

KEVIN ANDREW BIRD

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Kevinabird.github.io

EDUCATION

- 2017-Present **Ph.D** Horticulture and Ecology, Evolutionary Biology and Behavior, 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 **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

1. **Bird KA**, Hardigan MA, Ragsdale AP, Knapp SJ, VanBuren R, & Edger PP (2021). Diversification, Spread, and Admixture of Octoploid Strawberry in the Western Hemisphere. *BioRxiv*.
2. McAlvay AC, Ragsdale AP, Mabry ME, Qi X, **Bird KA**, Velasco P, An H, Pires JC, Emshwiller E, Brassica Rapa domestication: untangling wild and feral forms and convergence of crop morphotypes, *Molecular Biology and Evolution*, 2021;, msab108, <https://doi.org/10.1093/molbev/msab108>

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3. **Bird KA.** (2021) No support for the hereditarian hypothesis of the Black-White achievement gap using polygenic scores and tests for divergent selection. *American Journal of Physical Anthropology*. 1-12. <https://doi.org/10.1002/ajpa.24216>
4. Hardigan MA, Lorant A, Pincot DDA, Feldmann MJ , Famula RA , Acharya CB , Lee S, Verma S , Vance M Whitaker VM, Bassil N, Zurn J, Cole GS , **Bird KA** , Edger PP , and Knapp SJ (2021) Unraveling the Complex Hybrid Ancestry and Domestication History of Cultivated Strawberry. *Molecular Biology and Evolution* <https://doi.org/10.1093/molbev/msab024>
5. **Bird KA**, Niederhuth CE, Ou S, Gehan M, Pires JC, Xiong Z, VanBuren R and Edger PP (2021), Replaying the evolutionary tape to investigate subgenome dominance in allopolyploid *Brassica napus*. *New Phytol.* <https://doi.org/10.1111/nph.17137>
6. Tichko P, **Bird KA**, Kohn G (2021). Beyond “Consistent With” Adaptation: Is There a Robust Test For Music Adaptation? *Behavioral and Brain Sciences*. (Comment on Mehr et al. 2019). In Press
7. Hardigan MA, Feldmann MJ, Lorant A, **Bird KA**, Famula R, Acharya C, ... & Knapp SJ (2020). Genome Synteny Has Been Conserved Among the Octoploid Progenitors of Cultivated Strawberry Over Millions of Years of Evolution. *Frontiers in Plant Science*, 10, 1789.400776
8. Turner-Hissong SD, **Bird KA**, Lipka AE, King EG, Beissinger TM, & Angelovici R. (2020). Genomic prediction informed by biological processes expands our understanding of the genetic architecture underlying free amino acid traits in dry Arabidopsis seeds. *G3: Genes, Genomes, Genetics*, 10(11), 4227-4239.
9. Barbey, C, Lee, S, Verma, S, **Bird, KA**, Yocca, A E, Edger, PP, & Knapp SJ, Whitaker VM, Folta, K M (2019). Disease Resistance Genetics and Genomics in Octoploid Strawberry. *G3: Genes, Genomes, Genetics* volume 9, 3315-3332.
10. Edger PP, Poorten TJ, VanBuren R, Hardigan MA, Colle M, McKain MR, Smith RD, Teresi SJ, Nelson ADL, Wai CM, Alger EI, **Bird KA**, Yocca AE, Pumpin N, Ou S, Ben-Zvi G, Brodt A, Baruch K, Swale T, Shiue L, Acharya CB, Cole GS, Mower JP, Childs KL, Jiang N, Lyons E, Freeling M, Puzey JR & Knapp SJ. (2019) Origin and evolution of the octoploid strawberry genome *Nature Genetics* volume 51, 541-547
11. Colle M, Leisner CP, Wai CM, Ou S, **Bird KA**, Wang J, Wisecaver JH, Yocca AE, Alger EI, Tang H, Xiong Z, Callow P, Ben-Zvi G, Brodt A, Baruch K, Swale T, Shiue L, Song G, Childs KL, Schilmiller A, Vorsa N, Buell CR, VanBuren R, Jiang N, Edger PP. (2019) Haplotype-phased genome and evolution of phytonutrient pathways of tetraploid blueberry, *GigaScience*, , giz012, <https://doi.org/10.1093/gigascience/giz012>
12. **Bird KA**, VanBuren R, Puzey JR, Edger PP. (2018) The causes and consequences of subgenome dominance in hybrids and recent polyploids. *New Phytologist* doi:10.1111/nph.15256
13. Edger PP, McKain M, **Bird KA**, VanBuren R. (2018) Investigating the evolutionary dynamics of subgenomes in ancient polyploids: challenges and future directions. *Current Opinion in Plant Biology* 42. <https://doi.org/10.1016/j.pbi.2018.03.006>.
14. McAlvay A C, **Bird KA**, Poulsen G, Pires JC, & Emshwiller E. (2017, May). Barriers and prospects for wild crop relative research in Brassica rapa. In *VII International Symposium on Brassicas* 1202 (pp. 165-177).

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- 15. 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. *Frontiers in Plant Science*. 8:321. doi: 10.3389/fpls.2017.00321
 - 16. 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
 - 17. 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

2020	David and Marion Dilley Mentoring Scholarship, \$3,000
2019	NRT-IMPACTS Travel Award, Michigan State University, \$600
2018	Graduate Officer Fellowship, Michigan State University, \$2,000
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

2018/2019	Teaching Assistant, UGS 200: Molecular Phylogenetics & Evolution, Michigan State University
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

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- 2014-2015 Supplemental Instructor, BioSci 2200: General Genetics. University of Missouri
2014-2016 Tutor, BioSci 2200: General Genetics. University of Missouri

ORAL PRESENTATION

- 2020 MSU EEGB graduate student colloquium, East Lansing, MI
Title: The Mismeasure of genes: Debunking scientific racism with evolutionary genomic analysis
- 2019 5th Conference on Plant Genome Evolution, Elsevier, Sitges Spain
Title: Replaying the evolutionary tape with synthetic polyploids to investigate subgenome dominance
- 2019 Symposium on Evolution and Core Processes of Gene Expression, American Society for Biochemistry and Molecular Biology, East Lansing, MI
Title: Replaying the evolutionary tape in synthetic *Brassica napus* polyploids: How deterministic is subgenome dominance?
- 2018 Botany 2018, Botanical Society of America, Rochester, MN
Title: The causes and consequences of subgenome dominance in hybrids and recent polyploids
- 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.

POSTERS

- 2018 Plant Biology 2018, American Society of Plant Biologists, Montreal, Quebec
Title: Subset-based genomic prediction provides insights into the genetic architecture of free amino acid levels in dry *Arabidopsis thaliana* seeds
- 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, Botanical Society of America, Boise, ID

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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

2018 12/17-12/2 Genome Assembly Workshop, University of California Davis

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

PROFESSIONAL SERVICE

Ad hoc reviewer for *Journal of Experimental Botany*, *Genome Biology and Evolution*, and *G3: Genes|Genomes|Genetics*

2020 Ad-hoc Diversity, Equity and Inclusion working group for Horticulture Department at MSU
2020 NSF-GRFP working group mentor, Botanical Society of America
2020 Fulbright fellowship internal reviewer, University of Missouri
2020 Executive Committee Member EEBB Graduate Group
2019-2020 President, Graduate Employees Union, Michigan State University
2018-2019 Chief Information Officer, Graduate Employees Union, Michigan State University
2017-2019 NSF-GRFP reviewer, Michigan State University
2017-2018 Professional Development Co-Chair, Horticulture Organization of Graduate Students, Michigan State University
2014-2016 Undergraduate Research Ambassador, University of Missouri

PODCAST APPEARANCES

2020 *Ep. 107 *Arch and Anth pod* "In plant genomics, what are polyploidy and subgenome dominance?" and discussion about addressing scientific racism
<https://archandanth.com/episode-107-interview-with-kevin-bird/>
2020 Podcast appearance- *Personal finance for PhDs* "Healthy, Wealthy, and Wise: Choose a PhD Program That Will Support Your Personal and Professional Development" about unionization and advocacy when choosing graduate schools. <https://pfforphds.com/healthy-wealthy-and-wise-choose-a-phd-program-that-will-support-your-personal-and-professional-development/>
2019 *Podcast appearance Ep. 109 *Embrace the Void* to talk about "Human biodiversity" and the abuse of science to defend racist beliefs
<https://voidpod.com/podcasts/2019/9/25/ev-109-human-biodiversity-with-kevin-bird>

* related to diversity, inclusion and anti-racism

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OUTREACH

- 2020 Judge, Ozark Science and Engineering Fair, Junior and Senior division
- 2019 Biology on Tap, public research oral presentation *The Multi-million year evolutionary journey of the strawberry*
- 2019 Fascination in Plants Day at Michigan State, public demonstration and lessons about plants and plant genetics to a general public audience in East Lansing
- 2017-2018 Organized informal journal club, "Peer Rebrew" that focused on latest work in genomics and systems biology

NON-TECHNICAL WRITING

- 2021 *Not in Our Genes-Resisting the Narrative around Genome-wide Association Studies. *Science For The People* Vol. 23 No.3 Bio-politics pp. 47-50
<https://magazine.scienceforthepeople.org/vol23-3-bio-politics/genetic-basis-genome-wide-association-studies-risk/>
- 2020 Blog post- Commiserations, skepticism, and antirealism about genomics and Truth <https://kevinabird.github.io/2020/08/13/Truth-in-genomics.html>
- 2020 Blog post- *With Friends Like These: Comments on the Uproar over Stephen Hsu* <https://kevinabird.github.io/2020/06/16/With-Friends-Like-These-Comments-On-the-Uproar-Over-Stephen-Hsu.html>
- 2020 Blog post- *Evolutionary Psychology Needs to Earn its Name* <https://kevinabird.github.io/2020/04/27/Evolutionary-Psychology-Needs-To-Earn-Its-Name.html>
- 2020 The University of California at Santa Cruz Just Fired Scores of Graduate Workers for Striking. *Arc Digital* <https://medium.com/arc-digital/the-university-of-california-at-santa-cruz-just-fired-scores-of-graduate-workers-for-striking-4680db862278> (~1,200 views as of May 14th 2021)
- 2020 *Fighting Racist Pseudoscience With Actual Science: A Guide, review of *How to Argue with a Racist* by Adam Rutherford. *Arc Digital* <https://medium.com/arc-digital/fighting-racist-pseudoscience-with-actual-science-a-guide-2d18c509a781> (~7,700 views as of May 14th 2021)
- 2019 *Blog post- *The Hereditarian Hypothesis and Scientific Racism* <https://kevinabird.github.io/2019/12/18/The-Genetic-Hypothesis-and-Scientific-Racism.html>

* related to diversity, inclusion and anti-racism

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OTHER MEDIA

- 2019 *Collaboration on video series *Race is not Real* where I did a literature review and wrote a script discussing the realities and misconceptions about race and genetics
Intro: <https://www.youtube.com/watch?v=nWyoULD1JFo>
Part 1: <https://www.youtube.com/watch?v=J54OiDidcJs>
Part 2: <https://www.youtube.com/watch?v=8d8bnGTE8G8>
Combined ~11535 views as of May 14th 2021
- 2018 *Consulted for New York Times story *Why White Supremacists Are Chugging Milk (and Why Geneticists Are Alarmed)*
<https://www.nytimes.com/2018/10/17/us/white-supremacists-science-dna.html> also featured in
<https://www.nytimes.com/2018/10/18/insider/science-genetics-white-supremacy.html>

*** related to diversity, inclusion and anti-racism**

MENTORING

- 2018 Plant Genomics REU Mentor, Edger Lab
 Scott Teresi – Undergraduate student
- 2017-2021 Reviewed and provided feedback on over 24 NSF-GRFP applications, 5 Fulbright applications, and 4 graduate school admissions essays from students across the country

MEMBERSHIPS

American Society of Plant Biologists
Botanical Society of America