

# Rebecca Y. (Shirk) Kartzinel

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## PROFESSIONAL APPOINTMENTS

2017-

Assistant Professor (Research), Department of Ecology and Evolutionary Biology, Brown University.

2016-2017

Postdoctoral Research Associate, Department of Ecology and Evolutionary Biology, Princeton University.

2013-2015

Postdoctoral Research Associate, Department of Botany, University of Wisconsin-Madison.

## EDUCATION

2013 Ph.D., Department of Plant Biology, University of Georgia.

2005 B.A., Oberlin College. Biology (Highest Honors) and East Asian Studies.

## PUBLICATIONS

10. BM vonHoldt, E Shuldiner, I Janowitz Koch, **RY Kartzinel**, et al. 2017. Structural variants in genes associated with human Williams-Beuren Syndrome underlie stereotypical hyper-sociability in domestic dogs. *Science Advances* 3: e1700398.
  - Coverage in *The New York Times*, the BBC, and other media outlets
9. **RY Kartzinel**, D Spalink, TJ Givnish, and DM Waller. 2016. Divergence and isolation of cryptic sympatric taxa within the annual legume *Amphicarpaea bracteata*. *Ecology and Evolution* 6:3367-3379.
8. H Jennings\*, [12 coauthors\*], **RY Kartzinel**, and TJ Givnish. 2016. Inbreeding, low genetic diversity, and spatial genetic structure in the endemic Hawaiian lobeliads *Clermontia fauriei* and *Cyanea pilosa* ssp. *longipedunculata*. *Conservation Genetics* 17: 497-502.
  - \* indicates student contributors
7. **RY Shirk** and JL Hamrick. 2014. Multivariate adaptation but no increase in competitive ability in invasive populations of *Geranium carolinianum*. *Evolution* 68: 2945-2959.
6. **RY Shirk** and JL Hamrick. 2014. High but variable outcrossing rates in the invasive *Geranium carolinianum* (Geraniaceae). *American Journal of Botany* 101: 1200-1206.
5. TJ Theim, **RY Shirk**, and TJ Givnish. 2014. Spatial genetic structure in four species of *Psychotria* and implications for tropical diversity. *American Journal of Botany* 101: 1189-1199.

4. **RY Shirk**, JL Hamrick, C Zhang, and S Qiang. 2014. Patterns of genetic diversity reveal multiple introductions and recurrent founder effects during range expansion in invasive populations of *Geranium carolinianum* (Geraniaceae). *Heredity* 112: 497-507.
3. LC Brouillette, C Mason, **RY Shirk**, and LA Donovan. 2014. Evidence of adaptive differentiation for some, but not all, leaf economic traits in the desert sunflower *Helianthus anomalus*. *New Phytologist* 201: 1316-1327.
2. **RY Shirk**, TC Glenn, S-M Chang, and JL Hamrick. 2013. Development and characterization of microsatellite primers in *Geranium carolinianum* (Geraniaceae) with 454 sequencing. *Applications in Plant Sciences* 1(8):1300006.
1. MHH Stevens, **R Shirk**, and C Steiner. 2006. Water and fertilizer have opposite effects on plant species richness in a mesic early successional habitat. *Plant Ecology* 183: 27-34.

### **INVITED SEMINARS**

- RY Kartzinel**. Drivers of adaptation and diversity in plant populations. April 27, 2016. Department of Ecology and Evolutionary Biology, Brown University. Providence, RI, USA.
- RY Shirk** and JL Hamrick. Genetic constraints to adaptation in native and invasive populations of *Geranium carolinianum*. August 24, 2012. Enthusiasts of Diversity, Genetics, and Evolution (EDGE) seminar series, University of Georgia. Athens, GA, USA.
- RY Shirk**. Using population and quantitative genetics to infer the invasion history of the Carolina cranesbill, *Geranium carolinianum*. March 29, 2012. Department of Biology seminar series, University of North Carolina-Asheville. Asheville, NC, USA.

### **SELECTED TALKS AND POSTERS**

- RY Kartzinel**, BM vonHoldt, RM Pringle, and CE Tarnita. Ants and plants: specific host epigenetic responses in a multispecies mutualism. September 2017. 40<sup>th</sup> New Phytologist Symposium: Plant epigenetics - from molecular mechanisms to ecological relevance (invited talk), Vienna, Austria.
- RY Kartzinel**, BM vonHoldt, RM Pringle, and CE Tarnita. Plants and ants: epigenetic responses to multiple mutualist partners. May 2017. Ecological epigenetics symposium (invited talk), Canadian Society for Ecology and Evolution. Victoria, BC, Canada.
- RY Shirk** and JL Hamrick. Quantitative trait divergence within and across continents in an invasive plant. July 2012. First Joint Congress on Evolutionary Biology. Ottawa, Ontario, Canada.
- RY Shirk**, JL Hamrick, C Zhang, and S Qiang. Inferring the invasion history of *Geranium carolinianum* using population genetics. April 2012. 73<sup>rd</sup> Annual Meeting of the Association of Southeastern Biologists. Athens, GA, USA.
- RY Shirk**, JL Hamrick, C Zhang, and S Qiang. Genetic diversity in native and invasive populations of an annual herb. August 2011. 96<sup>th</sup> Annual Meeting of the Ecological Society of America. Austin, TX, USA. (Poster)

## **GRANTS AND FELLOWSHIPS**

### **Pending grants:**

National Science Foundation, Plant Biotic Interactions (Co-PI with Bridgett vonHoldt, Robert Pringle, and Kirsten Prior)

### **Completed grants:**

2009-2013 NSF Graduate Research Fellowship Program (\$121,500)  
2010, 2012 Palfrey Student Research Grant, University of Georgia Department of Plant Biology (\$1,000 and \$1,250)  
2010 Oberlin Alumni Fellowship (\$3,000)  
2008-2010 University of Georgia Graduate School Assistantship (\$77,797)

## **HONORS AND AWARDS**

2008 Honorable mention, NSF Graduate Research Fellowship Program  
2005 Highest Honors in Biology, Oberlin College  
2005 Elected to Sigma Xi, Oberlin Chapter

## **TEACHING**

### **Courses taught**

2017 Evolution of Plant Diversity (BIOL 0430), Brown University.  
2014 Hawaiian Ecology and Evolution (BOT 575), UW-Madison.

### **Workshops**

2015 Stacks and High-Throughput Computing, UW-Madison.

### **Teaching assistantships**

2012 Life Sciences for Middle School Teachers Laboratory (PBIO 2010L), University of Georgia  
2011 Evolutionary Biology (GENE 3000), University of Georgia  
2009 Field Studies in Ecological Genetics (GENE 4810L), University of Georgia  
2005-2006 Assistant Language Teacher, Nakadomari Board of Education, Aomori, Japan. Japan Exchange and Teaching (JET) Programme.

### **Guest lectures**

2012 Invasive species. Life Sciences for Middle School Teachers (PBIO 2010), University of Georgia

## **PROFESSIONAL SERVICE**

Peer review for *American Journal of Botany*, *Annals of Botany*, *AoB PLANTS*, *BMC Genetics*, *Evolutionary Applications*, *Molecular Ecology*, and *Molecular Ecology Resources*.

## **MENTORSHIP, TRAINING, AND OUTREACH**

**Brown University undergraduate training:** Heather Huminski (2017-present), Samuel Miller-Smith (2018-present)

### **Activities as a postdoctoral fellow (Princeton University and UW-Madison)**

Mentoring & training high school students (3) and undergraduates (3).

### **Service and outreach activities**

- 2013-2014 Mentor, Madison Middle School Science Symposium
- 2011-2012 Plant biology outreach, Hilsman Middle School, Athens, GA, USA.
- 2011 Award Committee member, Plant Biology Graduate Student Association  
Research Assistance Award, University of Georgia.
- 2010-2011 Secretary, Plant Biology Graduate Student Association (elected position).
- 2009 Panelist, NSF GRFP application workshop, University of Georgia.

### **PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS**

Society for the Study of Evolution, Sigma Xi, Ecological Society of America, Mpala Research Centre. Note: not all are current.