

**Christopher D. Muir** – *Curriculum Vitae*  
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### Contact Information

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### Appointments

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**Current**

Computational Biologist 2017 -  
*Poisson Consulting, Ltd.*

Honorary Research Associate 2017 -  
*Department of Botany, University of British Columbia*

**Past**

Postdoctoral Researcher, University of British Columbia 2015 - 2017  
Biodiversity Research Centre Postdoctoral Fellow 2013 - 2015  
*Postdoctoral advisors: Amy Angert, Sally Otto, Matt Pennell*

### Education

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**Indiana University, Ph.D. in Evolutionary Biology (Geology minor)** 2007 - 2013  
*Ecophysiology and genetics of phenotypic diversification in Solanum*  
*Committee: Leonie C. Moyle (advisor), Matthew W. Hahn, Michael Lynch, P. David Polly*

**College of William & Mary, B.S. in Biology, magna cum laude** 2002 - 2006  
*Honors thesis advisor: George W. Gilchrist*

### Grants, Fellowships, & Awards

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Society for the Study of Evolution Symposium on: 2016  
*“How and Why: Towards an evolutionary physiology synthesis”* (\$9000)

Biodiversity Postdoctoral Fellowship (UBC, \$100,000) 2013 - 2015

Adaptation to Changing Environments Fellowship (ETH) *declined*

Payne Dissertation Year Fellowship (IU, \$20,000) 2012 - 2013

Evo-Devo-Eco Network Research Exchange Experience (\$3000) 2011

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|---|-------------|
| Rosemary Grant Award from the Society for the Study of Evolution (\$2450) | 2010        |
| NSF Graduate Research Fellowship (\$120,000)                              | 2008 - 2012 |
| Charles B. Heiser Graduate Fellowship in Plant Evolution (IU, \$1000)     | 2008        |
| Indiana University Fellowship   | 2008        |
| METACYT Fellowship (IU)   | 2007        |
| Society for Systematic Biology Graduate Research Award (\$1650)           | 2007        |

## Publications

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- Preprint (in review or revision) **Muir CD** & AL Angert. Grow with the flow: a latitudinal cline in physiology is associated with more variable precipitation in *Erythranthe cardinalis*. In review at *Journal of Evolutionary Biology*.  
Preprint available: <http://dx.doi.org/10.1101/080952>
- Muir CD**, MÀ Conesa & J Galmés. Independent evolution of ab- and adaxial stomatal density enables adaptation. Revising for *New Phytologist*.  
Preprint available: <http://dx.doi.org/10.1101/034355>
- 2017 Guerrero RF, **CD Muir**, S Josway, LC Moyle. Pervasive antagonistic interactions among hybrid incompatibility loci. *PLoS Genetics*.  
<http://dx.doi.org/10.1371/journal.pgen.1006817>
- MÀ Conesa, **CD Muir**, EJ Roldán, A Molins, A Perdomo & J Galmés. Growth capacity in wild tomatoes and relatives correlates with original climate in arid and semi-arid species. *Environmental and Experimental Botany*.  
<http://dx.doi.org/10.1016/j.envexpbot.2017.04.009>
- Muir CD**, MÀ Conesa, EJ Roldán, A Molins & J Galmés. Weak coordination between leaf structure and function among closely related tomato species. *New Phytologist*. 213: 1642-1653.
- 2015 **Muir CD**. Making pore choices: repeated regime shifts in stomatal ratio. *Proceedings of the Royal Society of London B*. 282: 20151498.
- Muir CD** & M Thomas-Huebner (undergraduate co-author). Constraint around quarter-power allometric scaling in wild tomatoes (*Solanum* sect. *Lycopersicon*; Solanaceae). *The American Naturalist* 186: 421-433.
- 2014 **Muir CD** & MW Hahn. The limited contribution of reciprocal gene loss to increased speciation rates following whole genome duplication. *The American Naturalist*. 185: 70-86.
- Muir CD**, JB Pease, & LC Moyle. Quantitative genetic analysis indicates natural selection on leaf phenotypes across wild tomato species (*Solanum* sect. *Lycopersicon*; Solanaceae). *Genetics* 198: 1629-1643.

- Muir CD**, RP Hangarter, LC Moyle & PA Davis. Morphological and anatomical determinants of mesophyll conductance in wild relatives of tomato (*Solanum* sect. *Lycopersicon* and sect. *Lycopersicoides*). *Plant, Cell & Environment* 37: 1415-1426.
- 2013 **Muir CD**. How did the Swiss cheese plant get its holes? *The American Naturalist* 181:273-281.
- 2012 Hahn MW, BJ White, **CD Muir** & NJ Besansky. No evidence for biased co-transmission of speciation islands in *Anopheles gambiae*. *Phil. Trans. R. Soc. B.* 367: 374-384.
- 2010 Moyle LC & **CD Muir**. Reciprocal insights into adaptation from agricultural and evolutionary studies in tomato. *Evolutionary Applications* 3: 409-421.
- Moyle LC, **CD Muir**, MV Han & MW Hahn. The contribution of gene movement to the 'Two Rules of Speciation'. *Evolution* 64: 1541-1557.
- 2009 **Muir CD** & LC Moyle. Antagonistic epistasis for ecophysiological trait differences between *Solanum* species. *New Phytologist* 183: 789-802.
- Wilczek AM *et al.* (author 7 of 18). Effects of genetic perturbation on seasonal life history plasticity. *Science* 323: 930-934.
- Protocols **Muir CD** 2012. Estimating mesophyll conductance using combined gas exchange and  
*not* chlorophyll fluorescence measurements. Available at: <http://edenrcn.com/protocols/>.  
*peer-reviewed*

### **Invited Seminars & Conference Presentations**

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#### **Total of 17 invited seminars**

2017: Univ of Virginia; Rice Univ; Purdue Univ

2016: Univ of Arizona; Univ of Arkansas; Univ of Wyoming; Univ of Pittsburgh

2015: Virginia Tech; Univ of Texas, Arlington; Univ California, Davis; Purdue Univ

2014: ETH Zürich; FAB\* Lab (Simon Fraser Univ); Harvard Univ. Herbarium; Univ of British Columbia, Michigan State Univ

2012: Univ of Virginia EEBio Seminar

#### **Total of 11 conference presentations**

Evolution (7 times)

2006 - 2016

Botany

2015

American Society of Naturalists: 21<sup>st</sup>-century Naturalists (Asilomar, CA)

2014

Society for Integrative and Comparative Biology (San Francisco, CA)

2013

Ecological Genomics Symposium (Kansas City, KS)

2012

## Press Coverage

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BBC Nature: [“Why Swiss cheese plants are full of holes”](#)

Discover: [“Why Do Houseplants Have Holey Leaves?”](#)

*New Phytologist*: “Plant evolutionary ecology: molecular genetics, global warming and invasions, and the novel approaches we are using to study adaptations” ([link](#))

## Professional Activities, Affiliations & Outreach

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Editor for *Axios Review* (2016 - 2017)

External reviewer for: NSF Division of Environmental Biology, Austrian Science Fund (FWF)

Reviewer for *PLOS Biology*, *Evolution*, *Plant Physiology*, *New Phytologist*, *Global Ecology and Biogeography*, *Journal of Evolutionary Biology*, *Molecular Biology and Evolution*, *Molecular Ecology*, *Theoretical Population Biology*, *PLOS ONE*, *Applications in Plant Sciences*, *Botany*, *Scientific Reports*

Co-organizer, 2013, 2014, 2015 [SFU/UBC/UVic Ecology and Evolution Retreat](#)

Organized UBC Biodiversity Lunchtime Internal Seminar Series ([BLISS](#))

Member of *SSE*, *ASN*, and *BSA*

Lecturer for Café Scientifique Vancouver (<http://blogs.ubc.ca/cafesci/>)

Guest lecturer for Zool 502: Skills and Concepts for Advanced Ecology (UBC)

## Undergraduate Mentorship & Teaching Experience

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| 2017 | Selina Dhanani, Alyson Eng, Geety Hafizi, Emily Okun, and Kaya Van Roost |
| 2016 | Vicki Thill and Austin Koontz (Univ Nevada-Reno undergraduates)          |
| 2015 | Courtney van den Elzen (UBC Work-learn students)                         |
| 2014 | Lisa Lin and Erin Warkman (UBC Work-learn students)                      |
| 2012 | Meret Thomas-Huebner (IU) through NSF REU program                        |
| 2008 | Assistant Instructor for L318: Evolution                                 |
| 2007 | Assistant Instructor for L111: Evolution and Diversity                   |