KEVIN ANDREW BIRD

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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
Dissertation work focusing on genome evolution in neopolyploids, with particular focus on subgenome dominance and resynthesized polyploid lines. Contributed to several genome projects, including leading the construction of a pan-genome for *Camelina sativa*

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. Fuentes A and **Bird KA** (2021) Heritability is a poor, if not unhelpful, measure of complex human behavioral processes. *Behavioral and Brain Sciences* (comment on Uchiyama et al. 2021 “Cultural Evolution of Genetic Heritability”) Accepted

2. **Bird KA**, Hardigan MA, Ragsdale AP, Knapp SJ, VanBuren R, & Edger PP (2021). Diversification, Spread, and Admixture of Octoploid Strawberry in the Western Hemisphere. *American Journal of Botany.* Accepted

3. 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

4. **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

5. 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

6. **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

7. 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 "Origins of Music in Credible Signaling"). In Press

8. 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

9. 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.

10. 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.

11. 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, Pumplin 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

12. 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

13. **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

14. 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.

15. 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).

16. **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

17. 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

18. 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

2021 Teaching Assistant, UGS 200: Molecular Phylogenetics & Evolution, Michigan State University
2019 Teaching Assistant, UGS 200: Molecular Phylogenetics & Evolution, Michigan State University
2018 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
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 EEBB 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
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

2021 7/20-7/30 **Humane Genetics Literacy Summer Institute, BSCS Science Learning**
Workshop focused on subject matter understanding and teaching of human genetics in a way that directly addresses misconceptions like genetic essentialism to reduce racial prejudice held by students.

2018 12/17-12/2 **Genome Assembly Workshop, University of California Davis**
Workshop teaching basics of third generation sequencing technologies (PacBio, Nanopore, 10X, HiC) and strategies for assembly of long-read genomes.

2016 1/4-1/8 **Tucson Plant Breeding Institute, University of Arizona**
Workshop covering quantitative genetics, statistics, experimental design and GWAS/QTL mapping for application in plant breeding

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, Biological Theory,* and *G3: Genes|Genomes|Genetics*

2020 **Ad-hoc Diversity, Equity and Inclusion working group for Horticulture Department at MSU**
Worked with select faculty and staff to determine structure and goals for

newly formed DEI committee in MSU Horticulture department. Helped conduct department climate survey to identify perceptions and concerns held by students.

2020 **NSF-GRFP working group co-mentor, Botanical Society of America**
Worked with groups of undergraduate students to review their GRFP applications and guide the editing and writing process for the final product.

2020 **Fulbright fellowship internal reviewer, University of Missouri**
Conducted mock interviews and reviewed fellowship applications for students applying for US Fulbright awards

2019-2020 **President, Graduate Employees Union, Michigan State University**
Leader of AFT local 6196 directly representing nearly 1,200 teaching assistants. Oversaw annual budget in excess of $300,000. Directly managed two full time staff organizers, Lead elected executive board to serve our members and address issues ranging from safety standards and labor practices during the beginning of the Covid-19 Pandemic to labor grievances and distribution of money for need-based solidarity grants. I also successfully amended the Union constitution to expand the executive board to include an International Student chair to prioritize International Student issues, Prioritized anti-racism and anti-oppression work in Union campaigns and institutional training, and during early Covid-19 pandemic directed unused budget for emergency financial relief grants to aide students.

2018-2019 **Chief Information Officer, Graduate Employees Union, Michigan State University**
Handled internal and external communications to our members during labor contract negotiation with MSU that occurs every four years. Wrote official press releases for union events and actions. Communicated to local media for press coverage of events and contract campaign. Organized text and phone banking campaigns and event pages for Union activities including rally, march, and teach-in events. Chaired the GEU publicity committee and directed active members of that committee.

2017-2019 **NSF-GRFP reviewer, Michigan State University**
Reviewed and edited NSF-GRFP application material for students across MSU's campus as part of formal MSU NSF-GRFP workshop

2017-2018 **Professional Development Co-Chair, Horticulture Organization of Graduate Students, Michigan State University**
Communicated professional development opportunities to graduate students in the department and handled the graduate student invited speaker for department seminar

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**

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 Blog post- Remembering Richard Lewontin https://kevinabird.github.io/2021/07/05/Remembering-Lewontin.html

2021 *Not in Our Genes-Resisting the Narrative around Genome-wide Association Studies. S*cience 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**

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

2021 Direct supervisor and mentor in Edger lab for:
Undergraduate Researcher Mitchell Alekman
Undergraduate Researcher Jaclyn Melasi

2018 Plant Genomics REU Mentor, Edger Lab
Undergraduate researcher Scott Teresi

2017-2021 Reviewed and provided feedback on over 30 NSF-GRFP applications, 14 Fulbright applications, and 4 graduate school admissions essays from students across the country

MEMBERSHIPS

American Society of Plant Biologists
Botanical Society of America