

Paul D. Blischak

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Education

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

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

8. **Blischak, P. D.**, M. Latvis, D. F. Morales-Briones, J. C. Johnson, V. S. Di Stilio, A. D. Wolfe, and D. C. Tank. *In review*. Fluidigm2PURC: automated processing and haplotype inference for double-barcoded PCR amplicons. Preprint on bioRxiv: <https://doi.org/10.1101/242677>.
7. **Blischak, P. D.***, M. E. Mabry*, G. C. Conant, and J. C. Pires. *In review*. Polyploidy as a window into genome and network evolution. *Co-first authors.
6. **Blischak, P. D.**, J. Chifman, A. D. Wolfe, and L. S. Kubatko. *In review*. HyDe: a Python package for genome-scale hybridization detection. Preprint on bioRxiv: <https://doi.org/10.1101/188037>.
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>).

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 Evolutionary Biology*, *Molecular Ecology*, *Molecular Ecology Resources*, *Molecular Phylogenetics and Evolution*, *PeerJ*.

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), Society for the Study of Evolution (SSE).

Last updated: 30 January, 2018.