MARK GENUNG

Rutgers University
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POSITIONS

University of Louisiana, Lafayette
Assistant Professor; Department of Biology (beginning Jan 2019)

Rutgers University
Postdoctoral Associate; Ecology, Evolution and Natural Resources (2014-present)
Advisor: Rachael Winfree

University of Tennessee
Instructor, Division of Biology (2014)
Postdoctoral Associate, Ecology and Evolutionary Biology (2012-2014)
Advisor: Joseph Bailey

EDUCATION

University of Tennessee
PhD, Ecology and Evolutionary Biology, concentration Ecology, 2012
Advisors: Jennifer Schweitzer and Joseph Bailey

University of Tennessee
BS, Biology, concentration Ecology and Evolutionary Biology, 2007

PUBLICATIONS

Publication impact Google Scholar (citations 278, h index 9)

19. **Genung MA**, JW Fox, NM Williams, C Kremen, JS Ascher, J Gibbs, R Winfree (2017). The relative importance of pollinator abundance and species richness for the temporal variance of pollination services. *Ecology*, 98:1807-1816.

18. Mueller LO, LC Breza, **MA Genung**, CP Giardina, NE Stone, LC Sidak-Loftis, JD Busch, DM Wagner, JK Bailey, JA Schweitzer (2017). Ecosystem consequences of plant genetic divergence with colonization of new habitat. *Ecosphere*, 8:5.

17. Souza L, K Stuble, **MA Genung**, AT Classen (2017). Plant genotype identity and intra-specific diversity trump soil nutrient availability to shape old-field structure and function. *Functional Ecology*, 31:965-974.

16. MacLeod M* & **MA Genung***, J Ascher, R Winfree (2016). Measuring partner choice in plant–pollinator networks: Using null models to separate rewiring and fidelity from chance. *Ecology*, 97:2925-2931. * – equal contribution; MAG corresponding author

15. **Genung MA**, JK Senior, J O'Reilly-Wapstra, SK Chapman, A Langley, JA Schweitzer, JK Bailey (2014) When ranges collide: Evolutionary history, phylogenetic community interactions, global change factors and range size differentially affect plant productivity. *Advances in Ecological Research*, 50:297-350.

14. **Genung MA**, JA Schweitzer, N Omomo, JK Bailey (2014) The effects of phylogenetic diversity and species richness on ecosystem function are dependent upon evolutionary history. *PeerJ,* 2:e288.

13. Gorman CE, QD Read, ME Van Nuland, JAM Bryant, JN Welch, JT Altobelli, MJ Douglas, **MA Genung**, and 7 others (2014) Below-ground communities: Phylogenetic similarity aboveground leads to community similarity belowground through conservatism of functional traits. *AoB Plants*, 5:plt049.

12. Burkle LA, L Souza, **MA Genung**, GM Crutsinger (2013) Plant genotype, nutrients, and G x E interactions structure floral visitor communities. *Ecosphere*, 4:art119.

11. Bailey JK, **MA Genung**, I Ware, CE Gorman, M Van Nuland, H Long, JA Schweitzer (2013) Indirect genetic effects: An evolutionary mechanism linking feedbacks, genotypic diversity, and coadaptation in a climate change context. *Functional Ecology*, 28:87-95.

10. **Genung MA**, JK Bailey, JA Schweitzer (2013) Belowground interactions shift the relative importance of direct and indirect genetic effects. *Ecology and Evolution*, 3:1692-1701.

9. Bailey JK, RK Bangert, **MA Genung**, JA Schweitzer, and GM Wimp (2013) Community Ecology. In "Berkshire Encyclopedia of Sustainability: Ecosystem Management and Sustainability". Berkshire Publishing Group, Great Barrington, MA, USA.

8. **Genung MA**, JK Bailey, JA Schweitzer (2013) The afterlife of interspecific indirect genetic effects: Genotype interactions alter litter quality with consequences for decomposition and nutrient dynamics, *PLOS ONE*, 8:e53718.

7. **Genung MA**, JK Bailey, JA Schweitzer (2012) Welcome to the neighborhood: Interspecific genotype interactions influence above- and belowground biomass and associated communities, *Ecology Letters*, 15:65-73.

6. Bailey JK, **MA Genung**, J O'Reilly-Wapstra, BM Potts, J Rowntree, JA Schweitzer, TG Whitham (2012) New frontiers in community and ecosystem genetics for theory, conservation, and management. *New Phytologist*, 193:24-26.

5. Lessard J-P, WN Reynolds, WA Bunn, **MA Genung**, and 11 others (2012) Conservation of effect strength through understory, litter, and soil communities following deer herbivory. *Basic and Applied Ecology,* 13:59-66.

4. **Genung MA**, GM Crutsinger, JK Bailey, JA Schweitzer, NJ Sanders (2012) Spatial patterns of aphid abundance depend on plant genotype and genotypic diversity, *Oecologia*, 168:167-174.

3. **Genung MA**, JA Schweitzer, F Ubeda, BM Fitzpatrick, CC Pregitzer, E Felker-Quinn, JK Bailey (2011) Genetic variation and community change – selection, evolution, and feedbacks, *Functional Ecology*, 25:408-419. Invited to "Plant-Herbivore Interactions" Special Feature.

2. Bailey JK, JA Schweitzer, F Ubeda, M Zinkgraf, BM Fitzpatrick, J O'Reilly-Wapstra, BJ Rehill, CJ LeRoy, BM Potts, TG Whitham, **MA Genung**, DG Fischer, CC Pregitzer, A Keith (2011) From genes to ecosystems: emerging concepts bridging ecological and evolutionary dynamics, invited to "The ecology of plant secondary metabolites: from genes to landscapes" (*eds*. GR Iason, M Dicke, and SE Hartley), Cambridge University Press, Cambridge, UK.

1. **Genung MA**, JP Lessard, CB Brown, WA Bunn, MA Cregger, WN Reynolds, E Felker-Quinn, ML Stevenson, AS Hartley, GM Crutsinger, JA Schweitzer, JK Bailey (2010) Non-additive effects of genotypic diversity affect floral abundance and abundance of floral visitors, *PLOS ONE* 5, e8711.

In advanced preparation

Genung MA, JW Fox, R Winfree. Dominance predicts whether species loss matters for ecosystem function.

MacLeod M, J Reilly, **MA Genung**, M Roswell, J Gibbs, R Winfree. Rare and crop-pollinating bee species prefer different plants.

GRANT AND AWARDS

2018-2020 NSF, Population and Community Ecology. SG: Synthetic analysis of the importance of species richness to ecosystem services in real-world systems. PI: M Genung, Co-PI: R Winfree. $150,000.

2016-2017 NSF, Population and Community Ecology. REU: The role of species dominance in mediating biodiversity-ecosystem function relationships across spatial scales. PI: R Winfree, Sr. Personnel: M Genung. $7,500 (2017) and $12,148 (2018). *REU Supplements for existing NSF grant.*

2014-2015 Associate Faculty Member, Faculty of 1000

2012 Best Publication by a Graduate Student (Genung et al. 2012, *Ecology Letters*) UTK Ecology and Evolutionary Biology Dept.

2011 Exceptional Progress by a Graduate Student, UTK EEB Dept.

2010-2013 UTK Libraries, 4 Open Access Publishing Grants, total $3,900.

INVITED TALKS

University of Louisiana, Lafayette, Biodiversity and ecosystem function in real-world systems (Feb 2018)
Fordham University, Evenness predicts the importance of species loss for ecosystem services, Department of Biological Sciences (Mar 2017)
International Congress of Entomology (Orlando), Measuring partner choice in plant – pollinator networks, Biology of Wild and Native Bees symposium (Oct 2016)
Princeton University, Pollinator abundance, not species richness, drives the temporal variability of pollination function, Kocher Lab (Aug 2016)
Princeton University, Biodiversity and ecosystem function at large scales (Apr 2016)
Rutgers University, Improving realism in biodiversity-ecosystem function research, Department of Ecology, Evolution, and Natural Resources (Sep 2015)
Doñana Biological Station (Seville, Spain), Using the Price equation to understand the temporal dynamics of pollination function (Dec 2014)
BES-SFE Annual Meeting (Lille, France), The Price equation and ecosystem functioning: Dominant pollinators determine the temporal stability of ecosystem services (Dec 2014)
Villanova University, From genotypes to landscapes: Plant-pollinator interactions at multiple scales, Department of Biology (Nov 2014)
University of Pennsylvania, From genotypes to landscapes: Plant-pollinator interactions at multiple scales, EcoLunch Speaker Series (Oct 2014)
Rutgers University, The hierarchy of biodiversity and ecosystem function (Feb 2014)
Oak Ridge National Laboratory, The hierarchy of biodiversity and ecosystem function, Environmental Sciences Division (Oct 2013)
International Botanical Conference (Melbourne, Australia), Ecological and evolutionary consequences of genotype-based plant-neighbor interactions (Jul 2011)

RECENT CONTRIBUTED TALKS

Ecological Society of America (Portland, OR), Evenness predicts the importance of species loss for ecosystem services (Aug 2017)
Ecological Society of America (Baltimore, MD), Using the Price equation to understand ecosystem service stability in real-world systems (Aug 2015)

RELEVANT SKILLS

Field Ecology: pollination methods (advanced), Eastern US bee identification (intermediate)
Programming: R (advanced), simulation models (advanced), SAS (intermediate), Git (basic)
Mathematical ecology: Price equation (expert), null models (expert), numerical ecology (advanced), linear and matrix algebra (advanced), network analysis (intermediate)

TEACHING AND MENTORING

Instructor

General Ecology (U. of Tennessee, 2014) Sole responsibility for all lectures, exams, laboratories and supervision of 5 TAs for >100 undergraduate students

Seminar in Evolutionary Ecology (U. of Tennessee, 2013) Focus on indirect genetic effects, responsible for syllabus, discussions and student evaluation

Seminar in Community Ecology (U. of Tennessee, 2012) Focus on community genetics, responsible for syllabus, discussions and student evaluation

Ecosystem Ecology Lab (U. of Tennessee, 2010) Field and laboratory course, responsible for syllabus, field trips, teaching laboratory techniques/procedures, and student evaluation

Guest Lectures

Rutgers University
Global Change Biology, Conservation Biology, 2018
Null Models, Advanced Data Analysis, 2017
Bootstrapping, Advanced Data Analysis, 2017
Community Ecology, Core Ecology for Graduate Students, 2016
Herbivory and Plant-Soil Feedbacks, Core Ecology for Graduate Students, 2016

University of Tennessee
Hardy-Weinberg and Types of Selection, Biodiversity, 2013
Conservation Biology, General Ecology, 2010, 2011, 2012
Biogeography, General Ecology, 2011
Indirect Interactions, General Ecology, 2011
Genetic Variation and Carbon Cycling, Ecosystem Ecology, 2010
Range-Expanding Species and Ecosystems, Ecosystem Ecology, 2010
Conservation Biology, General Ecology, 2010
Community and Ecosystem Genetics, Community Ecology, 2009
Multivariate Analysis of Community Data, Community Ecology, 2009

Mentoring

Graduate students	*Current position*
Lucia Weinman (2017-present)	PhD student at Rutgers
Michael Roswell (2014-current)	PhD student at Rutgers
Colleen Smith (2014-current)	PhD student at Rutgers
Molly MacLeod (2014-2015)	Senior Manager in Science Content at Pfizer
Michael Van Nuland (2013-2014)	Postdoc at Stanford
Liam Mueller (2013-2014)	PhD student at the University of Tennessee
Ian Ware (2013-2014)	PhD student at the University of Tennessee

Research technicians	*Current position*

Erin Lowe (2016-2017)	Masters student at U. of Wisconsin, starting 2017
Lucia Weinman (2016-2017)	PhD student at Rutgers, starting 2017
Tiffany Bennett (2017-present)	Forester at Gracie and Harrigan (private consulting)
Julia Criscione (2017-present)	Entomology specialist (Winfree/Genung NSF project)

Undergraduate students	*Additional information*
Kiara Londono (start summer '18)	REU mentee 2018
Casey Hamilton (start summer '18)	REU mentee 2018
Alexandra Matthews (2016-current)	Gates Millennium Scholar, REU mentee 2017
Shermila Villanueva (2016-2017)	
Kiya Washington (2016-2017)	
Hannah Long (2012-2013)	Presented poster at ESA Annual Meeting in 2013
Nicole Hergott (2008-2010)	Currently Ph.D. student at U. of Tennessee
Logan Elmore (2008-2009)	M.S. from Utah State U. in 2014

SERVICE AND OUTREACH

- Scientific advisor for NJ Senate (August 2016 – ongoing)

  I attend policy- and science-focused meetings for an NJ state senator and advised on pollinator health. Other attendees include NJ Audubon Society and industry representatives for chemistry and agriculture. Three bills are in progress, two of which are approved by all parties and we are working on compromises to make the third bill acceptable. Please contact me for more details.

- NSF-funded Biology Curriculum Reform Committee, Univ. of Tenn. (2013-2014)

- STEM careers for rural East Tennessee Girls' Science Clubs (Sunbright TN, 2013)

  Along with other graduate students and postdocs, I organized opportunities for all-girls science clubs from rural schools to visit the University of Tennessee campus, learn about careers in STEM, and conduct their own research projects using an experimental array of plants that I had established for my dissertation work.

- Graduate Student Member, Graduate Affairs Committee, University of Tennessee Department of Ecology and Evolutionary Biology (2011-2012)

Peer Review

In the past two years, I have reviewed papers for *Nature, Science, Nature Communications, Ecology Letters, New Phytologist,* and *Functional Ecology*, among others.