

**EDUCATION**

**Rutgers University** Ph.D. Ecology & Evolution 2020  
Committee: Rachael Winfree (Adviser), Olaf Jensen, Malin Pinsky, Jonathan Dushoff  
**Swarthmore College** BA, Majors in Biology and Linguistics 2011

**SCIENTIFIC MANUSCRIPTS**

Cariveau, D. P., **Roswell, M.**, Harrison, T., Genung, M. A., Gibbs, J., & Winfree, R. . Pollinator habitat plantings benefit wild, native bees, but do not necessarily favor rare species. *BioRxiv* Preprint: doi:<https://doi.org/10.1101/2021.05.24.445524>

Simpson, D., L. Weinman, M. Genung, **M. Roswell**, M. MacLeod, and R. Winfree. Many species, including rare species, are important for function of mutualist networks. *In review, Proceeding of the Royal Society B*. Preprint: <https://10.22541/au.160742276.65729145/v1>

**Roswell, M.**, Dushoff, J, Winfree, R. A conceptual guide to measuring species diversity. *Oikos*. 2021; 130(3), 321–338. <https://doi:10.1111/oik.07202>

MacLeod M., J. Reilly, D. Cariveau, M. Genung, **M. Roswell**, J. Gibbs, and R. Winfree. How much do rare and crop-pollinating bees overlap in identity and flower preferences? *Journal of Applied Ecology*. 2020; 57(2), 413–423. <https://doi.org/10.1111/1365-2664.13543>

**Roswell M.**, Dushoff J, Winfree R. “Male and female bees show large differences in floral preference.” *PLoS One*. 2019; 14: e0214909. <https://doi:10.1371/journal.pone.0214909>

**GRANTS (\$46,200) & FELLOWSHIPS (\$258,000)**

Earth, Ocean, and Atmospheric Science Seed Grant (Data Club expansion)	2019	\$6,000
Rutgers Ecology & Evolution Graduate Program Small Grant	2016	\$1,000
Federal Conservation Innovation Grant (addendum to existing grant, <i>Next steps in pollinator conservation...</i> PI M. Vaughn, Co-PI R. Winfree & others)	2015	\$33,000
Rutgers University Graduate School Conference Travel Award	2015	\$200
Rutgers University SEBS Graduate Pre-Dissertation Award	2015	\$2,000
Rutgers University Graduate School Excellence Fellowship	2014	\$30,000
NSF Graduate Research Fellowship (stipend + scholarship)	2014	\$138,000
NSF GAANN Fellowship in Urban Ecology (declined)	2014	\$90,000
NY Times Sustainability Grant (awarded to found college Honey Bee Initiative)	2009	\$500
Joel Dean Fellowship (awarded to research dying language in Peruvian Amazon)	2009	\$3,500

**SOFTWARE**

Roswell M, Dushoff J. MeanRarity: Hill Diversity Estimation and Visualization (R package). 2020. <https://github.com/mikeroswell/MeanRarity>

**PRESENTATIONS**

**Roswell, M.** “Rarity and Native bees” (Invited Seminar). Dept. of Entomology Seminar Series, University of MD, Oct. 2020.

Genung, M., T. Harrison, **M. Roswell**, and R. Winfree “Hill Numbers and Ecosystem Function” (Talk). Ann. meeting, Ecological Society of America, Aug. 2020

**Roswell, M.**, R. Winfree, and J. Dushoff. “Seeing Hill numbers as mean rarity” (Talk). Ann. meeting, Ecological Society of America, Aug. 2019

Londono, K., **M. Roswell**, and M. Genung. “Floral architecture and bee behavior determine whether a

flower visitor is an effective pollinator” (Poster). Ann. meeting, Ecological Society of America, Aug. 2019

**Roswell, M.**, and R. Winfree. “Male and female bees visit different flower species” (Talk). Ann. meeting, Ecological Society of America, Aug. 2017

**Roswell, M.**, D.P. Cariveau, and R. Winfree. “The importance of unequal sampling for estimating species richness” (Talk). Ann. meeting, Ecological Society of America, Aug. 2015

**Roswell, M.**, D.P. Cariveau, and R. Winfree. “Variability reduces effort required to compare site biodiversity” (Poster). Ann. meeting, Ecological Society of America, Aug. 2014

Cariveau, D.P., N. Williams, K. Ward, **M. Roswell**, et al. “How to assess pollinator restorations efficiently” (Poster). Int’l Conf. on Pollinator Biology, Health and Policy, Aug. 2013

**Roswell, M.**, and J. Harte. “Size matters for detecting spatial patterns of climate-driven competition” (Poster). Ann. meeting, Ecological Society of America, Aug. 2011

### TECHNICAL PUBLICATIONS & BOOK REVIEWS

**Roswell, M.** (2019). Protecting Pollinators: How to save the creatures that feed our world. *Ecological Restoration*, 37(4), 280.

Ward, K, D Cariveau, E May, **M Roswell**, et al. 2014. *Streamlined Bee Monitoring Protocol for Assessing Pollinator Habitat*. Portland, OR: The Xerces Society for Invertebrate Conservation.

The Municode Talking Dictionary- an online “talking” lexicon with both Municode- Spanish and Municode- English interfaces. June 2011. Available online at <http://municode.swarthmore.edu>

Una breve descripción del idioma Municode: Yurimaguas, Peru, August 2009. Available online at [http://www.cabeceras.org/cap\\_my\\_r\\_gramatica\\_sep09.pdf](http://www.cabeceras.org/cap_my_r_gramatica_sep09.pdf)

### TEACHING

Lecturer, Rutgers University	“Pollination Ecology”	Proposed, developed, taught upper-level, 4-credit course with programming in R	S2019
Adjunct Professor, Rider University	“General Ecology and Lab”	Developed and taught first half of upper-level, 4-credit ecology course	F2018
Lecturer, Millsaps College & Freedom Summer Collegiate	“Pollination Ecology”	Developed curriculum for and taught 2 sections of 2-credit ecology course	Jun 2017
Guest lecturer, Rutgers University	“Conservation ecology”		S2018
Guest lecturer, Rutgers University	“Agroecology”		S2018
Guest lecturer, Rutgers University	“Introduction to Apiculture”		S2017, S2018
Guest lecturer, Rutgers University	“Introduction to Environmental Science”		F2016, F2017
Guest lecturer, Rutgers University	“Plant Diversity and Evolution	Designed & graded pollination assignment ('15), traits and diversity assignment ('16)	F2015, F2016
Faculty mentor, Rutgers University	“FIGS”	Advised undergraduate instructor in development of 1-credit course	Jun-Dec 2016
Science Educator, Nature Bridge		Designed and taught 3-5 day outdoor	2014

## science courses

Scientist, Wondergy Inc.	Led 1-2 hour long interactive science explorations, up to 20 groups/week	2011-2013
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## OUTREACH

*Bees and Pollination.* Orion Lakes School District (workshop) – November 2020  
*Pollinator Party.* Baltimore Greenspace (lecture) – June 2020  
*Pollinators of HMF.* Hutcheson Memorial Forest Center (workshop) – Sep. 2019  
*Bees and Pollination.* Duke Farms Master Ecologists (workshop) – Sep. 2018  
*Does habitat enhancement benefit rare bees?* New Jersey Wildlife Society (lecture) – May 2018  
*Introduction to bees and pollination.* Master Gardeners of Passaic Co. (workshop) – Mar. 2018  
*Do male and female bees like different flowers?* Lord Stirling Env. Center (lecture) – Jan. 2018  
*Luring pollinators for lurid favors.* Master Gardeners of Monmouth Co. (lecture) – Feb. 2017  
*What are native bees?* Princeton Academy (workshop) – Dec. 2016  
*Wild bees can help with pollination concerns.* NJ Agricultural Convention (lecture) – Feb. 2016  
*Why Native Bees?* The Native Plant Society of Bergen Co. (lecture) – Nov. 2015  
*Asking questions about native bees.* Native Plant Society of NJ (keynote lecture) – Nov. 2014  
*Streamlined bee monitoring protocol ...* Duke Farms (workshop) – Jun. 2014  
*Pollinator Biodiversity.* Rutgers Gardens (lecture) – Sep. 2013

## MENTORING

*Professional reference* for former students and technicians; medical school, Ph.D., employment, NIH and Fulbright fellowship recommendations (2015-present)  
*Mentor* 12 undergraduates and technicians: assist with conference presentations, applying for jobs, fellowships, and graduate programs, securing funding for independent research, navigating degree and GPA. (2016-present)  
*Co-Adviser* for Honors Thesis: "Morphological trait matching between bees and flowers drives pairwise interactions." Guided lit. review, analysis, writing, presentation. (2015-2016)  
*Research Mentor* for 3 Rutgers undergraduates. (2014-2015)

## SERVICE

*Reviewer,* *American Journal of Botany; Annals of the Entomological Society of America; Ecology; Ecology Letters; Journal of Animal Ecology; Journal of Ecology; Natural Areas Journal; Rhodora; PLoS One; Royal Society Open Science*  
*Member,* Entomology Department Diversity, Equity, and Inclusion working group, *University of Maryland College Park* (2020-present)  
*Host,* 5 extramural speakers for departmental seminar series (2014-2019)  
*Reviewer,* New Jersey Junior Science & Humanities Symposium (2015-2018)  
• *Organizer,* graduate program "data club" (2016); co-developed as a graduate course (2019)  
*Volunteer,* Shore Bowl regional oceanography competition, *Rutgers University* (2016, 2017)

## PROFESSIONAL DEVELOPMENT

*Curriculum Workshop and Teaching Orientation,* Millsaps College (May 2017)  
*Introduction to College Teaching,* Rutgers University (Jan.-May 2017)

## LANGUAGE PROFICIENCY

English (Native); Spanish (Proficient); French (Conversational)