

Wade R. Roberts

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PROFESSIONAL APPOINTMENTS

Postdoctoral 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, *cum laude*, Whitworth University, 2007-2012.

PUBLICATIONS

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.

PREPRINTS

Roberts WR, Downey KM, Ruck EC, Traller JC, Alverson AJ. Improved reference genome for *Cyclotella cryptica* CCMP332, a model for cell wall morphogenesis, salinity adaptation, and lipid production in diatoms (Bacillariophyta). *bioRxiv* DOI: 10.1101/2020.05.19.103069.

Pendergrass A, **Roberts WR**, Ruck EC, Lewis JA, Alverson AJ. The genome of the nonphotosynthetic diatom, *Nitzschia* sp.: insights into the metabolic shift to heterotrophy and the rarity of loss of photosynthesis in diatoms. *bioRxiv* DOI: 10.1101/2020.05.28.115543.

RESEARCH GRANTS

- 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 (now at Columbia University for M.P.H.), Andrew Palmer.

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* (1), *Ecology and Evolution* (1), *Genes* (2), *PeerJ* (2), *PhytoKeys* (9), *Plant Cell Reports* (1), *Plant Growth Regulation* (1), *Taxon* (1)

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

HONORIFIC NAMES

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