.

Biotic Response to Climate Change. BIOL 4818. 2 cr. (Sp14-16) Developed new course and taught in the Active Learning Classroom

Integrated Evolutionary Processes. IBS 8012. 2 cr. Developed new course, broadcast via ITV to UMTC two semesters (Sp07, 09, 11, 13, 16)

Ecological Genetics (lecture and lab). BIOL 5240. 3 cr. Developed new course (Sp05, F 05, 07, 12)

General Biology II (lecture and lab supervision). BIOL 1012. 5 credits. (Sp04, 05, F06, 07)

Plant Diversity (lecture and lab). BIOL 3601. 3 cr. substantially revised course, taught in Active Learning Classroom in 2013 (F02, Sp04, F04, F05, S09, F10, 11, 13, 16)

Senior Seminar II. BIOL 3998. 0.5 cr. UMD (F02, Sp04, F04, F08)

Senior Seminar I. BIOL 3997. 0.5 cr. UMD (F05, Sp06)

***University of Minnesota Twin Cities***

Introduction to Ecology (Instructor). BIOL 3407. 3 cr (Summer 99)

Evolution (Teaching Assistant for lab). BIOL 5409. 3 cr (F 99)

Evolution (Committee member - developed lab component). BIOL 5409 (99)

Ecology (Teaching Assistant for lab). BIOL 5407. 3 cr (Sp 00)

***Other teaching experience***

English Teacher. Grades K-12. Mobara English Institute. Mobara, Japan. (89-90)

English Teacher. Grades 7-9. 29 public middle schools in Shimokita, Mutsu, Japan. (88-89)

Summer School Science Instructor. Grades 2-4. Alexandria, MN Public Schools, District 206. (88)

Science Curriculum Enhancement Instructor, Consultant. Grade 6. Dayton, OH Public Schools (88).

Summer Programs Instructor and Wildlife Rehabilitation Technician. Grades 4-6. Squam Lakes Science Center, Holderness, NH. (86, 87)

Outdoor Educator and Outreach Coordinator. Grade 6. Glen Helen Outdoor Education Center, Yellow Springs, OH. (86)

Naturalist. Squam Lakes Science Center, Holderness, NH. (85)

Acid Rain Organizer. Massachusetts Public Interest Research Group. Greenfield Community College, Greenfield, MA (85)

Naturalist Intern and Environmental Activist. Natuur 2000, Organization for grades 9-12. Oostende, Belgium. (84)

***Professional Development for Teaching***

2015-2016 SCSE Active Learning Cohort participant (2015) leader (2016)

Summer 2016 SCSE Flipped Classroom Cohort participant

Fall 2016 Writer’s workshop: How to grade student writing efficiently and effectively

Spring 2016 Writer’s workshop: How to manage your time for writing

Fall 2017 Writer’s workshop

**Internal Teaching Grants**

2013 Etterson, J.R. Funds to Build an Active Learning Classroom, 216 SSB. Swenson College of Science and Engineering (SCSE), UMD Information and Technology Services, Department of Biology Enhancement Funds $70,000

2012 Stevenson, S., J. Liang, J. Etterson, and B. Gross. 2012-2013. Writing throughout the curriculum in biology. UMD Integrated Learning Grants $10,000

2012 Etterson, J.R. Transformation of Evolution (Biol 4802) into an active-learning course that teaches concepts of sustainability. UMD Chancellor’s Strategic Initiative Grant with SCSE match $7,000

2012 Etterson, J.R. Enrichment of the undergraduate experience through research in Honduras. UMD Chancellor’s Small Grant $750

2012 Updegraff, K., J.R. Etterson. Postdoctoral funds for meeting of International Biogeography Society. Biology ICR Grant Program: Small grants for graduate students and postdoctoral researchers $1,815

2010 Etterson, J.R, P. Bates, C. Belk, S. Stevenson, N. Lamon, F. Maragi, and M. Anderson. Laminating machine to produce durable educational materials in the Department of Biology. UMD Chancellor’s Small Grant $750

2010 Etterson, J.R. Instruction in GIS technology to enhance current research and support future grant proposals. SCSE Faculty Development Fund $400

2007 Little, A. and J. Etterson. Improvements to Plant Diversity slide collection. UMD Chancellor’s Small Grant. $720

2005 Etterson, J.R. Request for instructional equipment for Ecological Genetics lab. UMD Student Tech Fees $15,488

2004 Etterson, J.R. Request for instructional equipment for Plant Diversity UMD Student Tech Fees. $2,066

2004 Shannon, L. and J. Etterson. Request for instructional equipment for General Biology II UMD Student Tech Fees $3,625

2004 Etterson, J.R. Request for instructional equipment for Plant Diversity and General Biology II. UMD Student Tech Fees $1,123

2003 Etterson, J. Student Tech Fees. Instructional equipment for Plant Diversity UMD Student Tech Fees $6,010

2003 Craig, T. and J. Etterson. Student Tech Fees. Instructional equipment for Coevolution and Plant Diversity UMD Student Tech Fees $12,000

2003 Shannon, L. and J. Etterson. Funding for creation of an online greenhouse holdings database. UMD Chancellor’s Small Grant $623

2003 Borden, V., L. Shannon and J. Etterson. Conversion of analog videos to digital. UMD Chancellor’s Small Grant $1,352

2002 Etterson, J.R. and T. Craig. Request for instructional equipment for Plant Diversity and Coevolution. UMD Student Tech Fees $4,655

**Academic Outreach**

2017 New Mexico Public Radio interview on NSF-sponsored Project Baseline. The Garden Journal. KSFR 101.1 FM

2017 Three one-hour panel presentations and discussion about Pathways to Professions in Science. Arrowhead Juvenile Detention Center. Duluth, MN, Organized by Northwoods Women in Science (NWIS).

2016 Invited presenter “Biotic Response to Climate Change,” Harbor City International School, Duluth MN. Open breakfast forum, grades 9-12.

2016 Invited presenter. Duluth Master Gardeners. “Evolution in response to climate change,” Sunrise Memorial Chapel, Duluth, MN

2015 Coordinated SCSE “Birds of a Feather” Luncheon, Research Slam and Discussion on the topic of climate change. UMD

2015 Presentations by Etterson lab group members Katie Winkler, Laura Kavajecz, and Jordan Mead, Superior National Forest Research Slam, Two Harbors, MN

2015 "Speed Research" presentation to interdisciplinary SCSE faculty at Kirby Grill, UMD

2015 Invited presenter. Half-day meeting with journalists to discuss climate change in the Great Lakes region. Organized by Institutes for Journalism & Natural Resources, http://www.ijnr.org/

2015 Invited presenter “Biotic Response to Climate Change,” Climate Change Forum, Unitarian Universalist Congregation of Duluth, Duluth, MN

13-14 Organizer, 8th grade field trip to UMD for Northstar Academy Edison Charter School to the Department of Biology for five hands-on lessons that were led by undergraduate students in Lyle Shannon’s Animal Diversity course and Jennifer Liang’s Developmental Biology course

2013 Participant, 2nd Annual Northeast Regional Meeting of the MN STEM Network

2012 “Wild Ones” presentation to the general public at Hartley Nature Center

06-09 Hawk Weekend, interpretive talk for the general public entitled, “Birds and Berries,” Matt Etterson and Julie Etterson. Hawk Ridge Bird Observatory

2007 Organized a two-day series of events “Closing the gap: gender issues in academic science.” Invited guests: Elizabeth Lord, Vice Provost for Academic Personnel, Professor of Botany and Developmental Biology at U of CA Riverside and Ruth Shaw, Professor in the Department of Ecology, Evolution & Behavior at UMTC. Supported by a $900 grant to Etterson from the UMD Commission on Women and matching funds from the Department of Biology

2005 Seminar “The value of seeds: A link to the past and a link to the future.” and panel discussion for workshop, Take Back our Seed Supply, Minnesota Sustainable Farming Association.

2005 Panelist for undergraduate forum “Women in Science” Sponsored by the Women's Resource and Action Center, Kirby Student Center. UMD

2004 Presentation and discussion with R. Holmstrom. “The use of nonlocal propagules for habitat restoration: A case study of a threatened population of beachgrass in Minnesota.” Louis River Citizens Action Committee

2003 Expert panelist. “Monitoring the Effects of Climate Change in Minnesota” MN Pollution Control Agency. Minneapolis, MN.

2002 Presentation and discussion. “Using student projects in Plant Diversity (BIOL 3601) to increase our understanding of invasive species at Hawk Ridge.” Hawk Ridge Steering Committee

### Mentoring

***Faculty Mentor***

***Current***

2018- ` Dr. Jessica Sieber, Assistant Professor, Department of Biology

2017- Dr. Salli Dymond, Assistant Professor, Department of Earth and Environmental Science

2016- Dr. Jessica Savage, Assistant Professor, Department of Biology

2016- Dr. Amanda Grusz, Assistant Professor, Department of Biology

***Previous***

2013-2016 Dr. Jared Strasberg, Assistant Professor, Department of Biology

***Peer Evaluation of Faculty Teaching***

2017 Dr. Paul Bates, General Biology II

2016 Dr. Ted Ozersky, BIOL 2801, Ecology

2015 Dr. Briana Gross, BIOL 2201 Genetics

2011 Dr. John Dahl, BIOL 5232 Molecular Biology

2011 Dr. Jenny Liang, BIOL 2202 Developmental Biology

2008 Dr. Tim Kroft, BIOL 2202 Genetics Laboratory

***Postdoc Advisor***

2016- Dr. Dustin Haines, Rapid evolution of native grasses in response to post-fracking soil conditions in oil field remediation sites.

2013-2015 Dr. Nicole Soper Gorden, *Current position*: Assistant Professor, Mars Hill University, Mars Hill, NC

***Graduate Advisor***

***Current***

2018 - Sophie Breitbart. Integrated Bioscience Program (IBS) MS. Recipient of a two-year Graduate School Teaching Fellowship and Graduate School Summer Fellowship ($6000).

2017- Haley Golz. Integrated Bioscience Program (IBS) MS. Facilitated migration of herbaceous understory vegetation for climate change mitigation. Recipient of a Minnesota Lake Superior Coastal Program research grant ($7,500)

2017- Riley Pizza, IBS MS. Inadvertent domestication on native seed farms doing seed increase for restoration projects. Recipient of Garden Club of American Fellowship ($8,000).

***Graduated***

2016 Jordan Mead. IBS MS. Assisted migration of white pine into northern forests of MN

2016 Laura Kavajecz. IBS MS. Adaptive forestry in the northern forests of MN: A test of assisted migration

2015 Matt Jahnke. IBS MS. Autonomous self-fertilization and limited outcrossing in *Linum sulcatum*. *Current position*: Lecturer, Dept. of Biology, UMD

2014 Ada Tse. IBS MS. Differences among cytotypes of *Solidago altissima* in response to a common invasive species *Tanacetum vulgare*. *Current position:* Research Assistant, Environmental Services, Superior, WI

2013 Katie Winkler. IBS MS. Physiological response to drought among different ploidy levels of *Solidago altissima*, *Current position:* IBS PhD and Project Manager, Project Baseline, UMD

2013 Jessalyn Sabin (Toldo), IBS MS. Timing of flowering influences disease dynamics in a polyploid species. *Current position:* Biology Instructor, Hibbing Community College, Hibbing, MN

2009 Tim McAulay. Biology Graduate Program MS. Clinal variation in *Solidago altissima* across a biome border. *Current position:* Biology Instructor, Inver Hills Community College, Minneapolis, MN

2008 Kyle Snell. IBS MS. Endopolyploidy and plant functional traits. *Current position:* Fred Huchinson Cancer Research Center, Seattle, WA

2007 Jessica Kirschbaum (Grochowski). Biology MS. The distribution of ploidy levels of *Solidago altissima* in MN and relationship a climate gradient across a biome boarder. *Current position:* National Park Service Great Lakes Inventory and Monitoring Network, Ashland, WI

2006 Rebecca Holmstrom (Anderson). Biology MS. *Ammophila breviligulata*: Implications of using non-local plant sources for native plant restorations in MN. Co-advised with Dr. David Schimpf.. *Current position:* Botanist, MN Department of Natural Resources, Duluth, MN

***Graduate committees***

***Current***

2016 Erin O'Connell, MS Integrated Bioscience, advisor J. Savage

2015 Rachel Voorhorst, MS Integrated Bioscience, advisor R. Moen

2014 Katie Zlonis. PhD Integrated Bioscience, advisor B. Gross.

***Graduated***

2016 Amber Eule-Nashoba. PhD Ecol. Evol. and Behav. UMTC, advisor R. Shaw

2016 Michael Harris. MS Water Resources, advisor L. Johnson

2016 Tessa Tjepkes, MS Integrated Bioscience, coadvisors J. Strasberg and R. Moen

2015 Alyson Center, PhD Plant Biological Science, UMTC, advisor J. Cavender Bares

2014 Wayne Gaitlin, MS Integrated Bioscience, advisor J. Dahl

2014 Minh Phuong Tran, MS Integrated Bioscience, advisor J. Dahl

2013 Dan Fordice, MS Integrated Bioscience, advisor J. Dahl

2013 Peter Klinkenberg, MS Integrated Bioscience, advisor C. Carter

2013 Carrie Pike, PhD, Department of Forestry, UMTC, advisor R. Montgomery

2013 Hanna Panci. MS Integrated Bioscience, advisor G. Niemi

2013 Angelique Edgerton, MS Integrated Bioscience, advisor J. Pastor

2012 Dan Fordice, MS IBS, Advisor J. Dahl.

2011 Megan Fetke, IBS MS, advisor C. Carter

2008 Natalie White, Biology MS, advisor D. Schimpf

2007 Marte Thabes. Biology MS, advisor D. Branstrator

2007 Mike Dixon, MS Biology, advisor T. Craig

### 2005 Joe Beer, MS Geology, advisor T. Demko

### *Undergraduate Research Mentoring*

2017 Sophia Green, Domestication of wild plant species during the process of seed increase for restoration. B & P[[1]](#footnote-1)

2016 Anthony Rupp, Geographic variation in seed size across species’ ranges. NSF REU2

2015 Andrew Boser. Natural selection on populations of an arctic disjunct plant species along the North Shore of Lake Superior. BURST[[2]](#footnote-2)

2015 Kirk Hietpas, The effects of non-native earthworm invasion in disturbed vs intact Northern Minnesota forests. BURST

2015 Josh Horky. Population genetics of an endangered hemiparasitic plant species in MN. REU[[3]](#footnote-3)

2014 Peter Maddus. Floral and indirect defense traits along a latitudinal gradient. UROP[[4]](#footnote-4)

2014 Peter Maddus. Latitudinal patterns in floral attractive and defense traits, and their potential to mediate pollinator interactions. REU

2014 Dan Thiel. Measuring light availability in restored forest sites: clear cuts, gaps, and shelter woods. BURST

2014 Jessica Le. The lost art of herbarium specimen preparation. BURST

2014 Colton Hudelson. Geographic variation in seed size in a dominant grass of the Great Plains of North America. DR[[5]](#footnote-5)

2014 Andy Olefson. Pollen tube growth following self- and cross-pollinations in *Linum sulcatum* (grooved flax). DR

2013 Erin Machacek. Interaction between climate change, polyploidy and pollination. UROP

2013 Nicholas Altobelli. Automating the measurements of trichome density in *Solidago altissima*. UROP

2013 Lindsey Kramer. How does climate change influence disease susceptibility? A study in a polyploidy plant species. UROP

2012 Kristin Reed. The role of stem trichomes in resistance of *Solidago altissima* to *Uroleucon* sp. and powdery mildew from the Erysiphaeceae family. UROP

2012 Jolene Prochazk. Does exposure to environments of differing water availability lead to physical changes of *Solidago altissima*? UROP

2011 Jolene Prochazak. Do diploid and polyploid cytotypes of *Solidago altissima* experience different patterns of natural selection? REU

2011 Brad Waldorf. Differences in tolerance to chronic drought between diploid and polyploid *Solidago altissima*. UROP

2011 Rachel Toczydlowski. Geographic range of inbreeding and outbreeding depression in diploid and polyploid *Solidago altissima* sampled from climate gradients in Minnesota. UROP

2011 Brad Waldorf. Ploidy and plasticity: How does stem hairiness respond to drought? DR

2011 Mike Benson. The importance to fitness of floral versus vegetative propagation in *Solidago altissima*. DR

2010 Lisa Wiesen. UMD Medical School. Disease dynamics in *Solidago altissima* selected for earlier flowering. B & P

2010 Jolene Prochazak. Phenotypic selection on flowering time across a climate gradient in Minnesota. University of Minnesota Duluth Medical School. B & P

2010 Jessalyn Toldo. Temporal and spatial patterns of male reproductive success in different ploidy levels of *Solidago altissima* exposed to drought. UROP

2010 Ryan Hillesheim. Flowering plasticity in diploid and polyploid *Solidago altissima*. DR

2009 Chantal Leopold. Cytotypes of *Solidago altissima* differ in traits associated with male reproductive fitness. UROP

2009 Jessalyn Toldo. Phenotypic plasticity in leaf attributes of different ploidy levels of *Solidago altissima* DR

2009 Jacqueline Alvar. Simulated herbivory on *Tanacetum vulgaris*: a test of the potential efficacy of biocontrol agents. McNair Scholars Program. College of St. Scholastica[[6]](#footnote-6).

2008 Jessica Chatterton. Differences in phenotypic selection across a biome border in Minnesota. REU

2008 Tyson Sievers. Physiological response to drought in a polyploid goldenrod. DR

2007 Jessica Chatterton. Differences in the extent of inbreeding depression among different genotypes of a nonnative species. UROP

2007 Jessica Chatterton. The effect of inbreeding on an invasive herbaceous species. DR

2006 Laura Jensen. Contrasting responses of a polyploid goldenrod to drought. UROP

2005 Daniel Delf. Overcompensation in response to deer herbivory of the invasive species *Campanula cervicaria*. McNair Scholars Program. College of St. Scholastica.

2005 Sarah Hurd. Phenotypic variation among populations of the invasive bellflower species, *Campanula cervicaria*. UROP and DR

2005 Jasmine Wagner. Effects of maternal herbivory of *Campanula cervicaria* on seed fitness. UROP

2004 Jasmine Wagner. Dispersal mechanisms and germination conditions in an invasive species, *Campanula cervicaria*, in northern Minnesota. UROP

2004 Kevin Prodinsky. Herbivory and effects on parental and offspring fitness in a new invasive species *Campanula cervicaria*. UROP

2003 Margo Bergstrom. Illustration of Plant Diversity Lab Manual. Coadvised with J. Pastor. UROP

2003 Daniel Delf. A comparison of clinal variation in *Solidago altissima* across a broad geographical distribution in its native range and its invasive range in Japan. UROP

2003 Sarah Foltz. Genetic divergence of populations of *Campanula americana* studied by hybridization. UROP and DR

2003 Jeff Willging. Geographic distribution of *Solidago altissima* cytotypes across the prairie-forest border in Minnesota. UROP

2002 Missy Peshman. Mechanisms of outbreeding depression studied through among-population hybridization in *Campanula americana*, the American bellflower. DR

00-02 Advised 5 students with L. Galloway. REU Mountain Lake Biological Station

1996 Jen Larson. Compatibility between populations of native prairie legume, *Chamaecrista fasciculata* and its *Bradyrhizobium* symbiont. DR

96-97 Laura Kinsell. Clinal variation in drought tolerance of the native prairie legume, *Chamaecrista fasciculata*: A greenhouse study. UROP and DR

***High School Student Research Mentoring***

2015 Sarah Jean Truman, Covariation between vegetative and floral chemical defenses along a climate gradient in the Great Plains. NSF Supplement to Research Assistantships for High School Students (RAHSS)

***Undergraduate advising***

 I am currently the academic advisor for ~30 Biology and Cell and Molecular Biology majors per semester.

**Service**

 ***UMD***

2013-2014 Program Prioritization Committee – Evaluation of all academic programs at UMD

2013 Chancellor’s Leadership Workshop, two-day training on equality, diversity and inclusion with Dr. Kathy Obear

2013 Campus Change Team – Enhancing the climate for a diverse campus

2012-2013 UMD Commission for Women

2008 Education Policy Committee

2008 Fulbright Scholarship Evaluation Committee

***Swenson College of Science and Engineering (SCSE)***

2017- Chair, SCSE Faculty Mentoring Committee. Developing a new faculty mentoring program to be implemented at all ranks of SCSE faculty in winter 2018.

2016-2017 Coordinator, SCSE Active Learning Cohorts

2016-2017 Member, SCSE Active Learning Committee

2016 April 8, Birds of a Feather Climate Change, Planned and implemented Luncheon and Research Slam open to all SCSE faculty, ~30 in attendance

2016 October 27-28, Obtained IonE funds for two-day workshop with Dr. K. Schreiner. Organized presentations and discussions to discover interdisciplinary collaborative research projects on climate change issues. Twelve faculty attended from nine UMD and UMTC departments (BIOL, LLO, CHEM, EES, CHEME, MIE, GEOG, SOC, and GERM). Three grant-writing projects have been initiated based on the workshop discussions. Lake Superior Inn, Two Harbors, MN

2015- Organizing the SCSE Birds of a Feather Climate Change group

2014-2016 Member, SCSE Strategic Planning Committee for Outreach

2011-2014 Chair, SCSE Executive Committee

2006- Founded, previously the Chair, and currently a member of the UMD Research and Field Studies Center Advisory Committee: site development, space allocation, facility improvements.

2010-2014 Organized funding to conduct a Master Plan for the UMD Research and Field Studies Center. Ongoing involvement including providing impetus to get this project folded into the Campus Master Planning process

2006-2014 Coordinated expenditure of the Barbara J. Wilson Environmental Research Fund for SCSE Dean

2010, 2014 Proposal review committee for Undergraduate Research Opportunities Program (UROP)

2010 Single Semester Leave Review Committee

***Integrated Bioscience Graduate Program***

2015 Spring Associate Director of Graduate Studies – Environmental and Organismal Track

2010-2012 Integrated Bioscience Graduate Admissions Committee, Chair in 2012

2010-2012 Integrated Bioscience Curriculum Committee, Member

***Department of Biology***

2016 -2017 Chair, Merit Committee

2015-2016 Student Awards Committee

2013-2015 Chair, Department of Biology Farm Committee

2013 Fall Associate Head of the Department of Biology

2013 Member, Department of Biology ICR Committee

2013-2014 Member, Department of Biology Writing in Science Committee

2012- Faculty Tenure Mentor, Jared Strasburg

2012-2014 Organized ad hoc committee to build a new greenhouse on campus, in 2013, I wrote the text that appears in the predesign proposal

2010-2012 Chair, Greenhouse Committee

2012 Member, Department of Biology Strategic Planning Committee

2012-2013 Obtained funding for an active learning classroom 216 SSB and organize training sessions for Biology faculty

2011-2012 Member, Geneticist Search Committee

2011-2012 Member, Department of Biology ICR Committee

2008 Chair, Plant Physiologist Search Committee

2008 Member, Greenhouse Committee

2007-2008 Chair, Senior Lab Services Coordinator Search Committee II

2007 Chair, Senior Lab Services Coordinator Search Committee I

2005-2006 Chair, Biology Departmental Seminar Series

2005-2006 Member, Genetics/Genomics Search Committee

2005-2006 Member, Plant Physiologist Search Committee

2005 Member, Plant Biologist Search Committee

2005 Member, Curriculum Committee

2004 Member, Graduate Admissions Committee

2003 Member, Ad hoc Library Journal Committee

2002-2003 Member, Safety Committee

***Department of Plant Biological Science, UMTC***

2004- Standing member, Recruitment Committee

***Professional Service***

***Editorial***

2012-2016 Associate Editor, Evolution (handled three final manuscripts in 2016)

2014-2016 Associate Editor, Special Issue of American Journal of Botany. In 2016, I coordinated and mentored postdoctoral Associated Editors. *Please note: People affiliated with Project Baseline are not serving as reviewers or editors for each other.* I handled four manuscripts for the special issue and was a reviewer for one additional manuscript

2010-2012 Associate Editor, Population Ecology

***Reviewer***

2003- *Manuscript or research proposal reviewer for:* American Journal of Botany, American Naturalist, Biological Conservation, Biological Invasions, BMC Evolutionary Biology, Botany, Canadian Journal of Forest Research, Castenaea, Ecology, Ecography, Ecology Letters, Evolution, Evolutionary Ecology, Icelandic Centre for Research (Rannsóknamiðstöð Íslands), International Journal of Plant Science, Legislative-citizen Commission on Minnesota Resources (LLCMR), Louisiana EPSCoR, Molecular Ecology, Molecular Insight to Conservation Biology (book chapter), Oikos, Plant Biology, Proceedings of the National Academy of Science, Proceedings of the Royal Society of London B, Nature, National Science Foundation, New Phytologist, Sea Grant, Science, SEEDS: Ohio Agricultural Research and Development Center Urban Habitats, Research Foundation of Flanders, VIDI University of Amsterdam

***Research Proposal Evaluation Panels***

2013 NSF Panel: Evolutionary Genetics

2011 NSF Panel: Evolutionary Genetics

2007 NSF Panel: Doctoral Dissertation Improvement Grant

***National Meeting Organization***

2003-2004 Chair, Travel Committee, International Meeting of the Society for Conservation Biology, July 2004, Duluth, MN

2003-2004 Member, Planning Committee and Concurrent Sessions Committee, International Meeting of the Society for Conservation Biology, July 2004, Duluth, MN

1. B & P, Bridges and Pathways, NIH-sponsored program administered by the Department of Biomedical Sciences, provides >1 year of research training and support including summer stipend. https://biomedical.umn.edu/programs/bridges-and-pathways [↑](#footnote-ref-1)
2. BURST Biology Undergraduate Research in Science and Technology (BURST), administered by the De-partment of Biology and provides $4500 summer stipend and $500 in supplies with a ½ match from the faculty advisor. http://www.d.umn.edu/biology/programs/undergraduate/burst.html [↑](#footnote-ref-2)
3. REU, Research Experiences for Undergraduates, National Science Foundation, supplement to a primary grant [↑](#footnote-ref-3)
4. UROP, Undergraduate Research Opportunities Program, U of MN system program that provides $1500 stipend and $500 in supplies. http://www.urop.umn.edu/urop.html [↑](#footnote-ref-4)
5. DR, Directed Research (BIOL 3994), students obtain 1-3 credits for independent research projects [↑](#footnote-ref-5)
6. https://www.css.edu/student-affairs/support-services/specialized-support/mcnair-scholars.html [↑](#footnote-ref-6)