Derek Denney *Curriculum Vitae*

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Appointments

Plant Resilience Institute Postdoctoral Research Fellow, Michigan State University 2024 –

Education

Ph.D. Plant Biology, University of Georgia. 2018- 2024
Advisor: Jill Anderson
Dissertation: "The ecophysiological and genetic underpinnings of local adaptation in *Boechera stricta*"

M.S. Plant Biology, Washington State University 2014-2018
Advisor: Larry Hufford
Thesis: "Phylogeography of *Mentzelia cronquistii*: Landscape complexity and glacial refugia"

B.S. Biology, University of Utah 2005-2011

Scholarship

* Indicates undergraduate mentee

Peer Reviewed Publications

7. Tisinai, S., **Denney, D.A.**, Anderson, J.T., and J. Busch. (In review) Tests of adaptive gene expression evolution along an elevational gradient in Drummond's rockcress (*Boechera stricta*). *Journal of Heredity*.
6. **Denney, D.A.** and J.T. Anderson. 2025. Increased temperature and CO_2 induce plasticity and impose novel selection on plant traits. *Journal of Integrative and Comparative Biology*. https://doi.org/10.1093/icb/icaf028
5. Anderson, J.T., DeMarche, M., **Denney, D.A**, Breckheimer, I., Santangelo, J. and Wadgmyar, S. 2025. Adaptation and gene flow are insufficient to rescue a montane plant under climate change. *Science,* 388(525-531) doi:10.1126/science.adr1010.
4. **Denney, D.A.**, *Patel, P., and J.T. Anderson. 2024. Elevated [CO_2] and temperature augment gas exchange and shift the fitness landscape in a montane forb. *New Phytologist*, doi:10.1111/nph.19765
3. Santangelo, J.S., and 278 others, including **Denney, D**. 2022. Global urban environmental change drives adaptation in white clover. *Science,* 375(1275-1281).1275-1281. DOI:10.1126/science.abk0989
2. Hamann, E., **Denney, D**., Day, S., Lombardi, E., Jameel, M. I., MacTavish, R., & Anderson, J.T. 2020. Plant eco-evolutionary responses to climate change: Emerging directions. *Plant Science*, 110737. doi: 10.1016/j.plantsci.2020.110737
1. **Denney, D.A.**, Jameel, M.I., Bemmels, J.B., Rochford, M.E., and J.T. Anderson. 2020. Small Spaces, Big Impacts: Contributions of microenvironmental variation to population persistence under climate change. *AoB:Plants.*12(2), plaa005. doi.org/10.1093/aobpla/plaa005

Other contributions

Denney, D.A. and J.T. Anderson. 2020. Natural history collections document biological responses to climate change. *Global Change Biology,* 26(340-342). doi:10.1111/gcb.14922

Grants, Honors, and Awards

Research Grants

2024- present Plant Resilience Institute Research Fellow, Michigan State University, $210,000
2025 Plant Resilience Institute Seed Grant, Michigan State University, $10,200
2023 Palfrey Grant Recipient, University of Georgia, Athens, GA. *$1250*
2023 UGA Graduate School Travel Award, *$1000*
2022 Bill Dahl Graduate Student Research Award, BSA, *$1500*
2021 Rosemary Grant Award Recipient, SSE, *$3500*
2022 Plant Center DDIG Recipient, University of Georgia, *$5000*
2021 Plant Center DDIG Honorable Mention, University of Georgia
2021 Summer Research Grant, University of Georgia, Athens, GA *$1500*
2019 Palfrey Grant Recipient, University of Georgia, Athens, GA. *$1250*
2017 Higinbotham Trust Recipient, Washington State University, Pullman, WA. *$2400*
2017 American Society of Plant Taxonomists Student Travel Grant Ft. Worth, TX. *$335*
2016 Graduate Professional Student Assoc. Travel Grant, Pullman, WA. *$300*
2016 Higinbotham Trust Recipient, Washington State University, Pullman, WA. *$4000*
2015 Higinbotham Trust Recipient, Washington State University, Pullman, WA. *$4200*

Fellowships

2024 – present Plant Resilience Institute Research Fellow, Michigan State University, $210,000
2021 Future Faculty Fellow, University of Georgia, *$600*
2020-21 NIH T32 Training Grant Fellowship, University of Georgia, *$30,000*
2014 Aase Botany Fellowship, Washington State University, Pullman, WA. *$1000*
2015 Boeing Graduate Student Fellowship, Washington State University, Pullman, WA. *$2500*
2016 Arnold Arboretum microMORPH, Boston, MA. *$600*

Honors and Awards

2023 UGA Excellence in Teaching Award, *$1000*
2023 UGA Outstanding Teaching Assistant Award
2023 Wilbur Duncan Outstanding Graduate Student Award, Plant Biology, UGA *$1000*
2020 First prize PBIO Grant Writing, University of Georgia, Athens, GA *$60*
2016 American Society of Plant Taxonomists Field Trip Award, Savannah, GA. *$100*

Presentations

*Undergraduate mentee; †Graduate mentee

2025 †Jensen, A, Stanley, L.E., Denney, D., VanBuren, R, & D. Lowry. Developing a stable ovule transformation method in *Lindernia brevidens*. Poster. GLPSC. Lansing, MI.
*Majambre, E. **Denney, D** & E. Josephs. Flowering gene selection in *Chamaecrista fasciculata*. *Plant Genetics and Genomics Symposium*. East Lansing, MI.
*Majambre, E. **Denney, D** and E. Josephs. Environmental variation and flowering gene divergence in *Chamaecrista fasciculata*. Poster. *MiDSURE*, East Lansing, MI.
Denney, D, Josephs, E, DeMarche, M, and J.T. Anderson. Uncovering the genetic basis of local adaptation using complementary genomic association approaches in the perennial forb, *Boechera stricta*. *Evolution*. Athens, GA.

†Jensen, A, **Denney, D** and L.E. Stanley. Developing stable ovule transformation methods in *Boechera stricta* and *Lindernia brevidens PRI Networking Hour*. East Lansing, MI.
Denney, D and J.T. Anderson; Uncovering the genetic basis of local adaptation using complementary genomic association approaches in a perennial forb. *Gordon Research Symposium and Conference*. Lucca, Italy.
J.T. Anderson and **Denney, D**. Elevated [CO_2] and temperature increase gas exchange and alter fitness in a montane forb. *Society of Integrative and Comparative Biology*. Atlanta, GA.

2023 **Denney, D** and J. T. Anderson. Examining the effects of elevated [CO_2] and temperature on plant performance and physiology in a perennial forb. *Evolution*. Albuquerque, NM
*Dozier, J. **Denney, D**, and J.T. Anderson. How does vernalization affect *Boechera stricta* phenology? *SUNFIG Genetics Symposium*, Athens, GA.
*Cumberbatch, N. **Denney, D**., and J.T. Anderson. Vernalization Effects on Reproduction in *Boechera stricta*. *CGG REEU Symposium*, Athens, GA.

2022 *Patel, P., **Denney, D**., and J.T. Anderson. Anthocyanin absorption with varying [CO2] concentration and temperature. *UGA CURO Symposium*, Athens, GA.

2021 *Nash, E., **Denney, D**, and J.T. Anderson. Freezing Tolerance on an Elevational Gradient. Poster. *SUNFIG Genetics Symposium*, Athens, GA.
McNair, M., Zenoble, M., and **D. Denney**. Teaching Taxonomy in "Unprecedented Times." *Botany: Virtual*.

2019 **Denney, D**., and L. Hufford. Phylogeography of *Mentzelia cronquistii*: Landscape complexity and glacial refugia. *EDGE*. Athens, Georgia.

2018 **Denney, D**., Lim-Hing, S. and S. Forget. Does the level of domesticity impact stress-tolerance?: Comparing landraces and cultivars under drought stress in sunflower (*Helianthus annuus*). Poster. *Plant Center Retreat*. Helen, Georgia.
Denney, D. and L. Hufford. Phylogeography of *Mentzelia cronquistii*: Landscape complexity and glacial refugia. *EcoLunch*. Pullman, Washington.

2016 **Denney, D**. and L. Hufford. Understanding leaf adaptation in *Tetradymia* and allies (Asteraceae). *microMORPH*. Boston, Massachusetts.
Denney, D. and L. Hufford. The interplay of geography, ecology and trait evolution: Leaf adaptation in *Tetradymia* and allies (Asteraceae). *SBS Symposium*. Moscow, Idaho.

Professional Work Experience

2022 Future Faculty Fellow, University of Georgia
2022 Co-lecturer, Plant Biology 4650/6650, *Plant Taxonomy*, University of Georgia.
2021, 2023 Teaching Assistant, Plant Biology 2500E, *Natural Communities of Georgia Plants*, University of Georgia.
2020-21 T32 Training Grant Trainee, University of Georgia
2020 Co-lecturer, Plant Biology 4650/6650, *Plant Taxonomy*, University of Georgia.
2019 Teaching Assistant, Plant Biology 3650, *Plant Ecology*, University of Georgia.
2019 – 2020 Plant Biology Undergraduate Liaison, University of Georgia.
2019 Teaching Assistant, Biology 1108L, *Organismal Biology*, University of Georgia.
2018 Teaching Assistant, Biology 372, *General Ecology*, Washington State University.
2014 – 2017 Teaching Assistant, Biology 106, *Introductory Biology: Organismal Biology,* Washington State University.

2013 – 2014 Process Technician III, Myriad Genetics.
2011 – 2013 Lab Technician III, Myriad Genetics.
2010 – 2011 Lab Aide, Coley/Kursar Lab, University of Utah.

Research Experience

2024 – present PI: David Lowry and Emily Josephs, Michigan State University.
2018 – 2024 Genetic basis of local adaptation and maladaptation in *Boechera stricta*.
PI: Jill Anderson, University of Georgia
2018 Global Urbanization and Evolution project participant. PI: Marc Johnson, University of Toronto.
2014 – 2018 Phylogeography of the *Mentzelia cronquistii* complex.
Phylogeny of *Tetradymia* and allies.
PI: Larry Hufford, Washington State University.
2013 Developed automated protocol to use next-generation sequencing techniques for a high throughput sequencing cancer assay.
Myriad Genetics, Salt Lake City, Utah.
2011 Independent research project using field botany and plant systematic techniques.
PI: Lynn Bohs, University of Utah.
2011 Developed assay to study secondary compounds in *Protium*.
PI: Paul Fine, UC-Berkeley.
2010 – 2011 Studied secondary compounds in *Inga* species.
PI: Phyllis Coley, University of Utah.

Volunteer Experience

2023 PLANTS Mentor, Botanical Society of America, Boise, ID.
2021 – 2022 President, Plant Biology Graduate Student Association, UGA.
2021 Georgia Science and Engineering Fair, Sr. Division Judge, Athens, GA
2015 – 2021 Mentor, PlantingScience.org.
2015 – 2018 Mastering Plant Science Team Liaison, PlantingScience.org.
2015 – 2017 Vice President, Biology Graduate Student Association, WSU, Pullman, WA.
2014 – 2016 Bilingual (Thai) biology tutor, Pullman, WA & Salt Lake City, UT.

Professional Development

2025 Evolution 2025, Athens, Georgia
2023 Evolution 2023, Albuquerque, New Mexico
Botany 2023. Boise, Idaho
2022 Evolution 2022. Virtual.
2021 Mentor Training. Athens, Georgia
2021 Botany 2021. Virtual.
2019 Plant Center Spring Symposium. Athens, Georgia
2018 Plant Center Fall Retreat. Helen, Georgia
2017 Botany 2017. Ft. Worth, Texas
Ecological Society of America 2017. Portland, Oregon
2016 Plant Morphology: Linking Phenotype to Development. microMORPH summer course at the Arnold Arboretum of Harvard University, Boston, Massachusetts.
Inland Northwest Genomics Research Symposium. Moscow, Idaho.
Botany 2016. Savannah, Georgia.
2015 Botany 2015. Edmonton, Alberta, Canada.

Mentorship

Undergraduate Mentorship

Eleiezer Majambere, 2025
Mallory Howard, 2024
Julianna Arms, 2023 – 2024
Leena Patel, 2022 – 2024
Shawn Rahim 2023 – 2024
Daniel Cardis 2023 – 2024
Alexa Leahy 2023 – 2024
Amanda Wijesinghe 2023 – 2024
Nyiefa Cumberbatch 2023
Jazmin Dozier 2023
Caroline McConnell, 2022 – 2023
Jane Aloi, 2022 – 2023
Ron Saler, 2022 – 2023
Nikhil Manocha, 2022- 2023
Edward Gildea, 2022
Andrew Klutz, 2022
Manav Kumar, 2022
Pratik Patel, 2021 – 2022
Ian Volmer, 2021 – 2022
Kira Hills, 2021 – 2022
Zoe Bunch, 2021 – 2022
Erica Nash 2021
Anthony Lee, 2021
Natalie Hogan, 2019 – 2020

K-12 Mentorship

Saisri Tangirala, 2022