

Kelsey M. Yule

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EDUCATION

University of Arizona, Tucson, AZ, USA

- Ph.D. in Ecology and Evolutionary Biology with Minor in Statistics 2012 – 2018
 - Dissertation: Mistletoe-vector-host interactions:
From within-host processes to population genetic structure
 - Advisor: Dr. Judith Bronstein

Rice University, Houston, TX, USA

- B.S. in Ecology and Evolutionary Biology 2008 – 2011
 - *summa cum laude*
 - Advisors: Dr. Jennifer Rudgers & Dr. Thomas E.X. Miller

PROFESSIONAL APPOINTMENTS

Arizona State University, Tempe, AZ, USA

- NEON Biorepository Project Manager 2019 – present
 - Biodiversity Knowledge Integration Center
 - School of Life Sciences

Michigan State University, East Lansing, MI, USA

- Postdoctoral Research Associate 2018 – 2019
 - Department of Integrative Biology
 - Supervisor: Dr. Gideon Bradburd

PUBLICATIONS

REFEREED JOURNAL ARTICLES

- [7] **Yule, KM**, CA Johnson, JL Bronstein, and R Ferrière. (2020) Interactions among interactions: The dynamical consequences of antagonism between mutualists, *Journal of Theoretical Biology*, 501: 110334
- [6] Ålund, M, N Emery, BJM Jarrett, KJ MacLeod, HF McCreery, N Mamoozadeh, JG Phillips, J Schossau, AW Thompson, AR Warwick, **Yule, KM**, ER Zylstra, E Gering (2020) Academic ecosystems must evolve to support a sustainable postdoc workforce, *Nature Ecology Evolution*
- [5] **Yule, KM**, and JL Bronstein (2018) Intrapopulation size and mate availability influence reproductive success of a parasitic plant, *Journal of Ecology*, 106(5): 1972-1982
- [4] **Yule, KM**, and JL Bronstein (2018) Reproductive ecology of a parasitic plant differs by host species: vector interactions and the maintenance of host races, *Oecologia*, 186(2): 471-482
- [3] **Yule, KM**, JAH Koop, NM Alexandre, LR Johnston, and NK Whiteman (2016) Population structure of a vector-borne plant parasite, *Molecular Ecology*, 25(14): 3332-3343
- [2] **Yule, KM**, TEX Miller, and JA Rudgers (2013) Costs, benefits, and loss of vertically transmitted symbionts affect host population dynamics, *Oikos*, 122(10): 1393-1400
- [1] **Yule, KM**, JM Wooley, and JA Rudgers (2011) Water availability alters the tri-trophic consequences of plant-fungal symbiosis, *Arthropod-Plant Interactions*, 5(1): 19-27

PRE-PRINT ONLINE

- [2] **Yule, KM**, EE Gilbert, AP Husain, MA Johnston, L Rocha Prado, L Steger, NM Franz. (2020, June 5). Designing Biorepositories to Monitor Ecological and Evolutionary Responses to Change (Version 1). Zenodo. <http://doi.org/10.5281/zenodo.3880411>

IN PREPARATION (CONTACT FOR PDF)

- [2] **Yule, KM**. Selection works to maintain host-associated differentiation in parasite reproductive timing only in sympatry.
- [1] **Yule, KM**, CA Johnson, and R Ferrière. The influence of genetic architecture, constraints, and intraspecific density dependence on the adaptive dynamics of life-history traits.

EXTERNAL GRANTS	<ul style="list-style-type: none"> ▪ National Science Foundation, Doctoral Dissertation Improvement Grant, co-PI 2016 – 2018 \$ 19,955 PI: Dr. Judith Bronstein Title: Reinforcement of reproductive isolation of parasitic plant host races
	<ul style="list-style-type: none"> ▪ American Society of Naturalists, Student Research Award 2016 \$ 2,500
	<ul style="list-style-type: none"> ▪ Arizona Native Plants Society, Ginny Saylor Research Grant 2016 \$ 2,000
	<ul style="list-style-type: none"> ▪ Society for the Study of Evolution, Rosemary Grant Award for Graduate Student Research 2014 \$ 1,500
FELLOWSHIPS, AWARDS & INTERNAL GRANTS	<ul style="list-style-type: none"> ▪ PEO International, PEO Scholar Award 2017 \$15,000
	<ul style="list-style-type: none"> ▪ National Science Foundation Graduate Research Fellowship 2012 – 2017 Ecology \$ 100,000
	<ul style="list-style-type: none"> ▪ University of Arizona Graduate & Professional School Council Grants 2013 – 2017 \$ 6,225 in total
	<ul style="list-style-type: none"> ▪ University of Arizona College of Science Galileo Circle Scholar 2014 & 2016 \$ 4,000 in total
	<ul style="list-style-type: none"> ▪ University of Arizona, Darwin-Wallace Biodiversity Scholar Award 2015 \$ 1,000
	<ul style="list-style-type: none"> ▪ University of Arizona, Ecology & Evolutionary Biology Summer Research Fellowship 2013 \$ 1,000
	<ul style="list-style-type: none"> ▪ Ecological Society of America, Plant Population Ecology Section Travel Award 2013 \$ 500
	<ul style="list-style-type: none"> ▪ National Science Foundation Graduate Research Fellowship 2011 Population and Community Biology, <i>declined</i> \$ 90,000
	<ul style="list-style-type: none"> ▪ Rice University Clark P. Read Award 2011 Excellence in Ecology and Evolutionary Biology
	<ul style="list-style-type: none"> ▪ Rice University Trustee Distinguished Scholarship 2008 – 2011 \$ 40,500
	<ul style="list-style-type: none"> ▪ Rice University Undergraduate Scholars Program 2010 – 2011 \$ 2,000
	<ul style="list-style-type: none"> ▪ National Science Foundation Research Experience for Undergraduates 2010 Mountain Lake Biological Station
<ul style="list-style-type: none"> ▪ Rice University Undergraduate Summer Research Award 2009 \$ 2,000 	
TEACHING EXPERIENCE	<p>Tohono O’odham Community College, Sells, AZ, USA</p> <ul style="list-style-type: none"> ▪ Invited Lecturer 2018 <ul style="list-style-type: none"> • Natural History of the Southwest and Environmental Biology
	<p>University of Arizona, Tucson, AZ USA</p> <ul style="list-style-type: none"> ▪ Invited Lecturer & Curriculum Development <ul style="list-style-type: none"> • Introductory Biology II Laboratory, Online Course 2017 • Advanced Statistics Seminar 2015 ▪ Graduate Teaching Assistant <ul style="list-style-type: none"> • Ecology 2012 & 2016 • Introductory Biology II Laboratory 2013
	<p>Rice University, Houston, TX USA</p> <ul style="list-style-type: none"> ▪ Undergraduate Teaching Assistant <ul style="list-style-type: none"> • Introductory Biology 2011 • Ecology 2010 • Elementary Applied Statistics 2009 – 2010

**SELECTED
ACADEMIC
PRESENTATIONS**

INVITED

- [5] **Yule, KM** (2020) Complementarity of the NEON Biorepository and natural history collection networks for understanding ecological change across spatial, temporal, and taxonomic scales. Ecological Society of America Organized Oral Symposium: Revolutionizing Our Understanding of Scale: How the NEON Network Enables Innovative Research into the Complexities of Ecological Phenomena across Spatio-Temporal Scales.
- [4] **Yule, KM** (2020) Collecting Natural History Specimens to Monitor Change: The NEON Biorepository as a Test Case. Special Post-Botany Symposium: Biodiversity Research Collecting Is More Important Than Ever—Ushering in a Collecting Renaissance.
- [3] **Yule, KM** and JL Bronstein (2015) Reproductive phenology of a parasitic plant differs with host species. Phenological Research and Observations of Southwest Ecosystems (PROSE) Symposium. Tucson, AZ, USA.
- [2] **Yule, KM**, JAH Koop, NM Alexandre, and NK Whiteman (2015) Genetic structure of parasite populations: The role of vectors, hosts, and mutualists. Pepinière interdisciplinaire CNRS-PSL "Eco-Evo-Devo": Frontiers in Ecology and Evolution. Paris, France.
- [1] **Yule, KM**, CA Johnson, and R Ferrière (2014) The indirect effects of antagonism between species with a shared mutualist: A case study on the ecological and evolutionary dynamics of a plant-pollinator-seed disperser food web module. Eco-Evolutionary Mathematics Seminar at École Normale Supérieure. Paris, France.

CONTRIBUTED

- [20] **Yule, KM, L Steger, NM Franz** (2020) National Ecological Observatory Network (NEON) Biorepository plant and algal samples available for ecological and evolutionary research. Botanical Society of America.
- [19] **Yule, KM** (2020) Ecological and climatic influences on the population structure of desert mistletoe. The Tri-National Sonoran Desert Symposium. Ajo, AZ, USA.
- [18] **Yule, KM**, NM Franz, EE Gilbert, AP Husain, MA Johnston, L Rocha Prado, and L Steger (2020) The NEON Biorepository as a tool for monitoring ecological and evolutionary responses to change. American Society of Naturalists. Asilomar, CA, USA.
- [17] Franz, NM, EE Gilbert, AP Husain, MA Johnston, L Rocha Prado, L Steger and **Yule, KM** (2019) Where NEON and natural history collections data meet: Exploring the NEON Biorepository data portal. Ecological Society of America. Louisville, KY, USA.
- [16] **Yule, KM** (2019) Biorepositories for monitoring ecological and evolutionary responses to change. Botany. Tucson, AZ, USA.
- [15] **Yule, KM** (2019) Host-association determines population genomic structure of a parasitic plant through impacts on reproductive traits and pollination. Botany. Tucson, AZ, USA.
- [14] **Yule, KM** and GS Bradburd (2019) Determining whether geographic distance and ecological factors influence spatial genetic differentiation. Evolution. Providence, RI, USA.
- [13] Franz, NM, EE Gilbert, AP Husain, MA Johnston, L Rocha Prado, L Steger and **Yule, KM** (2019) Introducing the National Ecological Observatory Network - NEON Biorepository Data Portal. iDigBio Digital Data Conference. New Haven, CT, USA.
- [12] **Yule, KM** (2018) Host association and environment determine population genomic structure of a parasitic plant through reproductive traits. Evolution. Montpellier, France.
- [11] **Yule, KM** and JL Bronstein (2017). Intrapopulation size and mate composition influence the reproductive success of a parasitic plant. Evolution. Portland, OR, USA.
- [10] **Yule, KM** and JL Bronstein (2016) The maintenance of host-associated differentiation in a vector-borne parasitic plant. Evolution, American Society of Naturalists Spotlight Session "The Evolution of Species Interactions." Austin, TX, USA.
- [9] **Yule, KM** (2016) Host species effects on desert mistletoe (*Phoradendron californicum*). The Tri-National Sonoran Desert Symposium. Ajo, AZ, USA.
- [8] **Yule, KM**, CA Johnson, and R Ferrière (2016) Integrating genetic architecture and density dependence to understand the evolution of life history. The American Society of Naturalists. Asilomar, CA, USA.

- [7] **Yule, KM**, JAH Koop, NM Alexandre, and NK Whiteman (2015) Host associated differentiation and host switching by a parasitic plant are mediated by mutualist vectors. *Evolution*. Guaraja, Brazil.
- [6] **Yule, KM**, CA Johnson and R Ferrière (2014) Indirect interactions in a system involving mutualism and antagonism: A model of pollinator-disperser antagonism. *Ecological Society of America*. Sacramento, CA, USA.
- [5] **Yule, KM** and JL Bronstein (2013) Reproductive biology of a mutualist-vectored parasitic plant differs with host species. *Research Insights in Semiarid Environments (RISE) Symposium*. Tucson, AZ, USA.
- [4] **Yule, KM** and JL Bronstein (2013) Reproductive biology of a mutualist-vectored parasitic plant differs with host species. *Ecological Society of America*. Minneapolis, MN USA.
- [3] Parmenter, RR, RW Oertel, TS Compton, S Kindschuh, M Peyton, W Meyer, C Caldwell, GZ Jacobi, O Myers, M Zeigler, M and **KM Yule** (2012) Fire and floods in the Valles Caldera National Preserve, New Mexico: The 2011 Las Conchas Fire impacts on montane species diversity and food webs. *Ecological Society of America*. Portland, OR, USA.
- [2] **Yule, KM**, TEX Miller, and JA Rudgers (2011) Costs, benefits, and loss of vertically transmitted symbionts affect host population dynamics. *Ecological Society of America*. Austin, TX, USA.
- [1] JA Rudgers, Clay K, and **KM Yule** (2010) Grass-endophyte symbioses alter plant-herbivore-natural enemy interactions, *Ecological Society of America*. Pittsburgh, PA, USA.

PRESENTATIONS FOR THE PUBLIC

- [3] **Yule, KM** (2018) Using desert mistletoe to understand host-parasite interactions. *Philanthropic Education Organization (PEO)*. SaddleBrooke, AZ, USA.
- [2] **Yule, KM** (2016) Desert mistletoe: A misunderstood, but beneficial native plant. *Arizona Native Plants Society*. Tucson, AZ, USA.
- [1] **Yule, KM** (2013) The ecology of desert mistletoe: an emblem of the Sonoran Desert. *Arizona Sonoran Desert Museum*. Tucson, AZ, USA.

PUBLICATIONS FOR THE PUBLIC

- [2] **Yule, KM** (2016) The evolution of desert mistletoe host races: What we know and what questions remain. *The Plant Press (The Arizona Native Plants Society)* 29(1): 7-9.
- [1] **Yule, KM** (2016) Desert mistletoe: A misunderstood native plant. *Newsletter of the Friends of Ironwood Forest* Spring 2016: 1-3.

MENTORSHIP

Grand Canyon University Internship Mentor, Tempe, AZ, USA

- Jessica Stansfield 2019

Tucson Magnet High School Biotechnology Program Mentor, Tucson, AZ, USA

- Seneca Blank 2016 – 2018
 - Awards: 1st place in High School Plant Sciences at The Southern Arizona Research, Science, and Engineering Foundation and selected to attend the International Science and Engineering Foundation Fair, and recipient of a \$2,000 University of Arizona scholarship based on her project

University of Arizona, Senior Honors Thesis Mentor, Tucson, AZ, USA

- Nico Lorenzen 2014 – 2015
 - Awards: Outstanding Senior Award for both the Department of Ecology and Evolutionary Biology and the Department of Neuroscience
 - Currently studying Ecology in Helsinki, Finland

University of Arizona Research Mentor, Tucson, AZ, USA

- Caitlin Davey, Emerson Martin, Alexandra Pond, Elyse May, James Berry, Nicolas Alexandre, Lauren Johnston, Meghan Iacueli, Victoria Eudy, Michelle Gradall 2012-2017

Pima Community College Research Mentor, Tucson, AZ, USA

- Peter Rice 2012

OUTREACH & SERVICE

- **Workshop organization and participation** 2019
 - Exploring the NEON Biorepository data portal with Symbiota and R, Career Central at Ecological Society of America
 - Beyond Data: Navigating NEON Resources at Ecological Society of America

- Ecological Society of America Data Help Desk
 - **Conservation, education, and advocacy work** 2014 – present
 - Board Member for non-profit Friends of Ironwood Forest
 - **Contributions to science in the media** 2017
 - Interviews with and field trip guidance for members of national press media outlets regarding research conducted in and preservation of Ironwood Forest National Monument
 - **Society award judge** 2016
 - Judge for Don Abbott Postdoc Research Award, The American Society of Naturalists
 - **Contributor to local flora project** 2016
 - Provided input for “From Ajo Peak to Tinajas Altas: Flora of Southwestern Arizona” by R. S. Felger and S. Rutman
 - **Science fair judge** 2014 – 2017
 - Grand Awards Judge at the Southern Arizona Research, Science, and Engineering Foundation (SARSEF) Regional Fair
 - Judge at Flowing Wells High School and Tucson Magnet High School fairs
 - **Elementary school outreach leader** 2013
 - Volunteer for Insect Discovery, an elementary school education program at University of Arizona
 - **Departmental service**
 - Postdoctoral representative to the Integrative Biology seminar organization committee, Michigan State University 2018 – 2019
 - Organized and led weekly seminar and discussion group on current topics in eco-evolutionary dynamics at University of Arizona 2014
 - Judge at Ecology & Evolutionary Biology Undergraduate Research Poster Session, University of Arizona 2013 – 2016
 - Co-organizer of the Ecology & Evolutionary Biology Prospective Graduate Recruitment Weekend, University of Arizona 2013
- WORKSHOPS**
- **iDigBio and BiotaPhy: Using Digitized Herbarium Data in Research: Applications for Ecology, Phylogenetics, and Biogeography** 2019
 - **Cyverse-iPlant** 2016
 - **Joint MBI-NIMBioS-CAMBAM Summer Graduate Workshop** 2013
 - Connecting Biological Data with Mathematical Models
- JOURNALS REFEREED**
- Biocontrol, Conservation Science and Practice, Ecosphere, Evolution, Global Change Biology, Mathematical Biosciences, Plant Biology, Plant Ecology, The American Naturalist
- PROFESSIONAL SOCIETIES**
- American Society of Naturalists, Arizona Native Plants Society, Botanical Society of America, Ecological Society of America, Society for the Study of Evolution, The Next Generation Sonoran Desert Researchers
- REFERENCES**
- **Judith Bronstein**
 - Ph.D. advisor
 - University Distinguished Professor of Ecology & Evolutionary Biology at University of Arizona
 - judieb@email.arizona.edu
 - (520) 621-3534
 - **Nico Franz**
 - Professor in the School of Life Sciences at Arizona State University
 - Director Biodiversity Knowledge Integration Center (BioKIC) and Biocollections at Arizona State University
 - nico.franz@asu.edu
 - **Noah Whiteman**
 - Associate Professor of Integrative Biology at University of California, Berkeley

- whiteman@berkeley.edu
- **Régis Ferrière**
 - Associate Professor of Ecology & Evolutionary Biology at University of Arizona
 - Professor of Eco-Evolutionary Mathematics at École Normale Supérieure
 - regisf@email.arizona.edu
 - (520) 626-4741
- **Gideon Bradburd**
 - Postdoctoral supervisor
 - Assistant Professor of Integrative Biology at Michigan State University
 - bradburd@msu.edu