

TOM E.X. MILLER*Curriculum vitae*

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EDUCATION

- Ph.D. (Biology), University of Nebraska - Lincoln, 2007
Advisor: Dr. Svata M. Louda
- B.A. (Biology), Colgate University, 2002

ACADEMIC POSITIONS AND AFFILIATIONS

- 2018 – present: Associate Professor of Ecology and Evolutionary Biology, Department of Biosciences, Rice University
- 2011 – 2018: Godwin Assistant Professor of Ecology and Evolutionary Biology, Department of Biosciences, Rice University
- 2009 – 2011: Huxley postdoctoral fellow, Department of Ecology and Evolutionary Biology, Rice University
- 2007 – 2008: USDA postdoctoral fellow, Department of Biological Science, Florida State University

RESEARCH FUNDING

- National Science Foundation DEB, “Collaborative Research: BoCP-Design: US-China: Functional divergence between the sexes: ecological consequences of climate-induced sex ratio shifts”, \$500,000 (\$250,138 to Rice), 2022-2024 (PI: Miller; coPIs: K. Crawford, A. Keiser, J. Leebens-Mack, M. McCary)
- National Science Foundation DEB, “The geographic footprint of host-symbiont mutualism”, \$874,999, 2022-2026 (PI: Miller)
- Rice Creative Ventures Fund: Conference and Workshop Development, “Thanks for the Ride: Biotic Vectors of Dispersal”, \$9,988, 2022-2023 (PI: A. Correa; coPIs: H. Rogers, Miller)
- National Science Foundation DEB, MCA: “Plant-soil feedbacks and population dynamics of two arid system shrubs with contrasting spatial distributions and life histories”. (PI: M. Miriti, Mentor: Miller), \$23,000 to Miller, 2021-2024
- National Science Foundation DEB, Supplement to “LTREB: Host-symbiont interactions through the lens of stochastic demography”, \$33,865, 2021 (PI: Miller)
- The Fields Institute for Research in Mathematical Sciences Working Group, “New mathematical theory to understand the effects of evolution on range expansion”, \$15,000

CAD + \$10,000 USD (NSF matching funds), 2020 (PI: F. Lutscher, coPIs: Miller, J. Williams, C. Cobbold)

- Canadian Institute for Ecology and Evolution Thematic Working Group, “Data and theory synthesis to resolve the effects of evolution on the predictability of range expansion”, \$10,750 CAD, 2018 (co-PI with J. Williams)
- National Science Foundation DEB, “LTREB: Host-symbiont interactions through the lens of stochastic demography”, \$450K (\$354,060 to Rice), 2018-2023 (PI: Miller; coPIs: J. Rudgers, K. Whitney)
- National Science Foundation DEB, “LTER: Sevilleta (SEV) Site: Climate Variability at Dryland Ecotones”, \$5.4M to University of New Mexico, 2018-2023 (PI: J. Rudgers, coPIs: Miller, S. Newsome, M. Litvak, Y. Luo)
- Texas EcoLabs Funding Opportunity, “Individual-, population-, and community-level variation in grass-endophyte symbiosis across the longitudinal precipitation gradient of Texas”, 2018, \$14,883 (PI: Miller)
- National Science Foundation DEB (\$100,000), “RAPID: Ant community responses to a 1,000-year flooding event”, 2018-2019 (PI: Miller; coPIs S. Solomon and S. Bengston)
- National Science Foundation DEB (\$276,566 to University of New Mexico; no Rice budget), “EAGER: Collaborative Research: Sevilleta LTER Environmental Variability at Dryland Ecotones”, 2017-2018 (PI: J. Rudgers, coPIs: Miller, S. Newsome, M. Litvak, Y. Luo)
- Texas EcoLabs Funding Opportunity (\$14,728), “A quantitative survey of the floral microbiomes of Texas wildflowers”, 2016-2017 (PI, awarded to PhD student Marion Donald)
- National Science Foundation DEB (\$309,268), “EAGER: Effects of environmental variability on population dynamics in the long-term ecological research (LTER) network”, 2015-2018 (PI: Miller)
- National Science Foundation DEB (\$17,458), “DISSERTATION RESEARCH: Do trait correlations and demographic stochasticity alter the dynamics of evolutionarily-accelerated invasions?”, 2015-2017 (PI: Miller, awarded to PhD student Brad Ochocki)
- National Science Foundation DEB (\$260,183 to University of California - Irvine), “Population consequences of sexually dimorphic responses in a plant species to ongoing and experimental changes in climate”, 2015-2018 (non-PI senior personnel; PI: K. Mooney, coPI: W. Petry)
- Big Thicket Association (\$5,978), “Ant community dynamics in the Big Thicket National Preserve”, 2015-2018 (coPI, PI: Scott Solomon)
- National Science Foundation DEB, Population and Community Ecology-1145588 (\$560,000 + \$20,900 REU supplements), “Ecological dynamics of vertically transmitted symbionts in hosts with complex life histories”, 2012-2017 (PI: Miller, coPI: J.A. Rudgers)

- Rice University Faculty Initiatives Fund (\$50,000), “Causes and consequences of skewed sex ratios at the range margins of a dioecious plant”, 2013-2014 (PI: Miller, coPI: G. Saxer)
- US Department of Agriculture CSREES-2007-02270 (\$125,000), “Predicting invasive spread by exotic insect pests: empirical and theoretical tests of alternative invasion models”, 2007-2010 (PI: Miller)

PUBLICATIONS (*undergraduate advisee, †graduate advisee, **postdoctoral advisee, ††technician, ‡corresponding author)

Under review or revision

- †Fowler, J.C., †Donald, M.L., Bronstein, J., and **T.E.X. Miller**. The geographic footprint of mutualism. Submitted to *Ecological Monographs*

2022

- †Donald, M., Galbraith, J.A., Erastova, D.A., Podolyan, A., **Miller, T.E.X.**, and M. Dhami. Urbanization increases diversity in a nectar microbe metacommunity. Submitted to *Environmental Microbiology* (in press)
- †Donald, M.L. and **T.E.X. Miller**. Strong pairwise ant-plant mutualism has limited spillover effects on an ant community. *Ecology and Evolution* (in press)
- **Miller, T.E.X.** and **A. Compagnoni. Two-sex demography, sexual niche differentiation, and the geographic range limits of Texas bluegrass (*Poa arachnifera*). *American Naturalist* 200:17-31
- Ellner, S.P., Adler, P.B., Childs, D., Hooker, G., **Miller, T.E.X.**, Rees, M. A critical comparison of integral projection and matrix projection models for demographic analysis: Comment. *Ecology* (in press)

2021

- **Dong, T., Zhang, R., Liu, J., †Fowler, J.C., **Miller, T.E.X.**, Xu, X. Warming alters sex-specific responses in leaf defense against insect herbivory in *Populus cathayana*. *Environmental and Experimental Botany* 104:557
- Lynn, J, **Miller, TEX**, Rudgers, J. Mammalian herbivores restrict the altitudinal range limits of alpine plants. *Ecology Letters* 24:1930-1942
- Evers, S.M., Knight, T., Inouye, D.W., **Miller, T.E.X.**, Salguero-Gomez, R., Iler, A., Compagnoni, A. Lagged and dormant-season climate better predict plant vital rates than climate during the growing season. *Global Change Biology* 27:1927-1941
- †Donald, M.L., ††Bohner, T.F., ††Kolis, K., Shadow, A., Rudgers, J.R., and **T.E.X. Miller**. Context-dependent variability in the population prevalence and individual fitness effects of plant-fungal symbiosis. *Journal of Ecology* 109:847-859

2020

- Liu, J., Zhang, R., Xu, X., †Fowler, J.C., **Miller, T.E.X.**, **Dong, T. Effect of summer warming on growth, photosynthesis and water status in female and male *Populus*

cathayana: implications for sex-specific drought and heat tolerances. *Tree Physiology* 40: 1178–1191

- *Czachura, K. and ‡**T.E.X. Miller**. Subtle dimensions of climate change have strong demographic effects on a cactus population in extinction debt. *Journal of Ecology* 108: 2557-2570
- **Miller, T.E.X.**, Angert, A. L., Brown, C.D., Lee-Yaw, J.A., Lewis, M., Lutscher, F., Marculis, N.G., Melbourne, B.A., Shaw, A.K., Szűcs, M., Tabares, O., Usui, T., Weiss-Lehman, C., Williams, J.L. Eco-evolutionary dynamics of range expansion *Ecology* 101: e03139
- Gundel, P., Sun, P., Charlton, N., Young, C.A., **Miller, T.E.X.**, Rudgers, J.A. Folivory increases vertical transmission of fungal endophytes that deter herbivores and alter plant tolerance of herbivory. *Annals of Botany* 125:981-991
- **Compagnoni, A., ††Bibian, A.J., †Ochocki, B.M., Levin, S., Zhu, K., and **T.E.X. Miller**. popler: An R package for extraction and synthesis of population time series from the long-term ecological research (LTER) network. *Methods in Ecology and Evolution* 11: 258-264
- †Ochocki, B.M., Saltz, J.B., and ‡**T.E.X. Miller**. Demography-dispersal trait correlations modify the eco-evolutionary dynamics of range expansion. *American Naturalist* 195: 231-246

2019

- Williams, J., Hufbauer, R., and **T.E.X. Miller**. How evolution modifies the variability of range expansion. *Trends in Ecology and Evolution* 34: 903-913
- Iler, A.M., **Compagnoni, A.C., Inouye, D.W., Williams, J., CaraDonna, P.J., Anderson, A., and **T.E.X. Miller**. Reproductive losses due to climate change-induced earlier flowering are not the primary threat to plant population viability in a perennial herb. *Journal of Ecology* 107: 1931-1943
- †Sneck, M.E., Rudgers, J.A., Young, C.A., and ‡**T.E.X. Miller**. Does host outcrossing disrupt compatibility with heritable symbionts? *Oikos* 128: 892-903

2018

- *Cavazos, B.R., †Sneck, M., ††Bohner, T., †Donald, M.L., Shadow, A., Omacini, M., Rudgers, J.A., and ‡**T.E.X. Miller**. Testing the roles of vertical transmission and drought stress in the prevalence of heritable fungal endophytes in annual grass populations. *New Phytologist* 219: 1075-1084
- Eberhart-Phillips, L.J., Küpper, C., Carmona-Isunza, M.C., Vincze, O., Zefania, S., Cruz-López, M., Kosztolányi, A., **Miller, T.E.X.**, Barta, Z., Cuthill, I.C., Burke, T., Székely, T., Hoffman, J.I. and O. Krüger. 2018. Demographic causes of adult sex ratio variation and their consequences for parental cooperation. *Nature Communications* 9: 1651

2017

- **Compagnoni, A., Steigman, K., and **T.E.X. Miller**. Can't live with them, can't live without them? Balancing mating and competition in two-sex populations. *Proceedings of the Royal Society Series B* 284: 20171999
- †Schultz, E.L., Eckberg, J.O., Berg, S.S., Louda, S.M., and **T.E.X. Miller**. 2017. Native insect herbivory overwhelms context-dependence to limit complex invasion dynamics of exotic weeds. *Ecology Letters* 20:1374-1384
- Eberhart-Phillips, L.J., C. Küpper, **T.E.X. Miller**, M. Cruz-López, K.H. Maher, N. dos Remedios, M.A. Stoffel, J.I. Hoffman, O. Krüger, and T. Székely. 2017. Sex-specific early survival drives adult sex ratio bias in snowy plovers and impacts mating system and population growth. *Proceedings of the National Academy of Sciences* 114: E5474–E5481
- Sullivan, L., Li, B., **Miller, T.E.X.**, Neubert, M. and A. Shaw. 2017. Density dependence in demography and dispersal generates fluctuating invasion speeds. *Proceedings of the National Academy of Sciences* 114:5053-5058
- †Sneck, M.E.S., Young, C.A.Y., Rudgers, J.A., Charlton, N. and **T.E.X. Miller**. 2017. Variation in the prevalence and transmission of heritable symbionts across host populations in heterogeneous environments. *Microbial Ecology* 74:640-653
- †Ochocki, B.M. and **T.E.X. Miller**. 2017. Rapid evolution of dispersal ability makes biological invasions faster and more variable. *Nature Communications* 8:14315
- Press coverage: BBC, Futurity, *Nature Research Highlights*
- *Wagner, N.K., †Ochocki, B.M., Crawford, K., **Compagnoni, A. and ‡**T.E.X. Miller**. 2017. Genetic mixture of multiple source populations accelerates invasive range expansion. *Journal of Animal Ecology* 86:21-34
-*Faculty of 1000* selection
-Editors' selection for "In Focus" feature by R. Hufbauer: Admixture is a driver rather than a passenger in experimental invasions. *Journal of Animal Ecology* 86:4-6

2016

- Elderd, B.D. and **T.E.X. Miller**. 2016. Quantifying demographic uncertainty: Bayesian methods for Integral Projection Models. *Ecological Monographs* 86:125-144
- †Bibian, A.J., Rudgers, J.A., and ‡**T.E.X. Miller**. 2016. The role of host demographic storage in the ecological dynamics of vertically transmitted symbionts. *American Naturalist* 188:446-459.
- Petry, W.K., Soule, J.D., Iler, A.M., Chicas-Mosier, A, Inouye, D.W., **Miller, T.E.X.**, Mooney, K.A. 2016. Sex-specific responses to climate change in plants alter population sex ratio and performance. *Science* 353:69-71
- **Compagnoni, A., †Bibian, A.J., †Ochocki, B.M., Rogers, H.S., †Schultz, E., †Sneck, M.E., Elderd, B.D., Iler, A., Inouye, D., Jacquemyn, H. and **T.E.X. Miller**. 2016. The effect of demographic correlations on the stochastic population dynamics of perennial plants. *Ecological Monographs* 86:480-494

2015

- †Downey, M.H., *Searle, R., *Bellur, S., *Geiger, A., Maitner, B., *Ohm, J., Tuda, M., and ‡**T.E.X. Miller**. 2015. A comparative approach to testing hypotheses for the evolution of sex-biased dispersal in bean beetles. *Ecology and Evolution* 5:4819–4828
- Chung, Y., **T.E.X. Miller**, and J.A. Rudgers. 2015. Fungal symbionts maintain a rare plant population but demographic advantage drives the dominance of a common host. *Journal of Ecology* 103:967-977
- Williams, J.L., Jacquemyn, H., †Ochocki, B., Brys, R. and **T.E.X. Miller**. 2015. Life history evolution under climate change and its influence on the population dynamics of a long-lived plant. *Journal of Ecology* 103:798-808

2014

- *Ohm, J.R. and ‡ **T.E.X Miller**. 2014. Balancing anti-herbivore benefits and anti-pollinator costs of defensive mutualists. *Ecology* 95:2924-2935
- **Miller, T.E.X.** and J.A. Rudgers. 2014. Niche differentiation in the dynamics of host-symbiont interactions: symbiont prevalence as a coexistence problem. *American Naturalist* 183:506-518
- **Miller, T.E.X.** 2014. Plant size and reproductive state affect the quantity and quality of rewards to animal mutualists. *Journal of Ecology* 102:496-507
- *Snyder, K.T., ††Freidenfelds, N., and ‡**T.E.X. Miller**. 2014. Consequences of sex-selective harvesting and harvest refuges in experimental metapopulations. *Oikos* 123:309-314

2013

- **Miller, T.E.X.** and B.D. Inouye. 2013. Sex and stochasticity affect range expansion of experimental invasions. *Ecology Letters* 16:354-361
-Faculty of 1000 selection
- *Yule, K.M., **Miller, T.E.X.** and J.A. Rudgers. 2013. Costs, benefits, and loss of vertically transmitted symbionts affect host population dynamics. *Oikos* 122:1512-1520

2012

- Williams, J.L., **Miller, T.E.X.**, and S.P. Ellner. 2012. Avoiding unintentional eviction from integral projection models. *Ecology* 93:2008-2014
- **Miller, T.E.X.**, J.L. Williams, E. Jongejans, R. Brys, and H. Jacquemyn. 2012. Evolutionary demography of iteroparous plants: incorporating non-lethal costs of reproduction into integral projection models. *Proceedings of the Royal Society Series B* 279:2831-2840
- Rudgers, J.A., **Miller, T.E.X.**, Ziegler, S.M., and K.D. Craven. 2012. There are many ways to be a mutualist: endophytic fungus reduces plant survival but increases population growth. *Ecology* 93:565-574

2011

- Lee, C.T., **Miller, T.E.X.**, and B.D. Inouye. Consumer effects on the vital rates of their resource can determine the outcome of competition between consumers. *American Naturalist* 178:452-463

-Faculty of 1000 selection

- **Miller, T.E.X.** and B.D. Inouye. 2011. Confronting two-sex demographic models with data. *Ecology* 92: 2141-2151
- **Miller, T.E.X.** and V.H.W. Rudolf. 2011. Thinking inside the box: community-level consequences of stage-structured populations. *Trends in Ecology and Evolution* 26:457-466
- **Miller, T.E.X.**, Shaw, A.K., Inouye, B.D., and M.A. Neubert. 2011. Sex-biased dispersal and the speed of two-sex invasions. *American Naturalist* 177:549-561 (**Miller and Shaw contributed equally**)
- Holland, J.N., Chamberlain, S.A., and **T.E.X. Miller**. 2011. Consequences of ants and extrafloral nectar for a pollinating seed-consuming mutualism: ant satiation, floral distraction, or plant defense? *Oikos* 120: 381-388

2010

- **Miller, T.E.X.**, J.C. Legaspi, and B. Legaspi. 2010. Experimental test of biotic resistance to an invasive herbivore provided by potential plant mutualists. *Biological Invasions* 12: 3563-3577
- **Miller, T.E.X.** and B. Tenhumberg. 2010. Contributions of demography and dispersal parameters to the spatial spread of a stage-structured insect invasion. *Ecological Applications* 20: 620-633

2009

- *Rominger, A.J., **T.E.X. Miller**, and S.L. Collins. 2009. Relative contributions of neutral and niche-based processes to the structure of a desert grassland grasshopper community. *Oecologia* 161:791-800
- *Robbins, M. and ‡**T.E.X. Miller**. 2009. Patterns of ant activity on *Opuntia stricta* (Cactaceae), a native host-plant of the invasive cactus moth, *Cactoblastis cactorum* (Lepidoptera: Pyralidae). *Florida Entomologist* 92: 391-393
- **Miller, T.E.X.**, S.M. Louda, K.A. Rose, and J. Eckberg. 2009. Impacts of insect herbivory on cactus population dynamics: experimental demography across an environmental gradient. *Ecological Monographs* 79: 155-172
- Takahashi, M., S.M. Louda, **T.E.X. Miller**, and C.W. O'Brien. 2009. Occurrence of *Trichosirocalus horridus* (Coleoptera: Curculionidae) on native *Cirsium altissimum* versus exotic *C. vulgare* in North American tallgrass prairie. *Environmental Entomology* 38: 731-740

2008

- **Miller, T.E.X.**, B. Tenhumberg, and S.M. Louda. 2008. Herbivore-mediated ecological costs of reproduction shape the life history of an iteroparous plant. *American Naturalist* 171: 141-149

-Featured article of February 2008 issue

-Featured on [This Week in Evolution](#)

-Winner of the 2009 *American Naturalist* best student paper award

- **Miller, T.E.X.** 2008. Bottom-up, top-down, and within-trophic level pressures on a cactus-feeding insect. *Ecological Entomology* 33: 261-268

2007

- **Miller, T.E.X.** 2007. Does having multiple partners weaken the benefits of facultative mutualism? A test with cacti and cactus-tending ants. *Oikos* 116: 500-512
- **Miller, T.E.X.** 2007. Demographic models reveal the shape of density dependence for a specialist insect herbivore on variable host-plants. *Journal of Animal Ecology* 76: 722-729

2006

- **Miller, T.E.X.,** A.J. Tyre, and S.M. Louda. 2006. Plant reproductive allocation predicts herbivore dynamics across spatial and temporal scales. *American Naturalist* 168: 608-616

AWARDS AND DISTINCTIONS

- Will Rice College “Favorite Professor” honoree, 2017
- “Favorite Professor” of Rice student-athlete, 2013
- *American Naturalist* Best Student Paper Award, 2009
- Folsom Distinguished Dissertation Award, University of Nebraska, 2008 (university-wide award for outstanding doctoral research)
- U.S. Department of Agriculture National Research Initiative, Post-doctoral fellowship, 2007-2010
- U.S. Department of Education, Graduate Assistance in Areas of National Need (GAANN) Fellowship, 2002-2007
- University of Nebraska Maude Fling Fellowship, 2006-2007 (declined)
- University of Nebraska Bukey memorial graduate fellowship, 2006-2007 (university-wide fellowship for finishing PhD student)
- Christopher Oberheim Memorial Award for biology students showing great promise in research. Colgate University, 2002
- President, Beta Beta Beta Biological Honor Society. Colgate University Chapter, 2001-2002
- Student representative, search committee for plant/animal interactions faculty position, Colgate University, 2001
- Trimmer Prize for excellence in scientific composition, Colgate University, 2001
- Undergraduate Research Fellow (REU), Bermuda Biological Station for Research, 2000

WORKING GROUP PARTICIPATION

- Invited participant, NCEAS synthesis working group, Identifying environmental drivers of plant reproduction across LTER sites. 2021-2022;
- Co-leader, New mathematical theory to understand the effects of evolution on range expansion, Fields Institute for Research in Mathematical Sciences, June 2022

- Invited participant, NSF-funded workshop to identify new directions in ecological theory, Penn State University, October 2019
- Co-leader, Data and theory synthesis to resolve the effects of evolution on the predictability of range expansion, Canadian Institute for Ecology and Evolution, September 2018
- Invited participant, Integro-difference equations in Ecology working group, Banff International Research Station, September 2016
- Invited participant, NSF-funded workshop to identify and prioritize directions for long-term ecological research in the U.S., Kellogg Biological Station, February 2015

INVITED SEMINARS

- Ohio State University, Department of Biology, January 2022
- University of Georgia, Department of Plant Biology, February 2021
- Oklahoma State University, Department of Biology, October 2020
- Ecological Society of America Annual Meeting, Salt Lake City, UT, August 2020 (organized symposium: Biodiversity Loss in the Face of Global Change: Models & Data)
- University of Michigan, Department of Ecology and Evolutionary Biology, April 2020
- Case Western Reserve University, Department of Biology, February 2020
- American Society of Naturalists Symposium, January 2020
- Cornell University, Department of Ecology and Evolutionary Biology, October 2019
- University of Arizona, Department of Ecology and Evolutionary Biology, April 2019
- University of Miami, Department of Biology, April 2019
- University of Tennessee – Knoxville, EEB Departmental seminar, October 2018
- Northwestern University / Chicago Botanic Gardens, March 2018
- Rutgers University – Cambden, March 2018
- University of British Columbia, Biodiversity Research Center, October 2017
- Ecological Society of America Annual Meeting, Portland, OR, August 2017 (invited lecture on long-term ecological research)
- Keynote speaker, Houston Regional Ecology and Evolution Symposium, May 2017
- University of Nebraska, School of Biological Sciences, March 2017
- EVENET conference (Ghent, Belgium), Keynote lecture, December 2016
- Evolutionary Demography Society Annual Meeting, Invited Lecture, October 2016
- Banff International Research Station, Integrodifference Equations in Ecology workshop, September 2016
- University of New Mexico Sevilleta Field Station, May 2016
- College of William and Mary, Department of Biology, November 2015
- Ecological Society of America Annual Meeting, Baltimore, August 2015 (Organized oral session on Allee effects)
- University of New Mexico Sevilleta Field Station, May 2015

- Sam Houston State University, Department of Biology, February 2015
- University of Georgia, Odum School of Ecology, September 2014
- Botanical Society of America Annual Meeting, Symposium on modeling plant reproductive strategies, Boise, ID, July 2014
- University of New Mexico, Department of Biology, January 2014
- Michigan State University, Department of Ecology, Evolution, and Organismal Biology, November 2013
- Kellogg Biological Station, November 2013
- Ecological Society of America Annual Meeting, Minneapolis, August 2013 (Organized oral session on sex-structured population dynamics)
- Ecological Society of America Annual Meeting, Minneapolis, August 2013 (“Ignite” session on eco-evolutionary dynamics)
- University of New Mexico Sevilleta Field Station, May 2013
- Louisiana State University (Department of Biology), November 2012
- ETH Zurich (Institute for Integrative Biology), June 2012
- Texas A&M University (Dept. Ecosystem Science and Management), November 2011
- University of Houston (Dept. of Biology and Biochemistry), October 2011
- Iowa State University (Dept. of Ecology, Evolution, and Organismal Biology), September 2011
- Ecological Society of America Annual Meeting, Austin, Texas, August 2011 (Organized oral session on spatial spread dynamics)
- Sevilleta Long-Term Ecological Research Site, May 2011
- National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, April 2011
- University of Oklahoma (Dept. of Botany and Microbiology), March 2011
- Mathematical Biosciences Institute Workshop (Ohio State University), Ecology and Control of Invasive Species, February 2011
- Virginia Commonwealth University (Dept. of Biology), February 2011
- University of Iowa (Dept. of Biology), February 2011
- University of Florida (Depts. of Biology and Entomology), October 2010
- Texas A&M University (Dept. of Entomology), September 2010
- University of British Columbia (Dept. of Zoology), January 2010
- Portland State University (Dept. of Biology), January 2010
- Florida State University (Dept. of Biological Science), November 2009
- New Mexico State University (Dept. of Biology), May 2009
- Rice University (Dept. of Ecology and Evolutionary Biology), March 2008
- University of Texas – Austin (Dept. of Integrative Biology), Feb. 2008
- Mississippi State University (Dept. of Biology), Nov. 2007
- Florida State University (Dept. of Biological Science), Oct. 2007
- University of Nebraska (School of Biological Sciences), Apr. 2007

- University of Nebraska (Dept. of Mathematics), Mar. 2007
- University of Nebraska (Ecology, Evolution, and Behavior Group), Sep. 2006
- Sevilleta LTER Summer Seminar, Jul. 2006
- Nebraska Interdisciplinary Science Symposium, Sep. 2005

CONTRIBUTED TALKS

- Ecological Society of America Annual Meeting, New Orleans, Aug. 2018
- Evolutionary Demography Society, Amsterdam, Oct. 2015
- Ecological Society of America Annual Meeting, Baltimore, Aug. 2015
- Evolutionary Demography Society, Odense, Denmark, Oct. 2013
- Ecological Society of America Annual Meeting, Portland, Oregon, Aug. 2012
- Ecological Society of America Annual Meeting, Pittsburgh, Pennsylvania, Aug. 2010
- Ecological Society of America Annual Meeting, Albuquerque, New Mexico, Aug. 2009
- Ecological Society of America Annual Meeting, San Jose, California, Aug. 2007
- Ecological Society of America Annual Meeting, Memphis, Tennessee, Aug. 2006
- Ecological Society of America Annual Meeting, Montreal, Canada, Aug. 2005
- University of Nebraska Graduate Student Symposium, Feb. 2005
- Sevilleta LTER Annual Research Symposium, Jan. 2005
- University of Nebraska Graduate Student Symposium, Feb. 2004

TEACHING EXPERIENCE

- Invited instructor, Enhancing Linkages between Mathematics and Ecology (ELME) summer courses, Kellogg Biological Station (2014, 2015, 2018)
- BIOS 332 Ecology (2015-present)
- Rice EEB graduate core course (coordinator and 3-4 lectures per year; 2010 – present)
- Insect Biology, Rice University, Spring 2010, Fall 2010, Fall 2012, Fall 2013
- Insect Biology Lab, Rice University, Spring 2010 and Fall 2010
- Plant Diversity, Rice University, Spring 2009
- Guest lecturer: Introductory Biology, Florida State University, 2008
- Instructor: Ecological Interactions (co-taught with advisor), UN-L, Fall 2006
- Teaching assistant: Introductory Biology, University of Nebraska, Spring 2006
- Writing Tutor: The Writing Center, Colgate University, 2001-2002
- Teaching assistant: Ecology, Colgate University, 2000-2002

GRADUATE STUDENTS

- Zarek Contreras (current PhD student, 2022 – present)
- Alexandra Campbell (current PhD student, 2020 – present)
- Joshua Fowler (current PhD student, 2018 – present)

- Marion Donald (PhD 2020)
- Emily Schultz (PhD 2018, NSF-GRFP recipient)
- Brad Ochocki (PhD 2017, NSF-DDIG recipient)
- Andrew Bibian (MA 2015, NSF-GRFP recipient)
- Michelle Downey (MS 2015)
- Michelle Sneek (PhD 2017)

POSTDOCS

- Aldo Compagnoni (2013 – 2017)
- Tingfa Dong, Chinese Science Council Fellow (2019 –2020)

GRADUATE COMMITTEE SERVICE

- Shannon Lynch (University of Kansas)
- Drake Mullet (Chicago Botanic Garden)
- Hengxing Zou (Rice EEB)
- Lauren Howe-Kerr (Rice EEB, PhD 2021)
- Zoey Neale (Rice EEB)
- Xinhao Song (Rice BCB)
- Eric Barefoot (Rice EEB, PhD 2021)
- Joshua Lynn (University of New Mexico, PhD 2019)
- Hannah Locke (University of Houston Biology and Biochemistry, PhD 2021)
- Katrien Van Petegem (Ghent University, PhD 2016)
- Kim Gonzalez (Rice BCB, PhD 2019)
- Linyi Zhang (Rice EEB, PhD 2021)
- Andrea Drager (Rice EEB, PhD 2020)
- Shannon Carter (Rice EEB, PhD 2020)
- Patrick Clay (Rice EEB, PhD 2019)
- Anny Chung (University of New Mexico, PhD 2017)
- Donald Rogers (Rice Statistics, M.S. 2016)
- Ben Van Allen (Rice EEB, PhD 2013)
- Brian Maitner (Rice EEB)
- Juli Carillo (Rice EEB, PhD 2013)
- Nick Rasmussen (Rice EEB, PhD 2014)
- Christopher Dibble (Rice EEB, PhD 2014)
- Sayantani Dastidar (University of Houston Biology and Biochemistry)
- Dayne Jordan (University of Houston Biology and Biochemistry)

TECHNICIANS SUPERVISED

- Nicole Freidenfelds 2011-2012 (Snyder et al. 2014; currently high school biology teacher)
- Teresa Bohner 2012-2014 (currently in PhD program at UC-Riverside)
- Marion Donald 2014-2015 (currently in PhD program at Rice)
- Kory Kolis 2015-2016 (currently in PhD program at U. Montana)
- Michael Saucedo 2018-2019
- Kyle Dickens 2020
- Jessica Su 2021
- Bell Scherick 2022
- Karl Schrader 2022-

UNDERGRADUATE RESEACH MENTORSHIP

- Bell Scherick, BIOS 310
- Sar Lindner, REU 2022
- Alden Sears, BIOS 403-404, 2021-22
- Blaise Willis, REU 2021
- Toni Jordan-Millet, BioSciences Summer Fellow, BIOS 310, 2021
- Arinze Appio-Riley, SURF Fellow, 2021
- Ava Johnson, BIOS 310, 2020-2021
- Jessica Su, BIOS 310, 2021
- Lani DuFresne, REU 2020, BIOS 403-404, 2021
- Ella Segal, REU 2020, BIOS 403-404, 2021
- Kyle Dickens, REU 2019
- Andressa Viol, EBIO 306, 2018-2019
- Trevor Drees, EBIO 306, 403/404, 2017-2019 (currently in Ph.D. program at Penn State)
- Ceyda Kural, REU 2018, EBIO 306 (currently in Ph.D. program at U. Kansas)
- Nakian Kim, EBIO 306, 403/404 2016-2018 (currently in Ph.D. program at U. Illinois)
- Jordan Graves, BioSciences summer research intern, 2018
- Citlali Villareal, EBIO 306, 2018
- Kathy Yu, EBIO 306, 2018
- Michael Saucedo, EBIO 403/404, 2017
- Kevin Czachura, EBIO 403/404, 2015-17 (Czachura and Miller *in review*)
- Belle Harris, REU 2016, EBIO 403/404, 2016-17
- Miranda Zapata, EBIO 306, 403/404, 2015-17
- Charlene Thomas, REU 2015, EBIO 306, 403/404, 2014-16
- Gina Lightner, EBIO 306, 2016
- Kira Klingen, EBIO 403/404, 2015-16 (currently a Watson fellow)
- Evan Shegogg, EBIO 306, 2014-15

- Amanda Weaver, EBIO 306, 2015
- Brittany Cavazos, REU 2014 and EBIO 306, 403/404 (currently in Ph.D. program in Ecology at Iowa State University, Cavazos et al. 2018)
- Rachel Hodge, Rice Century Scholar, 2013-2015
- Marisol Palomares, EBIO 306, 403/404, 2013-2015
- Emily Begnel, EBIO 306, 403/404, 2012-2015
- Natalie Wagner, EBIO 306, 403/404, 2012-2014 (currently in Ph.D. program in Ecology at Colombia University; Wagner *et al.* 2016)
- Jesse Passman, EBIO 306, 403/404, 2012-2014 (currently in medical school)
- Adam Geiger, EBIO 306, 403/404, 2011-2014 (currently a Rice EEB lab technician, Downey et al. 2015)
- Olivia Ragni, EBIO 306, 403/404, 2012-2014 (currently in medical school)
- Marion Donald, EBIO 306, 403/404, 2012-2014 (currently in Ph.D. program in Ecology at Rice University)
- Rande Patterson, REU 2013, EBIO 306, 403/404, 2011-2014 (currently environmental consultant)
- Sunil Bellur, EBIO 306, 2011-2012 (Downey et al. 2015)
- Johanna Ohm, EBIO 306, 403/404, 2011-2013 (Ohm and Miller 2014, Downey et al. 2015, currently in PhD program in Ecology at Penn State)
- Rebecca Searle, EBIO 306, 403/404, 2011-2013 (Downey et al. 2015)
- Tatiana Fofanova, EBIO 403/404, 2011/12
- Kate Snyder, EBIO 403/404, 2011/12 (Snyder et al. 2014, currently PhD student at Vanderbilt)
- Kelsey Yule, EBIO 403/404, co-advised with J. Rudgers, 2010/2011 (Yule et al. 2013, currently in PhD program in Ecology at University of Arizona)
- Meredith Robbins, Florida State University senior thesis, 2007/8 (Robbins and Miller 2009, currently in veterinary school at University of Florida)
- Alejandro Benhumea, Sevilleta LTER REU, University of Texas – El Paso, 2006
- Andrew Rominger, Sevilleta LTER REU, Stanford University, 2006 (Rominger et al. 2009, oral presentation at ESA 2009, currently in PhD program in Ecology at UC-Berkeley)
- Rene Aguilera, Sevilleta LTER REU, University of New Mexico, 2005

HIGH SCHOOL STUDENT MENTORSHIP

- Emily Chang (2022)
- Adriana Yanez (2021)
- Jocelyn Goodman (2018)
- Adriana Yanez (2018)
- Tommy Villalva (2016)

- Phillip Tan (2015)

UNIVERSITY SERVICE

- Director of Graduate Studies, Program in Ecology and Evolutionary Biology (2012 – 2014, 2016-present)
- BioSciences Seminar Committee (2018-present)
- Rice University Committee on Undergraduate Curriculum (2016 - 2019)
- Rice University Arboretum Committee (2012 – present)
- Chair, Huxley search committee (2016)
- Member, BioSciences faculty search committee (2016)
- Chair, Huxley search committee (2013)
- Chair, Faculty search committee (2013/14)
- Biochemistry and Cell Biology faculty search committee (2013)
- Member, Huxley search committee (Spring 2015)
- EEB seminar committee (2012-)

PROFESSIONAL SERVICE

- Editorial board: *Ecology* (2013 - present)
- Editorial board: *American Naturalist* (2016 - present)
- Invited instructor, Enhancing Linkages between Mathematics and Ecology, Kellogg Biological Station, 2014, 2015, 2018
- Sevilleta LTER Diversity, Equity, and Inclusion committee
- Co-organizer (with M. Evans and E. Schultz) of Organized Oral Session on Demographic Mechanisms of Range Limits, ESA meeting 2021
- External reviewer: Washington University – St. Louis, Graduate Program in Ecology and Evolutionary Biology
- Invited workshop: Bayesian approaches to structure population models, Evolutionary Demography Society annual meeting, January 2019
- Invited instructor, Enhancing Linkages between Mathematics and Ecology (ELME) summer course, Kellogg Biological Station (2014, 2015, 2018)
- Vice-chair (2009-2010), Plant Population Ecology section of the Ecological Society of America
- Grant proposal review service:
National Science Foundation Division of Environmental Biology panelist (Population and Community Ecology and Evolutionary Ecology): 2008, 2011, 2012, 2014, 2016, 2017 (x2)
NSF *ad hoc* reviewer
Binational Agricultural Research and Development Fund
Swiss National Science Foundation

- Co-organizer (with J. Williams) of Organized Oral Session on Ecology and Evolution of Range Expansion, ESA meeting 2017
- Co-organizer (with R. Salguero-Gomez, E. Jongejans, and N. Fowler) of Organized Oral Session on Integral Projection Modeling, ESA meeting 2015
- Co-organizer (with H. Caswell, M. Neubert, and A. Shaw) of Organized Oral Session on Sex-structured population dynamics, ESA meeting 2013
- Reviewer for:
Acta Oecologia, American Naturalist, Annals of Botany, Austral Ecology, Basic and Applied Ecology, Biological Invasions, Biological Journal of the Linnean Society, Ecological Entomology, Ecology, Ecology Letters, Evolutionary Ecology, Frontiers in Ecology and the Environment, Journal of Applied Entomology, Journal of Animal Ecology, Journal of Ecology, Journal of Arid Environments, Journal of Theoretical Biology, Landscape Ecology, Methods in Ecology and Evolution, New Phytologist, Oecologia, Oikos, Plant Biology, Plant Ecology, PLOS Biology, PLOS One, Proceedings of the National Academy of Sciences of the USA, Proceedings of the Royal Society B
- Professional Societies: Ecological Society of America (including membership in the Plant Population Ecology section); American Society of Naturalists; American Association for the Advancement of Science; Sigma Xi