KEVIN ANDREW BIRD

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RESEARCH INTERESTS

Dissecting complex evolutionary phenomena like phenotypic plasticity, convergent evolution, secondary metabolites, and polyploidy using the strategies and methodology of systems biology, such as large-scale, multi-omic datasets and computational modeling.

EDUCATION

2017-Present **Ph.D** Horticulture and Ecology, Evolutionary Biology and Behavior Program, Michigan State University advisors: Patrick Edger and Robert VanBuren

2012-2016 **B.S**. Biological Sciences (*Cum laude* with University Honors) University of Missouri
B.A. Philosophy (*Cum laude* with University Honors) University of Missouri

RESEARCH EXPERIENCE

2017-Present **Graduate Research Assistant:** Michigan State University, Department of Horticulture and Ecology, Evolutionary Biology, and Behavior Program. Advisors: Patrick Edger and Robert VanBuren

2016-2017 **Fulbright fellow/visiting researcher**: VIB/Ghent University, Department of Plant Systems Biology. Advisor: Steven Maere
-Utilized novel techniques in computational systems biology to model evolution of gene regulatory network in the presence and absence of gen(om)e duplications

2015 (summer) **Research Assistant**: Cornell University, Plant Breeding and Genetics Section. Advisor: Michael Allen Gore
-*Brassica rapa* field trial and training in quantitative genetic techniques to perform Genome-Wide Association for glucosinolate and mineral nutrient traits

2013-2016 **Undergraduate Research Assistant**: University of Missouri Division of Biological Sciences. Advisor: J Chris Pires
- Led collaboration with Cornell University and USDA to investigate population structure and genetic diversity of a global diversity panel of *Brassica rapa*
- Performed bioinformatic analysis to probe utility of ITS genes for phylogenetic inference

2012-2013 **Lab Technician**: University of Missouri, Turf Grass Pathology Lab. Supervisor: Lee Miller
- Responsible for fungal tissue culture, DNA isolation, gel electrophoresis

PUBLICATIONS

Bird KA, Beissinger T, and Angelovivici R. (2017) Subset-based genomic prediction provides insights into the genetic architecture of free amino acid levels in dry Arabidopsis thaliana seeds. Genes|Genomes|Genetics (**In Review)**

Bird KA, An H, Gazave E, Gore MA, Pires JC, Robertson LD and Labate JA (2017). Population structure and phylogenetic relationships in a diverse panel of Brassica rapa L. Front. Plant Sci. 8:321. doi: 10.3389/fpls.2017.00321

Washburn JD, **Bird KA**, Conant G, Pires JC. 2016 Convergent Evolution and the Origin of Complex Phenotypes in the age of Systems Biology. International Journal of Plant Sciences 177 (4), 000-000

Edger PP*, Tang M*, **Bird KA**, Mayfield DR, Conant G, Mummenhoff K, Koch M, Pires JC. 2014 Secondary Structure Analyses of the Nuclear rRNA Internal Transcribed Spacers and Assessment of Its Phylogenetic Utility across the Brassicaceae (Mustards). *PLoS ONE* 9(7): e101341

*These authors contributed equally to this work

SCHOLARSHIPS AND AWARDS

2017-2022	**University Distinguished Fellowship,** Michigan State University, $80,000
2016-2021	**National Science Foundation Graduate Research Fellowship** National Science Foundation, $138,000
2016-2017	**Fulbright US Student Award**, Department of State Bureau of Educational and Cultural Affairs, $14,389
2016	**Young Botanist of the Year Award**, Botanical Society of America
2016	**Professor Stanley Zimmering Prize for Outstanding Senior in Biological Sciences**, University of Missouri, $500
2016	**Award for Academic Distinction**, University of Missouri
2015	**Barry Goldwater Excellence in Education Scholarship** Honorable Mention, Barry Goldwater Scholarship and Excellence in Education Foundation
2015	**American Society of Plant Biologists Summer Undergraduate Research Fellowship**, American Society of Plant Biologists, $4,000
2014-2015	**HHMI C3 Hughes Research Fellowship**, University of Missouri, $8,000
2013-2014	**Monsanto Undergraduate Research Fellowship**, University of Missouri, $2,800

GRANTS

2015	Honors College Student Experiential Learning Award, University of Missouri, $500
2015	Douglas D. Randall Young Scientist Development Grant, University of Missouri, $500
2014	Mizzou Advantage Undergraduate Travel Grant, University of Missouri, $360
2014	Office of Undergraduate Research Travel Grant, University of Missouri, $250

TEACHING EXPERIENCE

2016 (fall)	Teaching Assistant, Phil 4400: Philosophy of Science. University of Missouri
2015 (spring)	Teaching Assistant, GnHnrs2850: Finding the Story in Science. University of Missouri
2014-2015	Supplemental Instructor, BioSci 2200: General Genetics. University of Missouri
2014-2016	Tutor, BioSci 2200: General Genetics. University of Missouri

ORAL PRESENTATION

2016	Botany 2016, Botanical Society of America, Savannah, GA **Title:** Association Mapping and Population Genetics of the Vegetable Crop *Brassica rapa.*
2014	Saturday Morning Science, University of Missouri, Columbia MO **Title:** Decoding Science: Talking Outside the Box.

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POSTERS

2016 Plant Biology 2016, American Society of Plant Biologists, Austin TX
Title: Population Genetics and Association Mapping of Nutritional Traits in the Vegetable Crop *Brassica rapa*.

2015 Life Sciences Week, University of Missouri, Columbia MO
Title: Building the Foundation for Biofortification of *Brassica rapa*.

2015 University of Missouri Undergraduate Research and Creative Achievements Forum, Columbia, MO
Title: Laws? Where We're Going We don't Need Laws: How Biology Explains. 2015

2015 Undergraduate Research Day at the Capitol, Jefferson City, MO
Title: Finding the Best Genes for Estimating Evolutionary Relationships of Cruciferous Vegetables

2014 Botany 2014, Boise, ID
Title: Assessing the Phylogenetic Utility of the ITS Regions

2014 Evolution 2014, Raleigh, NC
Title: Assessing the Phylogenetic Utility of the ITS Regions

RELATED EXPERIENCE

2016 1/4-1/8 Tucson Plant Breeding Institute, University of Arizona
2014 5/19-5/30 HHMI Summer Biomedical Informatics Institute, University of Missouri

RELEVANT SKILLS

Sequence alignment, Transcriptome assembly, SNP calling from Genotyping-By-Sequencing data, Detection of Selective sweeps, GWAS, Phylogeny construction, Genomic Prediction/Selection, Synteny analysis, DNA isolation, PCR, Gel electrophoresis Basic proficiency with R, python, & bash, proficiency with Unix operating systems and command line,

PROFRESSIONAL SERVICE

2017 NSF Graduate Research Fellowship reviewer, Michigan State University
2017 Professional Development Co-Chair, Horticulture Organization of Graduate Students, Michigan State University
2014-2016 Undergraduate Research Ambassador, University of Missouri

MEMBERSHIPS

American Society of Plant Biologists
Botanical Society of America
Society of Systematic Biologists