

Brook T. Moyers

NSF Plant Genome Postdoctoral Fellow
Colorado State University
1177 Campus Delivery, Fort Collins, CO 80523-1177
(707) 235-1237 / brook.moyers@gmail.com
www.brookmoyers.com / @brooklebee

Education

2015	University of British Columbia, Vancouver, BC	PhD, Botany
2007	Reed College, Portland, OR	BA, Biology

Professional Appointments

2015–	Postdoctoral Fellow, NSF National Plant Genome Initiative (NPGI) Colorado State University Sponsor: John McKay Project: Using genotype and environment to predict water use physiology
2007–8	Post-baccalaureate Fellow, NSF Frontiers in Integrative Bio. Research Brown University & Max Planck Institute for Plant Breeding PI: Johanna Schmitt Project: Ecological genomics of flowering in <i>Arabidopsis thaliana</i>

Grants, Fellowships & Awards

2016	Special Event Award, American Genetics Association, \$4,000 USD Trainee-Organized Symposia, Genetics Society of America, \$2,000 USD “Genomics of Adaptation to Human Contexts” Symposium co-PI with Kathryn Turner and Chris Schell
2015–18	Postdoctoral Research Fellowship in Biology, NSF NPGI, Award #1523752, \$216,000 USD
2014	Graduate Student Teaching Award, UBC Biology, \$500 CAD
2013	New Phytologist Prize for best student talk at Canadian Society for Ecology and Evolution meeting, \$500 CAD
2011	International Travel Award, NSF, \$1,000 USD
2010–13	Graduate Research Fellowship, NSF, \$120,000 USD
2009–13	Four-Year Fellowship, UBC, \$16,000 CAD annually plus tuition (declined funding 2010–13)
2009	Northern Telecom Graduate Fellowship, UBC, \$9,200 CAD

Brook T. Moyers — *Curriculum vitae*

2008	Graduate Entrance Scholarship, UBC, \$4,112 CAD
2006	Miller Research Grant, Reed College, \$2,350 USD

Publications

Peer reviewed

1. **Moyers***, Owens*, Baute and Rieseberg. The genetic architecture of UV floral patterning in sunflower. *Annals of Botany in press*. *co-first authors
2. Tanger, Klassen, Mojica, Lovell, **Moyers**, Baraoidan, Naredo, McNally, Poland, Bush, Leung, Leach and McKay. 2017. Field-based high throughput phenotyping rapidly identifies genomic regions controlling yield components in rice. *Nature Scientific Reports in press*.
3. **Moyers** and Rieseberg. 2016. Remarkable life history polymorphism may be evolving under divergent selection in the silverleaf sunflower. *Molecular Ecology* 25: 3817.
4. Todesco*, Pascual*, Owens*, Ostevik*, **Moyers***, Hübner*, Heredia*, Hahn*, Caseys*, Bock* and Rieseberg. 2016. Hybridization and extinction. *Evolutionary Applications* 9: 892. * authors in reverse-alphabetical order
5. **Moyers** and Rieseberg. 2013. Divergence in gene expression is uncoupled from divergence in coding sequence in a secondarily woody sunflower. *International Journal of Plant Science* 174: 1079.
6. Renaut, Grassa, Yeaman, **Moyers**, Lai, Kane, Bowers, Burke and Rieseberg. 2013. Genomic islands of divergence are not affected by geography of speciation in sunflowers. *Nature Communications* 4: 1827.
7. Vines, Andrew*, Bock*, Franklin*, Gilbert*, Kane*, Moore*, **Moyers***, Renaut*, Rennison*, Veen* and Yeaman*. 2013. Mandated data archiving greatly improves access to research data. *The FASEB Journal* 27: 1304. * authors in alphabetical order, UBC Reproducibility Group
8. Ziebell, Barb, Sandhu, **Moyers**, Sykes, Doepcke, Gracom, Carlile, Marek, Davis, Knapp and Burke. 2013. Sunflower as a biofuels crop: An analysis of lignocellulosic chemical properties. *Biomass and Bioenergy* 59: 208.
9. Fournier-Level, Wilczek, Cooper, Roe, Anderson, Eaton, **Moyers**, Petipas, Schaeffer, Pieper, Reymond, Koornneef, Welch, Remington and Schmitt. 2013. Paths to selection on life history loci in different natural environments across the native range of *Arabidopsis thaliana*. *Molecular Ecology* 22: 3552.
10. Ostevik, **Moyers**, Owens and Rieseberg. 2012. Parallel ecological speciation in plants? *International Journal of Ecology* 2012: Article ID 939862.

Brook T. Moyers — *Curriculum vitae*

11. Gilbert, Andrew*, Bock*, Franklin*, Kane*, Moore*, **Moyers***, Renault*, Rennison*, Veen* and Vines*. 2012. Recommendations for utilizing and reporting population genetic analyses: the reproducibility of genetic clustering using the program Structure. *Molecular Ecology* 21: 4925. * authors in alphabetical order, UBC Reproducibility Group
12. Renault, Grassa, **Moyers**, Kane and Rieseberg. 2012. The population genomics of sunflowers and genomic determinants of protein evolution revealed by RNA-Seq. *Biology* 1: 575.
13. Wilczek, Roe, Knapp, Cooper, Lopez-Gallego, Martin, Muir, Sim, Walker, Anderson, Egan, **Moyers**, Petipas, Giakountis, Charbit, Coupland, Welch and Schmitt. 2009. Effects of genetic perturbation on seasonal life history plasticity. *Science* 323: 930.

Non-peer reviewed

14. **Moyers**. 2015. The landscape of divergence in silverleaf sunflowers. Monograph at University of British Columbia Library. 166 pp.
15. **Moyers** and Kane. 2010. *Perspective*: The genetics of adaptation to novel environments: selection on germination timing in *Arabidopsis thaliana*. *Molecular Ecology* 19: 1270.
16. **Moyers**. 2007. Clinal variations in ribosomal RNA in the Northwest Larkspur *Delphinium nuttallii*: selection or drift? Monograph at Reed College Library. 78 pp.

In review or preparation

Moyers, Morrell and McKay. The genetic cost of domestication and improvement. Invited review for special issue at *Journal of Heredity*. *In prep.*

Moyers and Rieseberg. Variable selection and plasticity counteract theoretically favorable genetic architecture for speciation. *In prep.*

Monroe, Allen, Tanger, Mullen, **Moyers**, Whitley and McKay. TSPmap, a method making use of traveling salesperson problem solvers in the construction of high-density genetic linkage maps. *In prep.*

Conferences

Organizer

Co-organizer, Genomics of Adaptation to Human Contexts Symposium, Colorado State University, Fort Collins, CO, USA, 28–30 July 2016.

Talks (invited or competitive)

Moyers. 2016. Plasticity and the genetic architecture of local adaptation. Plant Speciation, Austin, TX, USA.

Moyers and Rieseberg. 2016. One locus to rule them all: life history QTL in the silverleaf sunflower. *Compositae Workshop*, Plant and Animal Genome XXIV, San Diego, CA, USA.

Brook T. Moyers — *Curriculum vitae*

Moyers and Rieseberg. 2013. The geographic and genomic landscape of divergence in *Helianthus argophyllus*. *Compositae Workshop*, Plant and Animal Genome XXI, San Diego, CA, USA.

Talks (contributed)

Moyers. 2016. Using genomics to accelerate agricultural gains. Genomics of Adaptation to Human Contexts Symposium, Fort Collins, CO, USA.

Moyers and Rieseberg. 2016. Variable selection and plasticity counteract favorable genetic architecture for speciation. Society for the Study of Evolution, Austin, TX, USA.

Moyers and Rieseberg. 2015. The landscape of divergence in silverleaf sunflowers. Canadian Society for Ecology and Evolution, Saskatoon, SK, Canada.

Moyers and Rieseberg. 2014. The genomics of adaptation and divergence in a wild sunflower. Society for the Study of Evolution, Raleigh, NC, USA.

Moyers and Rieseberg. 2013. Divergence in gene expression is uncoupled from divergence in coding sequence in a secondarily woody sunflower. Canadian Society for Ecology and Evolution, Kelowna, BC, Canada. Awarded New Phytologist Prize.

Moyers and Rieseberg. 2012. Divergent selection in the silverleaf sunflower, *Helianthus argophyllus*. Society for the Study of Evolution, Ottawa, Canada.

Posters

Moyers, Tanger, Klassen, Mojica, Lovell, Baraoidan, Naredo, McNally, Poland, Bush, Leung, Leach and McKay. 2017. Using field-based high-throughput phenotyping for genetic discovery in rice. Phenome 2017, Tucson, AZ, USA.

Moyers. 2016. Using genotype and environment to predict water use physiology in rice. National Plant Genome Initiative PI Meeting, Arlington, VA, USA.

Moyers and Rieseberg. 2014. Characterization of the spatial pattern of natural selection on silverleaf sunflower life history. EvoWIBO, Port Townsend, WA, USA.

Moyers and Rieseberg. 2013. Divergence in gene expression is uncoupled from divergence in coding sequence during rapid evolution in *Helianthus*. European Society for Evolutionary Biology, Lisbon, Portugal.

Moyers and Rieseberg. 2011. The evolution of flowering time in the silverleaf sunflower. Canadian Society for Ecology and Evolution, Banff, AB, Canada.

Moyers and Rieseberg. 2010. Why is flowering time diverging in the silverleaf sunflower? Society for the Study of Evolution, Portland, OR, USA.

Moyers and Karoly. 2009. Selection for alternate ribosomal RNA variants in the Northwest Larkspur *Delphinium nuttallii*. Society for the Study of Evolution, Moscow, ID, USA.

Brook T. Moyers — *Curriculum vitae*

Teaching & Mentoring

Formal mentoring

2016	Supervisor of CSU undergraduate Research Assistant
2009–15	Supervisor of seven UBC Work-Learn undergraduate Research Assistants
2011–12	UBC Independent Study Student (De Wet Van Niekerk) Project: Comparative drought tolerance in <i>Helianthus winterii</i>
Fall 2011	Field Research Assistant (Richard Sinclair, Texas A&M Kingsville) Project: Geographic distribution of <i>H. argophyllus</i> seed predators
Summer 2011	Field Research Assistant (Audrey Kelly, University of Rochester) Project: Measuring selection in natural populations
Summer 2010	NSERC Undergraduate Summer Research Awardee (Sonja Rummel) Project: Hybridization in sympatric annual sunflowers

Curriculum Development

Evolutionary Ecology, CSU, with John McKay and Cameron Ghalambor (2015–16)

- Evaluated curriculum and student learning outcomes
- Developed quantitative genetics problem set

Evolutionary Processes in Plants, UBC, with Loren Rieseberg (2014–15)

- Developed assignments, quizzes & structure for in-class discussion
- Instituted pre-assessment survey, unit evaluations & summative evaluations

Fundamentals of Evolution, UBC, with Greg Bole (2014)

- Modified tutorial materials to align with learning objectives

Genetics, Evolution & Ecology, UBC, with Jim Cooke (2014)

- Developed active-learning modules on genetic drift and gene flow

Data and Software Carpentry Workshops

2017	Instructor, Data Carpentry Workshop at the Aspen Global Change Institute (5–6 Jan, Basalt, CO)
2016	Assistant, Software Carpentry Workshop at CSU College of Agriculture (28–28 Jul, Fort Collins, CO)
2014	Assistant, Software Carpentry Workshop at UBC Biodiversity Centre (6–7 Nov, Vancouver, BC)

Guest Instructor, UBC

Spring 2015	Evolutionary Processes in Plants (6 lectures)
Fall 2014	Fundamentals of Evolution (1 lecture)
Spring 2014	Genetics, Evolution & Ecology (2 class sessions)

Brook T. Moyers — *Curriculum vitae*

Teaching Assistant, UBC (student evaluations enclosed separately)

Five terms	Biology 336: Fundamentals of Evolution (Three tutorials; Senior TA)
Two terms	Biology 415: Evolutionary Processes in Plants (Tutorial lead)
Fall 2014	Biology 209: Non-Vascular Plants (Two laboratory sections)
Spring 2010	Biology 210: Vascular Plants (Two laboratory sections)

Additional Teaching & Mentoring Experience

2016–	Seeds!, first grade classroom visits, Poudre School District
2009–15	Let's Talk Science Teacher Partnership Volunteer
2012–13	UBC Biology Teaching Assistant Professional Development Peer Mentor
2013	Volunteer Science Writing Tutor, UBC Writing Centre

Pedagogical Education

2015	Center for the Integration of Research, Teaching and Learning MOOC: Introduction to Evidence-Based Undergraduate STEM Teaching
2014	UBC Biology 535: Teaching and Learning in the Life Sciences
2012	UBC Biology Teaching Assistant Professional Development certificate
2009	Instructional Skills Workshop, University of British Columbia

Service & Community

2016–	Volunteer National Forest Service ranger, Canyon Lakes Ranger District
2014	California Native Plant Society Plant Status Reviewer
2011–14	Founding member of the UBC Reproducibility Group
2009–12	Organizer of the Vancouver Evolution Group Bi-monthly public science outreach event

Reviewer: Biology Letters, Evolution, Evolutionary Applications, Molecular Ecology, Molecular Ecology Resources, Evolutionary Ecology, Conservation Genetics, and the Biological Journal of the Linnaean Society

Member: Society for the Study of Evolution, American Society of Naturalists, Canadian Society for Ecology and Evolution, American Genetics Association