

KEVIN ANDREW BIRD

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Kevinabird.github.io

EDUCATION

- 2017-2022 **Ph.D** Horticulture and Ecology, Evolutionary Biology and Behavior, Michigan State University. Advisors: Patrick Edger and Robert VanBuren.
Dissertation: *Subgenome dominance and genome evolution in allopolyploids*
- 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

- 2022- **Postdoctoral Research Fellow:** University of California-Davis
Supervisors: Daniel J. Kliebenstein and J. Grey Monroe
- 2017-2022 **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
- 2015 **Research Assistant:** Cornell University, Plant Breeding and Genetics Section. Advisor: Michael Allen Gore
- 2013-2016 **Undergraduate Research Assistant:** University of Missouri Division of Biological Sciences. Advisor: J Chris Pires
- 2012-2013 **Lab Technician:** University of Missouri, Turf Grass Pathology Lab.
Supervisor: Lee Miller

PUBLICATIONS

- Bird KA**, Pires JC, VanBuren R, Xiong Z, & Edger PP. (2022). Gene balance in allopolyploids: Homoeologous exchanges show signs of dosage constraint and dosage constraint of biased homoeologs differs between subgenomes. *BioRxiv*.
- De Meyer S, Cruz DF, De Swaef T, Lootens P, De Block J, **Bird KA**, ... & Maere S. (2022). Predicting yield traits of individual field-grown *Brassica napus* plants from rosette-stage leaf gene expression. *BioRxiv*.
- Yim WC, Swain ML, Ma D, An H, **Bird KA**, Curdie DD, Wang S, Ham HD, Luzuriaga-Neira A, Kirkwood JS, Hur M, Solomon JKQ, Harper JF, Kosma DK, Alvarez-Ponce D, Cushman JC, Edger PP, Mason AS, Pires JC, Tang H, Zhang X. (2022) The final piece of the Triangle of U: Evolution of the tetraploid *Brassica carinata* genome, *The Plant Cell*, 2022;, koac249, <https://doi.org/10.1093/plcell/koac249>
- Bird KA***, MacKenzie Jacobs M*, Sebolt A, Rhoades K, Alger EI, Colle M, Alekman ML, Bies PK, Cario AJ, Chigurapat RS, Collazo DR, Finley S, Garland B, Hein KM, Hicks J,

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- Hillenberg AR, Kado LI, Kilian VR, Longueuil PF, Mahesha V, Mervak C, Munsell K, Patel RM, Peters NML, Steffes MO, Suryadevara S, Thummalapally A, Urban G, Walia AK, Wirsing TB, McKain MR, Iezzoni AF, Edger PP. (2022) *Parental origins of the cultivated tetraploid sour cherry (Prunus cerasus L.)*. *Plants, People, Planet*, 4(5), 444– 450
- 5 Fuentes A and **Bird KA** (2022). Heritability is a poor, if not unhelpful, measure of complex human behavioral processes. *Behavioral and Brain Sciences*, 45, E162. doi:10.1017/S0140525X21001564
 - 6 **Bird KA**, Hardigan MA, Ragsdale AP, Knapp SJ, VanBuren R, and Edger PP. (2021). Diversification, spread, and admixture of octoploid strawberry in the Western Hemisphere. *American Journal of Botany* 108(11): 2269- 2281. <https://doi.org/10.1002/ajb2.1776>
 - 7 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,
 - 8 **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. --(Top 0.5% AltMetric score for papers in this journal)
 - 9 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*
 - 10 **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*.
 - 11 Tichko P, **Bird KA**, & Kohn G (2021). Beyond “consistent with” adaptation: Is there a robust test for music adaptation? *Behavioral and Brain Sciences*, 44, E115.
 - 12 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
 - 13 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.
 - 14 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.
 - 15 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, Pumphlin 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

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- 16** 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, Schillmiller 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
- 17** **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
- 18** 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.
- 19** 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).
- 20** **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
- 21** 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
- 22** 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

2022-2025	National Science Foundation Postdoctoral Research Fellowship in Biology , National Science Foundation, \$216,000
2022	Bukovac Outstanding Graduate Student Award , Michigan state University, \$2,500
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	Honorable Mention: Barry Goldwater Excellence in Education Scholarship , 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

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GRANTS

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

2022	Guest lecture: " <i>Polyploidy</i> ". PLS 152- Plant Genetics, UC Davis
2018-2021	Teaching Assistant, UGS 200: Molecular Phylogenetics & Evolution, Michigan State University
FS2016	Teaching Assistant, Phil 4400: Philosophy of Science. University of Missouri
SP2015	Teaching Assistant, GnHrs2850: 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

INVITED PRESENTATIONS

2023	30 th Plant and Animal Genomes Conference - Brassica Workshops Title: Expression response to homoeologous exchange show signs of dosage constraint and dosage constraint of biased homoeologs differs between subgenomes
2022	<i>Disrupting Genomics: Bringing Critical and Theoretical Approaches into Practice</i> at American Association of Biological Anthropologists 2022 annual meeting (Symposium presentation) Title: Anti-racist genomics: responding to scientific racism in the 21 st century
2022	HTHSCI 3RH3: Racism and Health at McMaster University (guest lecture) Title: The Mismeasure of genes: genetics and scientific racism in the 21 st
2022	Harvard FXB Center for Health & Human Rights Title: The Mismeasure of genes: genetics and scientific racism in the 21 st
2022	Center for Population Biology- University of California Davis Title: Evolutionary impacts of genomic structural variation
2021	ANTH 350: Human Biology at University of New Mexico (guest lecture) Title: No support for the hereditarian hypothesis of the Black-White achievement gap using polygenic scores and tests for divergent selection

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ORAL PRESENTATIONS

- 2022 Plant Genomes Online 2022
Title: Gene dosage constraints affect the transcriptional response to allopolyploidy and homoeologous exchange in resynthesized *Brassica napus*
- 2020 MSU EEBC 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

- 2022 Biology of Genomes 2022, Cold Spring Harbor Labs, Cold Spring Harbor, NY
- 2018 Plant Biology 2018, American Society of Plant Biologists, Montreal, Quebec
- 2016 Plant Biology 2016, American Society of Plant Biologists, Austin TX
- 2015 Life Sciences Week, University of Missouri, Columbia MO
- 2015 University of Missouri Undergraduate Research and Creative Achievements Forum, Columbia, MO
- 2015 Undergraduate Research Day at the Capitol, Jefferson City, MO
- 2014 Botany 2014, Botanical Society of America, Boise, ID
- 2014 Evolution 2014, Raleigh, NC

RELATED EXPERIENCE

- June, 2021 **Humane Genetics Literacy Summer Institute, BSCS Science Learning**
Workshop focused on teaching of human genetics in a way that directly addresses misconceptions like genetic essentialism to reduce racial prejudice held by students.
- Dec, 2018 **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.
- Jan, 2016 **Tucson Plant Breeding Institute, University of Arizona**
Workshop covering quantitative genetics, statistics, experimental design and GWAS/QTL mapping for application in plant breeding

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May, 2014 **HHMI Summer Biomedical Informatics Institute, University of Missouri**

PROFESSIONAL SERVICE

Funding Agencies:

2022 Ad-hoc reviewer: National Science Foundation Division of Environmental Biology

2022 Ad-hoc reviewer: French National Research Agency (ANR)

Ad-hoc journal reviewer for *The Plant Cell*, *New Phytologist*, *Horticulture Research*, *Journal of Experimental Botany*, *Plant Biotechnology Journal*, *Theoretical and Applied Genetics*, *Genome Biology and Evolution*, *Communications Biology*, *Biological Theory*, *PLOS ONE*, *G3: Genes|Genomes|Genetics*, and *Frontiers in Plant Science*

- 2020 **Ad-hoc Diversity, Equity and Inclusion working group for Horticulture Department at MSU**
- 2020-2021 **NSF-GRFP working group co-mentor, Botanical Society of America**
- 2020-2022 **Fulbright fellowship internal reviewer, University of Missouri**
- 2019-2020 **President, Graduate Employees Union, Michigan State University**
*Representing over 1,200 graduate students. Oversaw annual budget in excess of \$200,000. Directly managed two full time staff organizers
- 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**

MENTORING

- 2021-2022 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
- 2017-2022 Reviewed and provided feedback on over 32 NSF-GRFP applications, 21 Fulbright applications, and 4 graduate school admissions essays from students across the country

OUTREACH

- 2020 Judge, Ozark Science and Engineering Fair, Junior and Senior division

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- 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

MEMBERSHIPS

Botanical Society of America
American Association of Biological Anthropologists

NON-TECHNICAL WRITING

- 2021 *The Genetic Lottery is a bust for both genetics and policy*, Review of *The Genetic Lottery* by Kathryn Paige Harden
<https://massivesci.com/articles/genetic-lottery-review-paige-harden-kevin-bird/>
- 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. *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 Jan 10th 2023)
- 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> (~7,900 views as of Jan 10th 2023)

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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**

PODCAST APPEARANCES

2022 *Left Reckoning: Stephen Jay Gould, Radical Scientists, & the Long Fight Against Reactionary Genetics* ft. Kevin Bird <https://youtu.be/YtW5wd0tCG8>
(2,600 views as of Jan 10, 2023)

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**

OTHER MEDIA

2021 *Collaboration on video "Debunking Race and IQ" where I criticize claims about genetics and race differences in IQ scores
<https://youtu.be/hj2JOQcqlYU> **(14,478 views as of Jan 10th, 2023)**

2021 *Collaboration on video *Is Critical Race Theory right about Race?* Where I discuss the misconceptions about race in the context of genetics and evolution: <https://www.youtube.com/watch?v=QyuTFQdwIjw>
(3,151 views as of Jan. 10th, 2023)

2019 *Collaboration on video series *Race is not Real* where I did a literature review and wrote a script discussing the 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 12,544 views as of Jan 10th 2023)

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**