Brook T. Moyers

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Education

2015	University of British Columbia, Vancouver, BC	PhD, Botany Advisor Loren Rieseberg
2007	Reed College, Portland, OR	BA, Biology Advisor Keith Karoly

Professional Appointments

2019–now	Assistant Professor of Biology, University of Massachusetts Boston
2017–2018	Associate Features Editor, *The Plant Cell*
2015–2018	Postdoctoral Fellow, NSF National Plant Genome Initiative, Colorado State University, Sponsor John McKay
2007–2008	Post-baccalaureate Fellow, NSF Frontiers in Integrative Bio. Research Max Planck Institute for Plant Breeding, PI Johanna Schmitt

Grants, Fellowships & Awards

2025	UMass Boston Manning Prize for Excellence in Teaching, USD $10,000
2024–2025	New England Botanical Society Junior Faculty Research Award: Local adaptation to metal contamination in *Salicornia depressa* and its rhizosphere. Role: PI, Budget: USD $5,000
2024	Nantucket Biodiversity Initiative Grant: Survey of salt marsh insect and insect-associated plant biodiversity. Role: PI, Budget: USD $3,355
2023–2024	UMass Boston EFCD Award: Soil Microbial Variation Across a Metal Contamination Gradient. Role: PI, Budget: USD $4,500
2023–2025	NIH National Cancer Institute U54 *Admin. Supplement to Enhance Institutional Data Science Capacity*: iTCGA: Integrated Training in Computational Genomics and Data Sciences PIs: Colón-Carmona & Macoska. Role: co-Inv, Budget: USD $581,237
2023–2024	DOE Joint Genomes Institute CSP New Investigator: Genome annotation of a bioremediating salt marsh plant. Role: PI, In-kind sequencing effort (75 RNA libraries)
2022–2025	USDA NIFA AFRI Postdoctoral Fellowship: Improving Seedling Vigor and Breeding Progress Through Seedling Phenomics in Switchgrass. Role: Sponsoring Mentor, Budget: USD $220,448. *Recommended for funding, declined*
2021–2022	UMass Boston Healey Research Grant: Mapping variation in *Salicornia depressa* population genetic structure. Role: PI, Budget: USD $10,000

2016	Genetics Society of America Trainee-Organized Symposia Award and American Genetics Association Special Event Award: Genomics of Adaptation to Human Contexts Symposium Role: Co-PI, Budget: USD $2,000 (GSA) and USD $4,000 (AGA)
2015–2018	NSF National Plant Genome Initiative Postdoctoral Research Fellowship: Using genotype and environment to predict water use physiology in rice. Award #1523752. Role: PI, Budget: USD $216,000.
2014	UBC Biology Graduate Student Teaching Award
2013	New Phytologist Prize for best student talk at Canadian Society for Ecology and Evolution meeting
2010–2013	NSF Graduate Research Fellowship, USD $121,000

Publications [†] *undergraduate mentee,* [‡] *graduate mentee*

Submitted, Revising, and Preprints (available on request)

1. Maguire[‡], Comerford, Shiue, Jin, Wimp, Murphy, **Moyers**, and Vidal. Improved, annotated reference genome for the highly polyphagous moth *Hyphantria cunea* (Fall webworm). Revising for *Journal of Heredity* (revision requested 29 August 2025).

2. Okinedo[‡] and **Moyers**. Pleiotropy and facilitation of local adaptation in the silverleaf sunflower *Helianthus argophyllus*. Revising for *Molecular Biology & Evolution* (revision requested 11 August 2025). Earlier version on *bioRxiv* doi: 10.1101/2025.05.22.655459v1.

3. Kimball-Rhines[‡] and **Moyers**. Missing the forest for the trees: A review and case study of state conservation law. Revising for *Oryx* (revision requested 22 July 2025).

4. Kimball-Rhines[‡] and **Moyers**. A population methylomic approach to plant diversity and divergence using Nanopore sequencing. Under review at *Molecular Ecology Resources* (submitted 15 July 2025).

5. **Moyers**, Henry, Raghavan, Zaw, Marrano, Leung, and McKay. Strong genotype by environment interactions in the rice Global MAGIC population across seedling stage drought. Preprint on *bioRxiv* doi: 10.1101/2022.02.07.479433.

Peer reviewed (see also my Google Scholar and Impactstory profiles)

1. Kimball-Rhines[‡], Palmer[‡], Taveras Guzman[†], Mello[†], Rojas Ramirez[†], Harkess, and **Moyers**. The annotated, chromosome-scale *Salicornia depressa* (American pickleweed) genome. Accepted at *Journal of Heredity* (30 August 2025). Manuscript available on request.

2. Interdisciplinary Plant Science Consortium (59 authors including **Moyers**). 2023. Inclusive collaboration across plant physiology and genomics: Now is the time! *Plant Direct* 7(5): e493. doi:10.1002/pld3.493

3. Bartlett, **Moyers**, Man, Subramaniam, and Makunga. 2023. The power and perils of *de novo* domestication using genome editing. *Annual Review of Plant Biology* 74: 1. doi:10.1146/annurev-arplant-053122-030653

4. The Global Urban Evolution Project (Santangelo, *et al*.: 287 author collaboration led by Marc Johnson, including **Moyers**). 2022. Global urbanization drives parallel environmental and evolutionary change. *Science* 375(6586): 1275. doi:10.1126/science.abk0989

5. Marrano and **Moyers**. 2022. Scanning the rice Global MAGIC population for dynamic genetic control of seed traits under vegetative drought. 2022. *The Plant Phenome Journal* 5(1): e20033. doi:10.1002/ppj2.20033

6. Hübner, Bercovich, Todesco, Mandel, Odenheimer, Ziegler, Lee, Baute, Owens, Grassa, Ebert, Ostevik, **Moyers**, Yakimowski, Masalia, Gao, Calic, Bowers, Kane, Swanevelder, Kubach, Muños, Langlade, Burke, and Rieseberg. 2019. Sunflower pan-genome analysis shows that hybridization altered gene content and disease resistance. *Nature Plants* 5: 54. doi:10.1038/s41477-018-0329-0

7. Price, **Moyers**, Lopez, Lasky, Monroe‡, Mullen, Oakley, Lin, Ågren, Schrider, Kern, and McKay. 2018. Combining population genomics and fitness QTLs to identify the genetics of local adaptation in *Arabidopsis thaliana*. *PNAS* 115(19): 5028. doi:10.1073/pnas.1719998115

8. **Moyers**, Morrell, and McKay. 2017. Genetic costs of domestication and improvement. *Journal of Heredity* 109(2): 103. doi:10.1093/jhered/esx069

9. Monroe‡, Allen, Tanger, Mullen, Lovell, **Moyers**, Whitley, and McKay. 2017. TSPmap, a tool making use of traveling salesperson problem solvers in the efficient and accurate construction of high-density genetic linkage maps. *BioData Mining* 10: 38. doi:10.1186/s13040-017-0158-0

10. **Moyers***, Owens*, Baute, and Rieseberg. 2017. The genetic architecture of UV floral patterning in sunflower. *Annals of Botany* 120(1): 39. doi:10.1093/aob/mcx038 *co-first authors

11. Tanger, Klassen, Mojica, Lovell, **Moyers**, Baraoidan, Naredo, McNally, Poland, Bush, Leung, Leach, and McKay. 2017. Field-based high throughput phenotyping rapidly identifies genomic regions controlling yield components in rice. *Scientific Reports* 7: 42839. doi:10.1038/srep42839

12. **Moyers** and Rieseberg. 2016. Remarkable life history polymorphism may be evolving under divergent selection in the silverleaf sunflower. *Molecular Ecology* 25: 3817. doi:10.1111/mec.13723

13. Todesco*, Pascual*, Owens*, Ostevik*, **Moyers***, Hübner*, Heredia*, Hahn*, Caseys*, Bock*, and Rieseberg. 2016. Hybridization and extinction. *Evolutionary Applications*: 9: 892. doi:10.1111/eva.12367 * authors in reverse-alphabetical order

14. **Moyers** and Rieseberg. 2013. Divergence in gene expression is uncoupled from divergence in coding sequence in a secondarily woody sunflower. *International Journal of Plant Science* 174: 1079. doi:10.1086/671197

15. Renaut, Grassa, Yeaman, **Moyers**, Lai, Kane, Bowers, Burke, and Rieseberg. 2013. Genomic islands of divergence are not affected by geography of speciation in sunflowers. *Nature Communications* 4: 1827. doi:10.1038/ncomms2833

16. Vines, Andrew*, Bock*, Franklin*, Gilbert*, Kane*, Moore*, **Moyers***, Renaut*, Rennison*, Veen*, and Yeaman*. 2013. Mandated data archiving greatly improves access to research data. *The FASEB Journal* 27: 1304. doi:10.1096/fj.12-218164
* authors in alphabetical order, UBC Reproducibility Group

17. Ziebell, Barb, Sandhu, **Moyers**, Sykes, Doeppke, Gracom, Carlile, Marek, Davis, Knapp, and Burke. 2013. Sunflower as a biofuels crop: An analysis of lignocellulosic chemical properties. *Biomass and Bioenergy* 59: 208. doi:10.1016/j.biombioe.2013.06.009

18. Fournier-Level, Wilczek, Cooper, Roe, Anderson, Eaton, **Moyers**, Petipas, Schaeffer, Pieper, Reymond, Koornneef, Welch, Remington, and Schmitt. 2013. Paths to selection on life history loci in different natural environments across the native range of *Arabidopsis thaliana*. *Molecular Ecology* 22: 3552. doi:10.1111/mec.12285
19. Ostevik, **Moyers**, Owens, and Rieseberg. 2012. Parallel ecological speciation in plants? *International Journal of Ecology* 2012: Article ID 939862. doi:10.1155/2012/939862
20. Gilbert, Andrew*, Bock*, Franklin*, Kane*, Moore*, **Moyers***, Renaut*, Rennison*, Veen*, and Vines*. 2012. Recommendations for utilizing and reporting population genetic analyses: the reproducibility of genetic clustering using the program Structure. *Molecular Ecology* 21: 4925. doi:10.1111/j.1365-294X.2012.05754.x
    * authors in alphabetical order, UBC Reproducibility Group
21. Renaut, Grassa, **Moyers**, Kane, and Rieseberg. 2012. The population genomics of sunflowers and genomic determinants of protein evolution revealed by RNA-Seq. *Biology* 1: 575. doi:10.3390/biology1030575
22. Wilczek, Roe, Knapp, Cooper, Lopez-Gallego, Martin, Muir, Sim, Walker, Anderson, Egan, **Moyers**, Petipas, Giakountis, Charbit, Coupland, Welch, and Schmitt. 2009. Effects of genetic perturbation on seasonal life history plasticity. *Science* 323: 930. doi:10.1126/science.1165826

Non-peer reviewed

1. Marrano, Palmer‡, and **Moyers**. 2020. *News and Views*: Stacking up RADSeq assembly programs: From complete hit to completely abysmal. *Molecular Ecology Resources* 20(2): 357. doi:10.1111/1755-0998.13140
2. **Moyers**. 2018. *In Brief*: Camoco: A Net for the Sea of Candidate Genes. *The Plant Cell.* doi:10.1105/tpc.18.00908
3. **Moyers**. 2018. *In Brief*: Is Genetic Evolution Predictable? *The Plant Cell*. doi:10.1105/tpc.18.00438
4. **Moyers**. 2018. *In Brief*: Symphony of the regulators: How do plants control complex responses to environmental signals? *The Plant Cell*. doi:10.1105/tpc.00125.2018
5. Turner, Schell, and **Moyers**. 2018. *Introduction to Special Issue*: Genomics of Adaptation to Human Contexts. *Journal of Heredity* 109(2): 101. doi:10.1093/jhered/esx113
6. **Moyers**. 2015. The landscape of divergence in silverleaf sunflowers. Monograph at University of British Columbia Library. 166 pp.
7. **Moyers** and Kane. 2010. *Perspective*: The genetics of adaptation to novel environments: selection on germination timing in *Arabidopsis thaliana*. *Molecular Ecology* 19: 1270. doi: 10.1111/j.1365-294X.2010.04558.x
8. **Moyers**. 2007. Clinal variations in ribosomal RNA in the Northwest Larkspur *Delphinium nuttallii*: selection or drift? Monograph at Reed College Library. 78 pp.

Conferences

Organizer

Genomics of Adaptation to Human Contexts Symposium, Colorado State University, Fort Collins, CO, USA, 28–30 July 2016.

Talks since 2019 (invited or competitive) [†] *undergraduate mentee,* [‡] *graduate mentee*
First author is presenter

Okinedo[‡] and **Moyers**. From heat stress to iron deficiency: how computer vision can help improve phenotyping. IRRI-India Rice breeding and genetics seminar (5 June 2024).

Moyers. Evolutionary genetics in a dynamic world. Given as part of seminar series at: University of New Hampshire Department of Molecular, Cellular, and Biomedical Sciences (29 Mar 2024), University of Connecticut Ecology and Evolutionary Biology Department (14 Sep 2023), and University of Cologne Institute for Plant Sciences (23 Jan 2023).

Kimball-Rhines[‡], Palmer[‡], and **Moyers**. Genomes for Marsh Conservation. Nantucket Biodiversity Initiative workshop (29 Aug 2023).

Okinedo[‡] and **Moyers**. Discovering the genetic basis of rice grain shape. Corteva Student Showcase at Plant Biology ASPB conference (6 Aug 2023).

Moyers. Dynamic quantitative genetics of rice under stress. Gordon Research Conference on Salt & Water Stress in Plants, Les Diablerets, Switzerland (24 May 2022).

Moyers. Methods for ecology and evolution in microbial communities. UC San Diego Division of Biological Sciences virtual seminar (18 May 2021).

Moyers. Dynamic quantitative genetics of rice under stress. Given as part of seminar series at the Plant Science virtual seminar series at Michigan State University (15 Jan 2021), the Arnold Arboretum of Harvard University (10 Feb 2020), and the University of Massachusetts Amherst Plant Biology Program (13 Feb 2020).

Moyers. High-throughput phenotyping in agriculture. UMass Boston Fall 2019 Engineering Colloquium (22 Nov 2019).

Moyers, Henry, Klassen, and McKay. G x E in the rice Global MAGIC population under drought stress. Dale Bumpers National Rice Research Center seminar (15 May 2019).

Moyers, Henry, and McKay. Of rice and men: using complex genetic populations in crop improvement. Phenome 2019, Tucson, AZ.

Talks since 2019 (contributed) [†] *undergraduate mentee,* [‡] *graduate mentee*
First author is presenter

Okinedo[‡], **Moyers**, Sharma, Balaraju, Bura, Pahi, Singh A., Singh V., and Sinha. Integrating Computer Vision and Genomics to Dissect Iron Chlorosis in Direct Seeded Rice. 88th Northeastern Section American Society of Plant Biologists symposium 2025, Durham, NH.

Moyers, Kimball-Rhines[‡], and Palmer[‡]. Genetic kinship predicts methylation patterns in the pickleweed *Salicornia depressa*. Northeast Estuarine Research Society Meeting 2025, Provincetown, MA.

Okinedo[‡], **Moyers**, Sharma, Balaraju, Bura, Pahi, Singh, Adeyemo, Kumar, and Sinha. AI-Based Trait Mapping of Iron Deficiency Tolerance in Direct Seeded Rice (DSR). ASA, CSSA, SSSA International Annual Meeting 2024, San Antonio, TX.

Moyers, Kimball-Rhines[‡], Mello[†], and Taveras Guzman[†]**.** Genetic kinship predicts methylation patterns in the pickleweed *Salicornia depressa*. Evolution 2024, Montreal, QC, Canada.

Kimball-Rhines[‡], Mello[†], Taveras Guzman[†], Rojas[†], Palmer[‡], and **Moyers.** Six Hot Tips learned from assembling a tetraploid halophyte genome. Evolution 2024, Montreal, QC, Canada.

Palmer[‡], Kimball-Rhines[‡], and **Moyers**. Sea Beans in the city revisited. Evolution 2024, Montreal, QC, Canada.

Ndimballan[†], Palmer[‡], and **Moyers**. Understanding metal tolerance in *Salicornia depressa*: A journey into salt marsh ecology. UMass Boston McNair Summer Symposium 2023, Boston, MA.

Moyers, Kimball-Rhines[‡], Palmer[‡], Rojas[†], and Stefanovic[†]. *Salicornia depressa*: genomics of a highly salt and metal tolerant plant. Botany 2023, Boise, ID.

Okinedo[‡] and **Moyers**. Pleiotropy and adaptation in the silverleaf sunflower, *Helianthus argophyllus*. Evolution 2023, Albuquerque, NM *and* Botany 2023, Boise, ID.

Palmer[‡], Kimball-Rhines[‡] and **Moyers**. Sea Beans in the City: Landscape genetics of a salt marsh pioneer in an urbanized coastline. Evolution 2023, Albuquerque, NM.

Moyers. Current projects in the Moyers Lab. Annie-Fest, Johanna Schmitt Retirement Symposium at UC Davis (1 April 2023).

Palmer[‡], Stefanovic[†] and **Moyers.** Surviving in an urban salt marsh: the effects of soil contamination on halophyte *Salicornia depressa*. Evolution 2021, *virtual*.

Palmer[‡], Stefanovic[†] and **Moyers.** Plant vs. Pollution: Investigating the effects of plant lineage and environment on rhizosphere composition in a hypertolerant halophyte. American Genetic Association President's Symposium on Indirect Genetic Effects 2020, *virtual*.

Corral[†] and **Moyers**. Machine learning models to predict plant biomass. UMass Boston McNair Summer Symposium 2019, Boston, MA.

Moyers, Henry, Klassen, and McKay. MAGIC and complexity in rice under stress. Evolution 2019, Providence, RI.

Posters (since 2019) [†] *undergraduate mentee,* [‡] *graduate mentee*
First author is presenter

Kimball-Rhines[‡], Taveras Guzman[†], and **Moyers**. Gene pool or puddle: when 'Local is Best' meets restoration reality." Ecological Society of America 2025, Baltimore, MD.

Kimball-Rhines[‡] and **Moyers**. Divergence and diversity decoupled: A population methylomic approach. Harvard Plant Biology Initiative Symposium 2025, Boston, MA.

Maguire[‡], Comerford, Vyas, Wimp, Murphy, **Moyers**, and Vidal. Cytosine modifications predict population identity in widespread moth. Plant-Herbivore Interaction GRC 2025, Pomona, CA.

Palmer[‡], Kimball-Rhines[‡], Rojas[†], and **Moyers**. The Cape or Cape traffic? Impacts of human activity and geographic barriers on a salt marsh pioneer species. Northeast Estuarine Research Society Meeting 2025, Provincetown, MA.

Maxwell[†], Zlevor, Brabander, Johannesson, **Moyers**, Brooks[‡], and Chen. Detection of heavy metals in the salt marsh succulent glasswort (*Salicornia* spp.) by x-ray florescence. ASLO Aquatic Sciences Conference 2025, Charlotte, NC.

Taveras Guzman[†], Kimball-Rhines[‡], and **Moyers**. UDE: Salinity and heavy metal tolerance analysis in *Salicornia depressa*. Evolution 2024, Montreal, QC, Canada and REU Summer Showcase 2024, Boston, MA.

Maguire[‡], Comerford, **Moyers**, and Vidal. Cytosine modifications predict population identity in widespread moth. Evolution 2024, Montreal, QC, Canada.

Mello[†], Taveras Guzman[†], Kimball-Rhines[‡], and **Moyers**. Differential Gene Expression Under Varying Nitrogen Source in *Salicornia depressa*. UMass Boston College of Science and Math Student Showcase 2024, Boston, MA and Evolution 2024, Montreal, QC, Canada.

Chaney[†], Palmer[‡], and **Moyers**. Hyperaccumulation of Heavy Metals in *Salicornia depressa*. AGU Ocean Sciences Meeting 2024, New Orleans, LA.

Ahmed[†], Papamechail[†], Palmer[‡], and **Moyers**. Exploring Microbial Composition in Coastal Halophytes: Insights from *Salicornia* Species. UMass Boston College of Science and Math Student Showcase 2024, Boston, MA.

Papamechail[†], Palmer[‡], and **Moyers**. Wherever you grow I'll grow: examining the microbial communities surrounding *Salicornia depressa*. UMass Boston Summer Undergraduate Research Symposium 2023, Boston, MA.

Chaney[†], Palmer[‡], and **Moyers**. Heavy metal uptake in *Salicornia depressa*. UMass Boston Summer Undergraduate Research Symposium 2023, Boston, MA. *Winner of best poster design*.

Okinedo[‡], Marrano, and **Moyers**. Discovering the genetic basis of rice grain shape. Botany 2023, Boise, ID. *Winner of best student poster in the Economic Botany section.*

Palmer[‡] and **Moyers**. *Helianthus winteri*: A new species of sunflower? Evolution 2023, Albuquerque, NM.

Okinedo[‡] and **Moyers**. Pleiotropy and adaptation in the silverleaf sunflower. Evolution 2023, Albuquerque, NM.

Kimball-Rhines[‡] and **Moyers**. One Fish, Two Fish, Sea Fish, Bee Fish: Assessing State-Level Biodiversity Policy. Evolution 2023, Albuquerque, NM *and* Society for Molecular Biology and Evolution satellite meeting: Evolution in Small Populations, 2023, Princeton, NJ.

Okinedo[‡], Marrano, and **Moyers**. Discovering the genetic basis of rice grain shape. UMass Boston College of Science and Math Student Showcase 2023, Boston, MA.

Okinedo[‡] and **Moyers**. Phenotypic variation and genome-wide association study of seed traits in the USDA Rice Mini-Core. ASA-CSSA-SSSA annual meeting, 2022, Baltimore, MD.

Kimball-Rhines[‡], Rojas[†], Palmer[‡], and **Moyers**. Genome Profiling of *Salicornia depressa*: a tool for phytoremediation and marsh restoration. Ecological Society of America annual meeting 2022, Montreal, Canada.

Palmer[‡] and **Moyers**. *Helianthus winteri*: A new species of sunflower? Ecological Society of America annual meeting 2022, Montreal, Canada.

Sobalvarro[†] and **Moyers**. Rice in a Bag: Developing a System to Study Early Growth in *Oryza sativa*. UMass Boston Summer Undergraduate Research Symposium, 2022, Boston, MA.

Kimball-Rhines[‡] and **Moyers**. Genome profiling of *Salicornia depressa*. *Lightning talk and poster.* UMass Boston Earth Day Symposium 2022, Boston, MA

Polanco[†], Urbina[†], Marrano, and **Moyers**. Phenotyping Analysis: Pearls from the Tropics. UMass Boston College of Science and Math Research Showcase 2022, Boston, MA.

Palmer[‡] and **Moyers**. *Helianthus winteri*: A new species of sunflower? American Genetic Association President's Symposium on Conservation Genomics, 2021, Snowbird, UT.

Rojas[†], Palmer[‡], and **Moyers**. Estimating key genomic features by short-read whole genome sequencing of *Salicornia depressa*. UMass Boston Summer Undergraduate Showcase 2021, Boston, MA.

Uppala, Marrano, and **Moyers**. Evaluation of Chlorothalonil alternative fungicide regimes for cranberry fruit rot and quality: Traditional methods vs high-throughput image analysis. American Phytopathological Society Plant Health 2020, *virtual*.

Marrano and **Moyers**. Digging into the adaptive response to drought in Asian rice (*Oryza sativa* L.). The Allied Genetic Conference 2020, *virtual*.

Marrano and **Moyers**. Image-based phenotyping of seed traits in a MAGIC population of rice (*Oryza sativa* L.) grown under drought and well-watered conditions. Phenome 2020, Tucson, AZ.

Marrano, Uppala, and **Moyers**. Digital detection of fruit rot incidence in fungicide efficacy trials of cranberry (*Vaccinium macrocarpon*). Phenome 2020, Tucson, AZ.

Moyers, Henry, Klassen, and McKay. Phenotypic plasticity under stress in Asian rice. UMass Amherst PB Symposium 2019: The Plant Biology of Climate Change, Amherst, MA.

Zuniga[†], Alcántara, Corral[†], Colón-Carmona, and **Moyers**. Phenotyping *Arabidopsis thaliana* under stress of PAHs. UMass Boston Summer Undergraduate Showcase, 2019, Boston, MA.

Teaching & Mentoring

Instructor of Record

University of Massachusetts Boston

Biol 187S: Gateway Seminar I–Plants & People (Fall 2021, 23 students)

Biol 188S: Gateway Seminar II–Constructing Knowledge (Spring 2022, 19 students)

Biol 290: Population Biology (every Spring 2020–now: 150–200 students; Summer 2021 & 2023: 25–30 students) *taught in person (0.5), remote (3.5), and hybrid (4) modalities*

Intr-D 280/Honors 295: An Introduction to Genomic Data Science (Fall 2024, 14 students) *taught in Technology Enhanced Active Learning (TEAL) classroom, funded by NIH National Cancer Institute*

Biol 635: Population Genetics (Fall 2020 & 2023, 8–12 students) *taught remotely and in person*

Biol 697: Ecological Genomics (Fall 2019 & 2022, 8–10 students)

Biol 653: Current Literature in Evolutionary Ecology (1–3 registered students/term)

Software Carpentry Workshops (R/bash/git)

USDA, 18–19 Aug 2020, *taught remotely*
University of Delaware, 9–17 Jun 2020, *taught remotely*

Data Carpentry Workshops (Genomics)

Jackson Laboratory, 10–19 Nov 2020, *taught remotely*
California State University Monterey Bay, 21–22 Mar 2019, Monterey Bay, CA
Duke University Center for Genomic and Computational Biol., 26–27 Jul 2018, Raleigh, NC

Data Carpentry Workshops (R/Ecology)

USDA Long Term Agroecosystem Research Network, 22–23 Aug 2018, Fort Collins, CO
Gulf Research Program, 16–17 Apr 2018, Corpus Christi, TX
National Data Integrity Conference, 3–4 Oct 2017, Fort Collins, CO
Aspen Global Change Institute, 5–6 Jan 2017, Basalt, CO

Data Carpentry Workshops (R/Geospatial)

COBALT Casco Bay collaboration, 10–12 Jan 2023, Portland, ME

Introduction to R for Biology Graduate Students, Fall 2017, Fort Collins, CO

Data Management for Undergraduates, 26 Jul–17 Aug 2017, Fort Collins, CO

Formal mentoring

Postdoctoral researchers:

Annarita Marrano, 2019–2021
Next: AgBioData Program Coordinator at Phoenix Bioinformatics

Graduate students:

Alice Palmer, Molecular, Cell, and Organismal Biology PhD Candidate, 2019–now
NSF Graduate Research Fellow 2021–2026
Nantucket Biodiversity Initiative 2022 research grant, $3,197

Uzezi Okinedo, Molecular, Cell, and Organismal Biology PhD Candidate, 2020–now
2022 American Association of University Women fellow, $20,000
2022 Honorable mention for the Graduate Women in Science fellowship
2022 GSA DeLill Nasser professional development award, $1,000
2023 AWIS Distinguished Doctoral Research Scholarship, $10,000
2023 Corteva Showcase and ASPB Travel Recognition Travel Awards, $3,000
2023 Botanical Society of America Genetics Section Travel Award, $500
2024 USAID/IRRI MSI Sandwich Scholarship, $40,000
2024 Global Rice Leadership Award, $7,150

Cooper Kimball-Rhimes, Environmental Biology PhD Candidate, 2021–now
EPA Pathways Intern 2021–2024
2022 New England Botanical Society research grant, $1,500
NSF Graduate Research Fellow 2023–2028
2023 Transdisciplinary Dissertation Proposal Development Fellow, $3,000
2023 Nantucket Biodiversity Initiative research grant, $5,506

Billie Maguire, Environmental Biology PhD Student, co-advised with Vidal 2023–now
NSF Graduate Research Fellow 2022–2027
Lewis and Clark Fund for Exploration and Field Research, $5,000
NSF INTERN awardee, $8,316

Yara AlKhars, Molecular, Cell, and Organismal Biology PhD Student, 2024–now
IDS STEMPOWER 2025 graduate mentor, $2,500

Undergraduate students (directed research/independent study/honors theses):

Camille Maxwell (UMB Biology), McNair fellow, 2025–now
Project: Microbial community composition in contaminated versus pristine marshes
Supported by CSM Undergraduate Research and D-ENTERPRISE Fellowship

Jayna Fawcett (UMB Biology), Thesis student, 2024–now
Project: Characterizing rice heat tolerance candidate gene expression using RT-PCR
Supported by CSM Undergraduate Research and Beacon Student Success Fellowships

Scarlet Taveras Guzman (UMB Biology), Thesis student and McNair fellow, 2023–now
Project: Mechanisms of lead versus salinity tolerance in *Salicornia*
Supported by CSM Undergraduate Research, NSF REU, D-ENTERPRISE, and IDS STEMPOWER Fellowships

Nhan Ho (UMB Biology), Independent researcher, 2024–2025
Project: Phenotypic responses to heat stress in rice

Aji Ndimballan (UMB Biology), McNair fellow, 2023–2024
Project: Heavy metal bioaccumulation in *Salicornia depressa*

Emily Mello (UMB Biology), Thesis student, 2023–2024
Project: Differential gene expression under nitrogen source treatments
Supported by a CSM Undergraduate Research Fellowship

Lexi Papamechail (Bridgewater State), REU student, Summer 2023
Project: Microbial communities in *Salicornia depressa* rhizosphere and sediment

Linda Chaney (Massasoit Community College), CREST-REU student, Summer 2023
Project: Heavy metal remediation in *Salicornia depressa*

Anisa Ahmed (UMB Biology), IMSD fellow, 2023
Project: Ecological facilitation in a salt marsh plant
Supported by a CSM Undergraduate Research Fellowship

Louis Mallison (UMB Environmental Studies), Thesis student 2023
Project: The Mossy Log, a multi-media educational resource (themossylog.org)

Edwin Polanco (UMB Computer Science), 2020–2022
Project: Digital phenotyping of cranberry fruit rot, 2020–2021
Project: Digital phenotyping of pearl millet panicles, 2021–2022
Supported by an Oracle Undergraduate Research Fellowship

Gabe Sobalvarro (UMB Biology/Math), REU student, Summer 2022
Project: Early seedling vigor in the rice Global MAGIC population

Daniela Urbina (UMB Biology), 2020–2021
Project: Digital phenotyping of pearl millet panicles

Cameron Gray (UMB Chemistry), McNair fellow, Summer 2021
Project: Soil composition and plant ecology in New England salt marshes
Supported by a Beacon Student Success Fellowship

Vanessa Rojas (UMB Biology), REU student, Summer 2021
Project: Estimating key genomic features by short-read WGS of *Salicornia depressa*

Krishna Patel (UMB Biology), 2020–2021
Project: Phytoremediation and bioremediation of New England salt marshes

Filip Stefanovic (UMB Chemistry), 2019–2021
Capstone Project: Salt marsh soil elemental composition analysis
Supported by CSM Undergrad Research and Beacon Success Fellowships
Pandemic alternative project: Salt tolerance in the silverleaf sunflower

Erendira Corral (UMB Computer Science), McNair fellow, 2019–2020
Project: Machine learning to predict plant traits from UAV imagery

Tadeo Zuniga (CSU Northridge), REU student, Summer 2019
Project: Phenotyping *Arabidopsis thaliana* under stress of PAHs

De Wet Van Niekerk (UBC), Independent Study Student, 2011–2012
Project: Comparative drought tolerance in California annual *Helianthus*

Richard Sinclair (Texas A&M Kingsville), Field Research Assistant, Fall 2011
Project: Geographic distribution of *H. argophyllus* seed predators

Audrey Kelly (University of Rochester), Field Research Assistant, Summer 2011
Project: Measuring selection in natural populations

Sonja Rummel (UBC), NSERC Undergraduate Summer Research Fellow, Summer 2010
Project: Hybridization in sympatric annual sunflowers

Graduate committee member:

Currently: Teá Kesting-Handly (PhD), Jonathan Dain (PhD), Curtis Morris (PhD), Emily Weintraub (PhD), Daniel Hirschkop (PhD)

Graduated: Bruna Silva (2022 MSc), Julia McCartney (2022 MSc), Kevin Mulkerrins (2023 MSc), Sara Bistany (2023 MSc), Tyler Barr (2024 MSc), Emma Brooks (2025 MSc).

Undergraduate advising: 30–50 students annually

Louis Mallison and Caroline Gebhardt, 2022 & 2024 Udall applicants

RCN Evolving Seas Lab Meeting Exchange (hosted Parisa Alidoost Salimi 2020–2021, Jay Krithivas and Xavier Houston 2021–2022, Maya Leon 2023–2024)

Professional development programs

2024–2025	Designer and director of iTCGA, NIH funded 3-week workshops for undergraduates on genomic data science (held Aug 2024, Jan 2025, & June 2025)
2020–2025	Director of NSF GRFP Bootcamp, a 6-week summer program
Summer 2020	UMB Biology Summer R Club Faculty Mentor
Summer 2019	UMB Biology Show Up & Write Group Organizer
Summer 2017	Executive director of 10-week CSU BSURE Program Professional development program for undergraduates in biology

Service & Community

Departmental

2025	Hiring committee for Marine Ecology position
2022	Hiring committee for Bioinformatics & Molecular Biology position
2021–2022	Biology Executive Committee member
2019–2021	UMB Biology Seminar Committee chair Re-tooled series into remote & publicly accessible format in 2020
2021	Hiring committee for Ecology & Evolution of Emerging Diseases position
2020	Hiring committee for Global Change Ecology position

College & University

2024–now	Advisory board member, Center for Innovative Teaching
2022–now	Faculty Council Graduate Studies Committee
2024	Hiring committee for CSM Data Science position
2021–2023	UMB Teaching Evaluations Task Force
2020–2021	Faculty Council Ad Hoc Committee on Teaching Evaluations
2020–2021	College of Science and Math Steering Committee on Diversity, Equity, and Inclusion

Profession & Discipline

2020–now	Massachusetts representative for Multistate Research Coordinating Committee SCC80: Imagining the Future of Plant Breeding
2021–2025	Council Member, American Genetic Association
2023	BSA GRFP Workshop mentor
	Judge, Menzel Award, Botany Genetics Section student talks
	Faculty-Student mentor, Evolution meeting
2022	BSA GRFP Workshop mentor
	Judge, Canadian Society for Ecology and Evolution student talks
	CSEE Student Presentation Awards Judge, ESA meeting
2020	NSF Workshop on Integrating Plant Genomics and Physiology
	Evolution 2020 alternative meeting ECR[2] Moderator for Leveraging Your PhD: Careers Beyond Academia workshop Faculty-Student Mentor
2019	Hamilton Award Committee Judge, Evolution meeting
	Faculty-Student Mentor, Evolution meeting
	USDA Dale Bumpers National Rice Research Center Internal Reviewer
2016–2018	Volunteer National Forest Service ranger, Canyon Lakes Ranger District
2014	California Native Plant Society Plant Status Reviewer
2011–2014	Founding member of the UBC Reproducibility Group
2009–2012	Organizer of the Vancouver Evolution Group Bi-monthly public science outreach event

Manuscript Reviewer (in alphabetical order): American Journal of Botany, Applications in Plant Sciences, Biological Journal of the Linnaean Society, Biology Letters, Conservation Genetics, Crop Science, Ecological Research, Evolution, Evolutionary Applications, Evolutionary Ecology, Genome, G3: Genes|Genomes|Genetics, Heredity, Journal of Heredity, Molecular Biology and Evolution, Molecular Ecology, Molecular Ecology Resources, New Phytologist, The Plant Cell, Plants People Planet, PloS Biology, PLoS One, Proceedings of the National Academy of Sciences, and Proceedings of the Royal Society B: Biological Sciences.

Proposal Reviewer: NSF Graduate Research Fellowship Program (2020, 2022, 2024 panels), NSF Directorate of Biological Sciences (ad-hoc: 2018, 2020, 2022; two 2022 panels)

Member: Society for the Study of Evolution, American Society of Naturalists, American Genetics Association

Professional Development

2024	UMass Boston CARES Workshop
2024	ADVANCEGeo ROOT & SHOOT Bystander Intervention Training
Spring 2022	NCFDD Faculty Success Program
2020–2021	UMB Junior Faculty Research Seminar
2020	SpeakOut! Summer Institute

Teaching Certificates and Training

2024 The Carpentries Instructor Trainer certification (10 week training, *remote*)
2023 ASK BIO Level 2 assessment development workshop (*remote*)
2016 The Carpentries Instructor Training workshop (*remote*)
2015 CIRTL Advancing Learning Through Evidence-Based STEM Teaching (*online*)
2014 Biology 535: Teaching and Learning in the Life Sciences (UBC)
2012 Biology Teaching Assistant Professional Development Program (BioTAP, UBC)
2009 Instructional Skills Workshop (UBC)

Language Skills: English (fluent), Spanish (intermediate), German (beginner), Mandarin Chinese (beginner)