

# Paul D. Blischak

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## Education

2018 – Ph.D., Evolution, Ecology, & Organismal Biology (EEOB), The Ohio State University (OSU). Graduate minor in Statistics.

2012 – B.Sc., Mathematics, The Ohio State University. Minors: Statistics, Spanish.

## Professional Experience

2017–current – Distinguished University Fellow, Dept. of EEOB, OSU.

2015–2017 – Graduate Research Associate, Dept. of EEOB, OSU.

2014 – Teaching Associate, MBI Undergraduate Summer Program (Phylogenetics Lab), OSU.

2013–2015 – Graduate Teaching Associate, Dept. of EEOB, OSU.

2012–2013 – Distinguished University Fellow, Dept. of EEOB, OSU.

2011–2012 – Undergraduate Research Fellow, RUMBA Program, OSU.

## Publications

### [Google Scholar](#)

9. Titus, B. M., **P. D. Blischak**, and M. Daly. *In Review*. Genomic signatures of sympatric speciation with historical and contemporary gene flow in a tropical anthozoan.
8. **Blischak, P. D.\***, M. E. Mabry\*, G. C. Conant, and J. C. Pires. *In Press*. Integrating networks, phylogenomics, population genomics for the study of polyploidy. *Annual Review of Ecology, Evolution, and Systematics*. \*Co-first authors.
7. **Blischak, P. D.**, M. Latvis, D. F. Morales-Briones, J. C. Johnson, V. S. Di Stilio, A. D. Wolfe, and D. C. Tank. 2018. Fluidigm2PURC: automated processing and haplotype inference for double-barcoded PCR amplicons. *Applications in Plant Science* 6:e1156.
6. **Blischak, P. D.**, J. Chifman, A. D. Wolfe, and L. S. Kubatko. *In press*. HyDe: a Python package for genome-scale hybridization detection. *Systematic Biology*: <https://doi.org/10.1093/sysbio/syy023>.
5. **Blischak, P. D.**, L. S. Kubatko, and A. D. Wolfe. 2018. SNP genotyping and parameter estimation in polyploids using low-coverage sequencing data. *Bioinformatics* 34:407–415.
4. Latvis, M., S. J. Jacobs, S. M. E. Mortimer, M. Richards, **P. D. Blischak**, S. Mathews, and D. C. Tank. 2017. Primers for single-copy nuclear loci in *Castilleja* and their utility across Orobanchaceae. *Applications in Plant Sciences* 5:1700038.
3. Wolfe, A. D., T. Necamp, S. Fassnacht, **P. D. Blischak**, and L. S. Kubatko. 2016. Population genetics of *Penstemon albomarginatus* (Plantaginaceae), a rare Mojave Desert species of conservation concern. *Conservation Genetics* 17:1245–1255.

2. **Blischak, P. D.**, L. S. Kubatko, and A. D. Wolfe. 2016. Accounting for genotype uncertainty in the estimation of allele frequencies in autopolyploids. *Molecular Ecology Resources* 16:742–754.
1. **Blischak, P. D.**, A. J. Wenzel, and A. D. Wolfe. 2014. Gene prediction and annotation in *Penstemon* (Plantaginaceae): a workflow for marker development from extremely low-coverage genome sequencing. *Applications in Plant Sciences* 2:1400044.

## Selected Presentations

(\*presenting author)

8. Wolfe, A. D.\*, **P. D. Blischak**, A. J. Wenzel, and L. S. Kubatko. August 2017. Update on phylogenetics of *Penstemon* (Plantaginaceae) from high-throughput sequencing. Botany 2017. Fort Worth, TX.
7. **Blischak, P. D.\***, J. Chifman, A. D. Wolfe, and L. S. Kubatko. June 2017. Detecting hybridization using phylogenetic invariants. Evolution 2017. Portland, OR. **figshare**, doi: <https://doi.org/10.6084/m9.figshare.5151724.v2>.
6. **Blischak, P. D.\*** and L. S. Kubatko. June 2017. Hybridization detection with HyDe. Evolution 2017. Portland, OR. **figshare**, doi: <https://doi.org/10.6084/m9.figshare.5144215.v1>.
5. **Blischak, P. D.\***, L. S. Kubatko, and A. D. Wolfe. June 2016. Developing models for genotype uncertainty, inbreeding, and allelic inheritance in non-model polyploids. Evolution 2016. Austin, TX. **figshare**, doi: <https://dx.doi.org/10.6084/m9.figshare.3436619.v1>.
4. **Blischak, P. D.\*** April 2016. Hierarchical models for genotype uncertainty in autopolyploids. NHS meeting, Dept. of Human Genetics, Univ. of Chicago. Chicago, IL.
3. **Blischak, P. D.\***, L. S. Kubatko, and A. D. Wolfe. July 2015. Estimating allele frequencies in non-model autopolyploids using high throughput sequencing data. Botany 2015. Edmonton, Alberta. **figshare**, doi: <http://dx.doi.org/10.6084/m9.figshare.1495514>.
2. **Blischak, P. D.\***, A. D. Wolfe, and L. S. Kubatko. July 2014. Inferring large phylogenies under the coalescent model using SNPs from next-generation sequence data. Botany 2014: Boise, ID. **figshare**, doi: <http://dx.doi.org/10.6084/m9.figshare.1436072>.
1. **Blischak, P. D.\***, A. J. Wenzel, M. R. Stevens, and A. D. Wolfe. August 2013. How low can you go? Gene predictions and putative annotations in four species of *Penstemon* (Plantaginaceae) from ultra low-coverage 454 sequencing. Botany 2013: New Orleans, LA.

## Software

**HyDe**: hybridization detection using phylogenetic invariants. Available on GitHub (<https://github.com/pblischak/HyDe>) and PyPI (<https://pypi.python.org/pypi/phyde>).

**QCF**: estimation of quartet concordance factors. Available on GitHub (<https://github.com/pblischak/QCF>).

**EBG**: empirical Bayes genotyping of biallelic SNPs in polyploids. Available on GitHub (<https://github.com/pblischak/polyploid-genotyping>).

**Fluidigm2PURC**: automated processing and haplotype inference for double-barcoded PCR amplicons. Available on GitHub (<https://github.com/pblischak/fluidigm2purc>).

**Polyfreqs**: an R package for Bayesian population genomics in autopolyploids. Available on GitHub (<https://github.com/pblischak/polyfreqs>) and CRAN (<https://cran.r-project.org/package=polyfreqs>).

## Grants and Awards

2017 – Dept. of EEOB Osburn Award for Excellence in Research (\$1,500.00).

2016 – NSF Doctoral Dissertation Improvement Grant (\$20,020.00).

2015 – ASPT Graduate Student Research Grant (\$800.00).

2014 – SSB Graduate Student Research Award (\$1,915.00).

2014 – NSF Graduate Research Fellowship, Honorable Mention.

2014 – NIMBioS Visiting Graduate Student Fellowship (advised by Dr. Brian O'Meara).

2013 – Beatley Award for Field Work in Plant Systematics, OSU Herbarium (\$1,050.00).

2012 – Distinguished University Fellowship, OSU Graduate School.

2011 – Undergraduate Research Fellowship, RUMBA Program, OSU.

## Service

2016 – Graduate Student Representative: Admissions Committee.

2015 – Graduate Student Representative: Advisory Committee; Graduate Student Advisor: Undergraduate Evolution and Ecology Club.

2014 – Judge: OSU Denman Undergraduate Research Forum.

2014 – Graduate Student Representative: Diversity Committee.

2013 – Volunteer: OSU Museum of Biological Diversity Open House.

2013 – Graduate Student Representative: Seminar Committee.

**Journal reviews** – *American Journal of Botany*, *Applications in Plant Sciences*, *BMC Bioinformatics*, *BMC Evolutionary Biology*, *Frontiers in Genetics*, *Molecular Ecology*, *Molecular Ecology Resources*, *Molecular Phylogenetics and Evolution*, *PeerJ*, *Systematic Biology*.

## Undergraduate Mentoring

2017: Derianna Hightower; 2016–2017: Alex Ward; 2015–2017: Coleen Thompson and Emiko Waight; 2014: Naharika Padmalwar and Benjamin Stone; 2013 Evan Carfagno and Benjamin Stone; 2012 Erin Harvey and Shannon Kilkenny.

## Membership

American Penstemon Society (APS), American Society of Plant Taxonomists (ASPT), Botanical Society of America (BSA), Society of Systematic Biologists (SSB).

*Last updated: 19 July, 2018.*