

# Wade Roberts

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Research interests	Ecological and evolutionary genomics of species diversity; genetics of flower development; evolutionary-developmental biology; phylogenetics and comparative biology; species boundaries and hybridization; biogeography and conservation
Appointments	<b>Postdoctoral Fellow</b> , University of Arkansas   Jun 2018 – present PI: Dr. Andrew Alverson, Department of Biological Sciences
Education	<b>Washington State University</b> , Pullman, WA   Aug 2012 – May 2018 Ph.D., Molecular Plant Sciences Dissertation title: “Evolutionary genomics of flower diversification in the magic flowers ( <i>Achimenes</i> , Gesneriaceae)” Major supervisor: Dr. Eric H. Roalson Committee: Drs. Amit Dhingra, Joanna L. Kelley, and Andrew McCubbin  <b>Whitworth University</b> , Spokane, WA   Sep 2007 – May 2012 B.S., Biology B.A., Art Advisors: Dr. Lee Anne Chaney and Ms. Katie Creyts
Skills + expertise	<b>Research</b> – comparative genomics and transcriptomics, phylogenetic inference, biological network analysis <b>Computational</b> – R/Python/Perl/Git, genomic data processing, data visualization, parallel computing, multivariate statistics, Bayesian statistics <b>Management</b> – experimental design, grant application preparation, interdisciplinary collaboration <b>Laboratory</b> – molecular biology, RNA-seq and DNA-seq library preparation, qPCR, micropropagation and tissue culture, genetic transformation, microscopy, biochemistry <b>Field</b> – plant identification (Pacific Northwest and Palouse region), fieldwork in floristics, herbarium processing and databasing, greenhouse plant growth and maintenance <b>Other</b> – K-12 STEM outreach, student education and mentoring, public speaking, scientific writing
Publications	3. <b>Roberts, W.R.</b> , and E.H. Roalson. 2018. Phylogenomic analyses reveal extensive gene flow within the magic flowers ( <i>Achimenes</i> , Gesneriaceae). <i>American Journal of Botany</i> in Press.  2. <b>Roberts, W.R.</b> , and E.H. Roalson. 2017. Comparative transcriptome analyses of flower development in four species of <i>Achimenes</i> (Gesneriaceae). <i>BMC Genomics</i> . 18(1): 240. DOI: 10.1186/s12864-017-3623-8  1. Roalson, E.H., and <b>W.R. Roberts</b> . 2016. Distinct processes drive diversification in different clades of Gesneriaceae. <i>Systematic Biology</i> . 65(4): 662-684. *Cover Image* DOI: 10.1093/sysbio/syw012
Manuscripts in prep	<b>Roberts, W.R.</b> , N. Zhang, and E.H. Roalson. Molecular evolution of anthocyanin and carotenoid pigmentation genes during transitions in floral pollination syndromes. (In prep)  <b>Roberts, W.R.</b> , and E.H. Roalson. Co-expression network connectivity is an important determinant of selective constraint during flower diversification in <i>Achimenes</i> (Gesneriaceae). (In prep)  <b>Roberts W.R.</b> , J.L Crabb, A. Dhingra, and E.H. Roalson. Micropropagation and <i>Agrobacterium</i> -mediated genetic transformation of <i>Achimenes erecta</i> (Gesneriaceae). (In prep)
Oral presentations	<b>Genomic evidence for gene flow between species of magic flowers (<i>Achimenes</i>, Gesneriaceae)</b> Roberts, W.R., and E.H. Roalson Evolution, Portland, OR   Jun 2017 (contributed)

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### Oral cont'd

Evolutionary genomics in the magic flowers (*Achimenes*, Gesneriaceae)  
Roberts, W.R.  
Molecular Plant Sciences Seminar, Pullman, WA | Apr 2017 (departmental seminar)

Dissecting floral diversification in the magic flowers (*Achimenes*, Gesneriaceae)  
Roberts, W.R., and E.H. Roalson  
SBS Graduate Student Symposium, Pullman, WA | Mar 2017 (invited)

Floral diversification in Gesneriaceae: macroevolutionary and genomics approaches  
Roberts, W.R.  
Molecular Plant Sciences Seminar, Pullman, WA | Oct 2016 (departmental seminar)

Using comparative transcriptomics to understand flower diversification: an example from *Achimenes* (Gesneriaceae)  
Roberts, W.R., and E.H. Roalson  
SBS Graduate Student Symposium, Pullman, WA | Mar 2016 (invited)

Understanding flower diversification in *Achimenes* (Gesneriaceae) using a comparative transcriptomics approach  
Roberts, W.R., and E.H. Roalson  
Botany, Edmonton, AB | Jul 2015 (contributed)

### Poster presentations

Phylogenomic analyses reveal extensive gene flow within the magic flowers (*Achimenes*, Gesneriaceae)  
SBS Graduate Student Symposium, Pullman, WA | Mar 2018  
WSU Academic Showcase, Pullman, WA | Mar 2018  
WSU Plant Sciences Retreat, Pullman, WA | Mar 2018

Exploring phylogenetic relationships in *Achimenes* (Gesneriaceae) using transcriptome sequencing  
SBS Graduate Student Symposium, Pullman, WA | Mar 2017  
WSU Plant Sciences Retreat, Pullman, WA | Mar 2017

Using comparative transcriptomics to understand flower diversification: an example from *Achimenes* (Gesneriaceae)  
Inland Northwest Genomics Research Symposium, Moscow, ID | May 2016 \*Poster award\*  
WSU Academic Showcase, Pullman, WA | Mar 2016  
WSU Plant Sciences Retreat, Pullman, WA | Mar 2016

Understanding flower diversification in *Achimenes* (Gesneriaceae) using a comparative transcriptomics approach  
Pan-Am Evo Devo inaugural meeting, Berkeley, CA | Aug 2015

Geographic processes drive diversification in different clades of Gesneriaceae  
SBS Graduate Student Symposium, Pullman, WA | Feb 2015  
WSU Plant Sciences Retreat, Pullman, WA | Mar 2015

Cloning and evolutionary analyses of *SEPALLATA3* genes from dogwoods – deciphering the genetic links to bract petaloidy  
NCSU Undergraduate Summer Research Symposium, Raleigh, NC | July 2011

### Grants + awards

National Science Foundation Doctoral Dissertation Improvement Grant  
“Evolution of gene expression in floral diversification of Neotropical Gesneriaceae”,  
PI: Eric H. Roalson, Co-PI: Wade R. Roberts (\$19,323) | 2016-2017  
Global Plant Sciences Initiative Fellowship, Washington State University (\$10,000) | 2012-2017  
Elvin McDonald Research Endowment Fund, The Gesneriad Society,  
“Characterizing a red-to-blue flower color transition in *Achimenes* (Gesneriaceae)”  
(\$1,750) | 2016  
Best Poster Presentation, Inland Northwest Genomics Symposium | 2016  
Travel Award, American Society of Plant Taxonomists (\$300) | 2015  
Trustee Scholarship, Whitworth University (\$18,000 x4 years) | 2007-2012  
NSF REU Fellow in Synthetic Biology, North Carolina State University (\$5,500) | 2011

### Teaching

Graduate Teaching Assistant, Washington State University | Aug 2013 – current  
Biol 332 Systematic Botany (3 semesters)  
Biol 120 Introductory Botany (3 semesters)  
Biol 106 Introductory Biology: Organismal Biology (5 semesters)

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Teaching cont'd	<p><b>Guest Lecturer</b>, Washington State University Biol 332 Systematic Botany, "Berberidaceae, Papaveraceae, Saxifragaceae"   Mar 2018</p> <p><b>Teaching Assistant / Supplemental Instructor</b>, Whitworth University   Feb 2010 – May 2012 Bio 363 Genetics (1 semester) Bio 153 Plant Biology (2 semesters) Bio 141 General Biology I: Organismal Biology (1 semester)</p>
Experience	<p><b>Teaching Assistant</b>, School of Biological Sciences, Washington State University   2013 – current Instructors: Drs. Lisa Carloye, Asaph Cousins, Hanjo Hellman, Ray Lee, Andrew McCubbin, and Sian Ritchie, Eric Roalson, School of Biological Sciences</p> <p><b>Research Assistant</b>, Roalson Lab, Washington State University   Aug 2012 – current PI: Dr. Eric Roalson, School of Biological Sciences</p> <p><b>Fieldwork + Floristics</b>, Hudson Biological Reserve, Washington State University   2016, 2017 Supervisor: Dr. Eric Roalson, School of Biological Sciences</p> <p><b>Greenhouse worker</b>, Biology Department, Whitworth University   Sep 2010 – May 2012 Supervisor: Dr. Lee Anne Chaney, Biology Department</p> <p><b>Undergraduate Research Assistant</b>, Whitworth University   Sep – Dec 2011 PI: Dr. Finn Pond, Biology Department</p> <p><b>NSF Research Experience for Undergraduates</b>, North Carolina State University   May – Aug 2011 PI: Dr. Jenny Xiang, Department of Plant and Microbial Biology</p>
Service + outreach	<p><b>Faculty Representative</b>, MPS Graduate Student Organization   April 2016 – May 2018</p> <p><b>Co-Lead Organizer</b>, Plant Science Day   Apr 2017</p> <p><b>Co-Lead</b>, Palouse Discovery Science Center Committee   Nov 2014 – 2016</p> <p><b>Exhibit Leader</b>, Plant Science Day   Apr 2016</p> <p><b>Native Plant Guide</b>, Palouse Outdoor Science Day   Apr 2015</p> <p><b>Greenhouse Tour Guide</b>, Biology Open House   Oct 2015, Oct 2014</p>
Scientific Peer Review	<p><i>PhytoKeys</i>, <i>Plant Growth Regulation</i></p>
Training	<p><b>Software Carpentry Workshop</b>, Center for Environmental Research, Education, and Outreach Washington State University   Aug 2017</p> <p><b>Parallel Computing Workshop</b>, Center for Institutional Research Computing Washington State University   Jun 2017</p> <p><b>Grant Writing Workshop</b>, Graduate School Washington State University   Apr 2013</p>
Honorific names	<p>'Wade Riley', M. Roberts, Tall Bearded Iris, The American Iris Society   2007</p>
Student mentoring	<p><b>Graduates</b> Joseph Kleinkopf (Master's student; Fall 2016 – May 2018) Nan Zhang (Sep 2017 – May 2018) Raimundo Luciano Soares Neto (visiting scholar; Jul 2017 – Oct 2017)</p> <p><b>Phoenix Conservancy</b> Mara Huang (fieldwork; May 2017 – Aug 2017) Connor McLeod (fieldwork; May 2017 – Aug 2017) Tia Prudholm (fieldwork; May 2017 – Aug 2017) Bethany Tegt (fieldwork; May 2017 – Aug 2017)</p> <p><b>Undergraduates</b> Julian Bennett-Ponsford (Fall 2015 – Spring 2016) Becca Saunders (Spring 2016)</p>
Society membership	<p>American Society of Plant Taxonomists (2014 – current) Botanical Society of America (2012 – current) The Gesneriad Society (2012 – current) Society for the Study of Evolution (2014 – current)</p>

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### References

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