Emma E. Goldberg

eeg@umn.edu	http://www.umn.edu/~eeg
Education —	
University of California, San Diego Ph.D., Division of Biological Sciences advisor: Russ Lande	2002 - 2007
University of California, Berkeley Graduate courses in physics and biology	2000 - 2002
California Institute of Technology B.S., Physics, with honors	1995 - 1999
Employment —	
University of Minnesota Assistant Professor (and McKnight Land-Grant Professor, 2016–2018)	2014 – present
University of Illinois at Chicago Visiting Research Assistant Professor Postdoctoral Research Associate sponsor/supervisor: Boris Igić	2010 - 2013 2008 - 2010
University of Maryland at College Park Postdoctoral Research Associate supervisor: Bill Fagan	2007 - 2009
Funding Awards —	
National Science Foundation, DEB-1655478 "Breaking Barriers to the Study of Trait-Dependent Lineage Diversification" I am P.I.; with Itay Mayrose, Tracy Heath, Heath Blackmon	2017 - 2020
Binational Science Foundation, 2013286 "Interacting Effects of Polyploidy and Breeding Systems on Rates of Evolution Itay Mayrose and I are P.I.s	2014 - 2016 n"
National Science Foundation, DEB-1120279 "Phylogenetic Models of Macroevolution" I was P.I.; Boris Igić is co-P.I.	2011 - 2014
National Science Foundation, DEB-0919089 "The History and Consequences of Self-Incompatibility" Boris Igić was P.I.; I co-wrote the sections supporting my research	2009 - 2013
National Science Foundation, Graduate Research Fellowship Support for graduate work	2003 - 2006
Dept. of Education Fellowship Support for graduate work	2000 - 2001

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Peer-reviewed articles

- Rabosky, D.L.* and E.E. Goldberg.* 2017. FiSSE: A simple nonparametric test for the effects of a binary character on lineage diversification rates. *Evolution* 71:1432–1442.
- Grossenbacher, D.L., Y. Brandvain, J.R. Auld, M. Burd, P.-O. Cheptou, J.K. Conner, A.G. Grant, S.M. Hovick, J.R. Pannell, A. Pauw, T. Petanidou, A.M. Randle, R. Rubio de Casas, J. Vamosi, A. Winn, B. Igić, J.W. Busch, S. Kalisz, and E.E. Goldberg. 2017. Self-compatibility is overrepresented on islands. *New Phytologist* 215:469–478.
- Goldberg, E.E., S.P. Otto, J.C. Vamosi, I. Mayrose, N. Sabath, R. Ming, T.-L. Ashman. 2017.
 Macroevolutionary synthesis of flowering plant sexual systems. *Evolution* 71:898–912.
- Zhan, S.H., M. Drori, E.E. Goldberg, S.P. Otto, I. Mayrose. 2016. Phylogenetic evidence for cladogenetic polyploidization in land plants. *American Journal of Botany* 103:1252–1258.
- Glick, L., N. Sabath, T.-L. Ashman, E.E. Goldberg, and I. Mayrose. 2016. Polyploidy and sexual system in angiosperms—is there an association? *American Journal of Botany* 103:1223–1235.
- Grossenbacher, D., R. Briscoe Runquist, E.E. Goldberg, and Y. Brandvain. 2016. No association between plant mating system and geographic range overlap. *American Journal of Botany* 103:110–117.
- Sabath, N., E.E. Goldberg, L. Glick, M. Einhorn, T.-L. Ashman, R. Ming, S.P. Otto, J.C. Vamosi, and I. Mayrose. 2016. Dioecy does not consistently accelerate or slow lineage diversification across multiple genera of angiosperms. *New Phytologist* 209:1290–1300.
- Pannell, J.R., J.R. Auld, Y. Brandvain, M. Burd, J.W. Busch, P.-O. Cheptou, J. K. Conner, E.E. Goldberg, A.-G. Grant, D.L. Grossenbacher, S.M. Hovick, B. Igić, S. Kalisz, T. Petanidou, A.M. Randle, R. Rubio de Casas, C.A. Pauw, J.C. Vamosi, and A.A. Winn. 2015. The scope of Baker's law. *New Phytologist* 208:656–667.
- Smith, S.D. and E.E. Goldberg. 2015. Tempo and mode of flower color evolution. American Journal of Botany 102:1014–1025.
- Grossenbacher, D., R. Briscoe Runquist, E.E. Goldberg, and Y. Brandvain. 2015. Geographic range size is predicted by plant mating system. *Ecology Letters* 18:706–713.
- Huang, D., E.E. Goldberg, and K. Roy. 2015. Fossils, phylogenies, and the challenge of preserving evolutionary history in the face of anthropogenic extinctions. *Proceedings of the National Academy* of Sciences USA 112:4909-4914.
- Rabosky, D.L.* and E.E. Goldberg.* 2015. Model inadequacy and mistaken inferences of trait-dependent speciation. Systematic Biology 64:340–355.
- Servedio, M.R., Y. Brandvain, S. Dhole, C.L. Fitzpatrick, E.E. Goldberg, C.A. Stern, J. Van Cleve,
 D.J. Yeh. 2014. Not just a theory: The utility of mathematical models in evolutionary biology.
 PLOS Biology 12:e1002017.
- The Tree of Sex Consortium: T.-L. Ashman, D. Bachtrog, H. Blackmon, E.E. Goldberg, M.W. Hahn, M. Kirkpatrick, J. Kitano, J.E. Mank, I. Mayrose, R. Ming, S.P. Otto, C.L. Peichel, M.W. Pennell, N. Perrin, L. Ross, N. Valenzuela, J.C. Vamosi. 2014. Tree of sex: A database of sexual systems. Scientific Data 1:140015.

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- Fagan, W.F, Y.E. Pearson, E.A. Larsen, H.J. Lynch, J.B. Turner, H. Staver, A.E. Noble, S. Bewick, and E.E. Goldberg. 2013. Phylogenetic prediction of the maximum per capita rate of population growth. *Proceedings of the Royal Society B* 280:20130523.
- Goldberg, E.E. and B. Igić. 2012. Tempo and mode in plant breeding system evolution. *Evolution* 66:3701–3709.
- Goldberg, E.E., R. Lande, and T.D. Price. 2012. Population regulation and character displacement in a seasonal environment. *The American Naturalist* 179:693–705.
- Goldberg, E.E., L.T. Lancaster, and R.H. Ree. 2011. Phylogenetic inference of reciprocal effects between geographic range evolution and diversification. Systematic Biology 60:451–465.
- Anacker, B.L.*, J.B. Whittall, E.E. Goldberg, and S.P. Harrison. 2011. Origins and consequences of serpentine endemism in the California flora. *Evolution* 65:365–376.
- Robertson, K.A., E.E. Goldberg, and B. Igić. 2011. Comparative evidence for the correlated evolution of polyploidy and self-compatibility in Solanaceae. *Evolution* 65:139–155.
- Goldberg, E.E., J.R. Kohn, R. Lande, K.A. Robertson, S.A. Smith, and B. Igić. 2010. Species selection maintains self-incompatibility. *Science* 330: 493–495.
- Goldberg, E.E., H.J. Lynch, M.G. Neubert, and W.F. Fagan. 2010. Effects of branching spatial structure and life history on the asymptotic growth rate of a population. *Theoretical Ecology* 3:137–152.
- Goldberg, E.E.* and B. Igić.* 2008. On phylogenetic tests of irreversible evolution. Evolution 62: 2727–2741.
- Goldberg, E.E. and R. Lande. 2007. Species' borders and dispersal barriers. The American Naturalist 170: 297–304.
- Roy, K* and E.E. Goldberg* 2007. Origination, extinction and dispersal: integrative models for understanding present-day diversity gradients. *The American Naturalist* 170: S71–S85.
- Goldberg, E.E. and R. Lande. 2006. Ecological and reproductive character displacement on an environmental gradient. *Evolution* 60:1344–1357.
- Goldberg, E.E., K. Roy, R. Lande, and D. Jablonski. 2005. Diversity, endemism, and age distributions in macroevolutionary sources and sinks. *The American Naturalist* 165: 623–633.

Book chapter

 Goldberg, E.E. 2013. Species selection. In J. Losos, ed. The Princeton Guide to Evolution. Princeton University Press.

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^{*} equal contributions

PEER REVIEWING

Manuscript review for: The American Naturalist, Biological Journal of the Linnean Society, Ecography, Ecological Modelling, Ecology, Ecology and Evolution, Ecology Letters, Evolution, Evolutionary Biology, Global Ecology and Biogeography, International Journal of Plant Sciences, Journal of Biogeography, Journal of Evolutionary Biology, Journal of the Royal Society Interface, Methods in Ecology and Evolution, Molecular Biology and Evolution, Nature, Nature Communications, New Phytologist, Oikos, PeerJ, Philosophical Transactions of the Royal Society B, PLoS Biology, PLoS ONE, Proceedings of the National Academy of Sciences USA, Proceedings of the Royal Society of London Series B, Systematic Biology

Grant proposal review for the National Science Foundation: Evolutionary Genetics, Phylogenetic Systematics, Population & Community Ecology, Dimensions of Biodiversity

Grant proposal review for Canada Research Chairs, National Geographic Society, Marsden Society NZ.

Associate Editor for Systematic Biology

2015 - present

TEACHING -

Professor, Univ. Minnesota
Evolution.

Instructor, NIMBioS
summer 2017
Phylogenetics theory at RevBayes workshop.

Instructor, Nature of Life
Spatial ecology module at the UMN freshman retreat.

Graduate Teaching Assistant, UC San Diego
Quantitative Ecology and Conservation. Biometry. Introductory Ecology.

Graduate Student Assistant, UC Berkeley
2000 – 2002
Thermodynamics. Electricity & Magnetism.

Invited Participation -

Conference talks

Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists

"Sex in the wild." SSE symposium (Portland, Oregon)	2017
 "Integrating approaches to macroevolution: Combining fossils and phylogenies." SSE symposium (Raleigh, North Carolina) 	2014
 "Unified approaches for understanding patterns of character evolution and diversification" SSB symposium (Norman, Oklahoma) 	2011
 "The future of historical biogeography: conceptual and methodological challenges" SSB symposium (Portland, Oregon) 	2010
European Society for Evolutionary Biology	
- "Predicting macroevolution from microevolution" symposium (Tübingen, Germany)	2011
Okazaki Biology Conference	
- "The Biology of Extinction 2" (Okazaki, Japan)	2006

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Workshops

Eawag, Switzerland

"Species interactions on phylogenetic trees"	2016
National Evolutionary Synthesis Center	
"Linking self-fertilization, dispersal and distribution traits of species: Is Baker's law an exception to the rule?"	2013 - 2015
 "Integrating approaches to macroevolution: combining fossils and phylogenies" 	2013
 "The tree of sex: A comprehensive synthesis of sex determination systems in eukaryotes" 	2012 - 2014
National Socio-Environmental Synthesis Center	
"Macroevolution of ecosystem services"	2012
Silwood Park, Imperial College, London	
"Evolution, ecology and spatial biology"	2008
National Center for Ecological Analysis and Synthesis	

Departmental seminars

Uppsala Univ., Sweden (2017). Univ. California, Davis (2017). Eawag, Luzern, Switzerland (2016). Iowa State Univ. (2016). Smithsonian Institution (2016). Indiana Univ. (2015). Univ. Toronto (2015). Univ. Oxford (2013). Univ. Edinburgh (2013). Univ. North Carolina (2013). Univ. Idaho (2013). Univ. Minnesota (2012). Univ. California, San Diego (2012). Univ. Chicago (2012). Univ. Oregon (2012). Stanford University (2012). Univ. New Mexico (2011). Univ. Illinois at Chicago (2011). Univ. British Columbia (2009). New Mexico Institute of Mining and Technology (2009). Univ. Western Australia (2008). Univ. Virginia (2008).

- "Conservation priorities: can we have our biodiversity and ecosystem services too?"

2006

Other

 "Darwin Day" public symposium, Oslo, Norway 	2017
 "Plant Speciation" symposium, Austin, Texas 	2016
 Elected council member, Society of Systematic Biologists 	2016 - 2018

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