# Wade R. Roberts

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PROFESSIONAL APPOINTMENTS

*Post Doctoral fellow*, University of Arkansas, 2018 –

EDUCATION

*Ph.D.,* Molecular Plant Sciences, Washington State University, 2012-2018. Dissertation: Evolutionary genomics of flower diversification in the magic flowers (*Achimenes,* Gesneriaceae). Advisor: Eric H. Roalson.

*B.S.,* Biology, *cum laude,* Whitworth University, 2007-2012.

*B.A.,* Art (Sculpture and Ceramics), *cum laude,* Whitworth University, 2007-2012.

PUBLICATIONS

7. Gargas CB*, **Roberts WR***, Alverson AJ. 2020. Genome sequences of bacteria associated with the diatom *Cyclotella cryptica* strain CCMP332. *Microbiology Resource Announcements* 9:e01030-20.

6. **Roberts WR**, Downey KM, Ruck EC, Traller JC, Alverson AJ. 2020. Improved reference genome for *Cyclotella cryptica* CCMP332, a model for cell wall morphogenesis, salinity adaptation, and lipid production in diatoms (Bacillariophyta). *G3: Genes, Genomes, Genetics* 10(9): 2965-2974.

5. **Roberts WR**, Roalson EH. 2020. Co-expression clustering across flower development identifies modules for diverse floral forms in *Achimenes* (Gesneriaceae). *PeerJ* 8: e8778.

4. Kleinkopf JA, **Roberts WR**, Wagner WL, Roalson EH. 2019. Diversification of Hawaiian *Cyrtandra* (Gesneriaceae) under the influence of incomplete lineage sorting and hybridization. *Journal of Systematics and Evolution* 57(6): 561-578.

3. **Roberts WR**, Roalson EH. 2018. Phylogenomic analyses reveal extensive gene flow within the magic flowers (*Achimenes*). *American Journal of Botany* 105(4): 726-740.

2. **Roberts WR**, Roalson EH. 2017. Comparative transcriptome analyses of flower development in four species of *Achimenes* (Gesneriaceae). *BMC Genomics* 18(1): 240.

1. Roalson EH, **Roberts WR**. 2016. Distinct processes drive diversification in different clades of Gesneriaceae. *Systematic Biology* 65(4): 662-684.

(* indicates equal contribution)

PREPRINTS

Pendergrass A, **Roberts WR**, Ruck EC, Lewis JA, Alverson AJ. The genome of a nonphotosynthetic diatom provides insights into the metabolic shift to heterotrophy and constraints on the loss of photosynthesis. *bioRxiv* DOI: 10.1101/2020.05.28.115543.

RESEARCH GRANTS

2020 Co-PI: Community Science Program, Joint Genome Institutes [ID 506537100]. 100 Diatom Genomes Project.

2016 Co-PI: Doctoral Dissertation Improvement Grant, National Science Foundation [DEB 1601003]. Evolution of gene expression in floral diversification of Neotropical Gesneriaceae. PI: Eric Roalson. $19,323.
2016 PI: Elvin McDonald Research Endowment Fund, The Gesneriad Society. Characterizing a red-to-blue flower color transition in *Achimenes* (Gesneriaceae). $1,750.
2012 PI: Global Plant Sciences Initiative Fellowship, Washington State University. $10,000.

AWARDS

2016 Best Poster Presentation, Inland Northwest Genomics Symposium.
2015 Travel Award to Botany meeting, American Society of Plant Taxonomists. $300.
2011 Synthetic Biology Research Experience (REU) Fellow, National Science Foundation, North Carolina State University.

DEPARTMENTAL SEMINARS

**Roberts WR.** 2017. Evolutionary genomics in the magic flowers (*Achimenes*, Gesneriaceae). Washington State University
**Roberts WR.** 2016. Floral diversification in Gesneriaceae: macroevolutionary and genomics approaches. Washington State University

CONTRIBUTED TALKS

**Roberts WR**, Alverson AJ. 2020. Evidence for a recent whole-genome duplication in a diatom genome. Botany meeting, virtual.
**Roberts WR**, Alverson AJ. 2019. Whole genome shotgun phylogenomics in the Thalassiosirales. North American Diatom Symposium, Eatonton, GA.
**Roberts WR**, Roalson EH. 2018. Gene co-expression network connectivity is an important determinant of selective constraint during flower diversification in the magic flowers (*Achimenes,* Gesneriaceae). Botany meeting, Rochester, MN.
Kleinkopf JA, **Roberts WR**, Wagner WL, Roalson EH. 2018. Detecting hybridization in Hawaiian *Cyrtandra* (Gesneriaceae) using genome-wide data. Botany meeting, Rochester, MN.
**Roberts WR**, Roalson EH. 2017. Genomic evidence for gene flow between species of magic flowers (*Achimenes*, Gesneriaceae). Evolution meeting, Portland, OR.
**Roberts WR**, Roalson EH. 2017. Dissecting floral diversification in the magic flowers (*Achimenes*, Gesneriaceae). Biological Sciences Graduate Student Symposium, *Washington State University*.
**Roberts WR**, Roalson EH. 2015. Understanding flower diversification in *Achimenes* (Gesneriaceae) using a comparative transcriptomics approach. Botany meeting, Edmonton, AB.

POSTERS

Ruck EC, **Roberts WR**, Nakov TN, Alverson AJ. Parallel sequencing of diatom plastid genomes using a bait-capture approach.
- North American Diatom Symposium, Eatonton, GA.

**Roberts WR**, Roalson EH. 2018. Phylogenomic analyses reveal extensive gene flow within the magic flowers (*Achimenes,* Gesneriaceae).
- Botany meeting, Rochester, MN.
- Academic Showcase, Washington State University.

**Roberts WR**, Roalson EH. 2017. Exploring phylogenetic relationships in *Achimenes* (Gesneriaceae) using transcriptome sequencing.
- School of Biological Sciences Graduate Student Symposium, Moscow, ID.
- Plant Sciences Retreat, Washington State University, Pullman, WA.

**Roberts WR**, Roalson EH. 2016. Using comparative transcriptomics to understand flower diversification: an example from *Achimenes* (Gesneriaceae).
- Inland Northwest Genomics Research Symposium, Moscow, ID.
- Academic Showcase, Washington State University.
- Plant Sciences Retreat, Washington State University.

**Roberts WR**, Roalson EH. 2015. Understanding flower diversification in *Achimenes* (Gesneriaceae) using a comparative transcriptomics approach.
- Pan-Am Evo-Devo inaugural meeting, Berkeley, CA.

**Roberts WR**, Roalson EH. 2015. Geographic processes drive diversification in different clades of Gesneriaceae.
- School of Biological Sciences Graduate Student Symposium, Moscow, ID.
- Plant Sciences Retreat, Washington State University, Pullman, WA.

**Roberts WR**, Xiang J. 2011. Cloning and evolutionary analysis of *SEPALLATA3* genes in dogwoods—deciphering the genetic links to bract petaloidy.
- North Carolina State University Undergraduate Summer Research Symposium, Raleigh, NC.

FORMAL TEACHING EXPERIENCE

2018, *WSU*, Guest Lecturer, Systematic Botany (undergraduate, Biol 332)

2013-2018, *WSU*, Graduate Teaching Assistant (undergraduate)
Systematic Botany, Biol 332 (3 semesters)
Introductory Botany, Biol 120 (3 semesters)
Introductory Biology: Organismal Biology, Biol 106 (5 semesters)

2012, *Whitworth University*, Supplemental Instructor, General Biology I (undergraduate, Biol 140)

MENTORSHIP

*Undergraduates*:
Katjana Wiederkehr (University of Arkansas; now at Columbia University for M.P.H.)
Andrew Palmer (University of Arkansas)

SERVICE

Public outreach:
2020 –, myDiatoms, citizen science outreach project, University of Arkansas
2019, volunteer, Secchi Day at Beaver Lake, Rogers, AR
2017, co-lead organizer, Plant Science Day, Washington State University
2016, exhibit leader, Plant Science Day, Washington State University
2015, native plant guide, Palouse Outdoor Science Day
2014 – 2015, greenhouse tour guide, Biology Open House, Washington State University

Peer review:
*BMC Genomics* (1), *Communications Biology* (2), *Ecology and Evolution* (2), *Genes* (5), *Molecular Ecology Resources* (1), *PeerJ* (4), *PhytoKeys* (9), *Plant Cell Reports* (1), *Plant Growth Regulation* (3), *Plants* (1), *PLoS One* (2), *Taxon* (2)

Committee memberships:
2016 –2018, faculty representative, Molecular Plant Sciences Graduate Student Organization
2014 –2016, Palouse Discovery Science Center Committee

Miscellaneous:
2020, student project judge, Northwest Arkansas Science and Engineering Fair
2019, student project judge, Northwest Arkansas Science and Engineering Fair
2018, volunteer botanist, Palouse Conservation District

SOFTWARE REPOSITORIES

https://github.com/wrroberts

FIELDWORK AND FLORISTICS

Eastern Washington (2011-2018), Hudson Biological Reserve (2016-2018), Palouse Prairie Strip (2016-2018).

PROFESSIONAL SOCIETIES

Botanical Society of America, The Gesneriad Society, Society for the Study of Evolution

'Wade Riley', M. Roberts, Tall Bearded Iris, The American Iris Society, 2007