

# Laci M. Gerhart Barley

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## **Education**

University of Kansas Ecology and Evolutionary Biology Advisor: Dr. Joy K. Ward Dissertation Title: <i>Glacial Tree Physiology: Using Stable Isotopes to Reconstruct Plant Responses to Environmental Change Since the Last Glacial Period</i>	PhD 2013 (defended with honors)
Certificate in Environmental Studies	2012
University of Kansas Ecology and Evolutionary Biology	B.S. 2006 (graduated with distinction)
<b><u>Appointments</u></b>	
Lecturer, Potential for Security of Employment (Assistant Professor of Teaching EVE) University of California, Davis	2017-present
Lecturer in Biology and Botany University of Hawai'i, West O'ahu University of Hawai'i, Mānoa	2014-2017
Novus Post-doctoral Research Associate Kansas State University, Department of Geography Advisor: Dr. Kendra K. McLauchlan	2013-2017
Visiting Assistant Professor Kansas State University, Department of Geography	2014
NSF IGERT C-CHANGE Fellow University of Kansas	2012 – 2013
Energy and Environment Policy Intern American Association for the Advancement of Science	2012
Self Graduate Fellow University of Kansas	2008 – 2012

## Peer- Reviewed Publications

- **Gerhart LM**, Anderton B (2021) Engaging students through online video homework assignments: A case study in a large-enrollment ecology and evolution course. *Ecology and Evolution*, 11:5777-5789, DOI: 10.1002/ece3.7547
- **Gerhart LM**, Jadallah C, Angulo S, Ira G (2021) Teaching an experiential field course via online participatory science projects: A COVID-19 case study of a UC California Naturalist course, *Ecology and Evolution*, 11: 3537-3550, DOI: 10.1002/ece3.7187
- Dolan EL, M Borrero, K Callis-Duehl, MM Chen Musgrove, J de Lima, I Ero-Tolliver, **LM Gerhart**, EC Goodwin, LR Hamilton, MA Henry, J Herrera, B Huot, S Kiser, ME Ko, ME Kravec, M Lee, LB Limeri, ME Peffer, D Pires, JS Ramirez Lugo, SM Sharp, NA Suarez (2020) Undergraduate Biology Education Research Gordon Research Conference: A Meeting Report, *CBE-Life Sciences Education*, 19:mr1, DOI: 10.1187/cbe.19-09-0188
- McLauchlan KK†, **LM Gerhart**†, JJ Battles, JM Craine, AJ Elmore, PE Higuera, MC Mack, BE McNeil, DM Nelson, N Pederson, SS Perakis (2017) Centennial-scale reductions in nitrogen availability in temperate forests of the United States, *Scientific Reports*, 7:7856 † These authors contributed equally to this work
- Li G, **LM Gerhart**, SP Harrison, JK Ward, JM Harris, IC Prentice (2017) Changes in biomass allocation buffer low CO<sub>2</sub> effects on tree growth during the last glaciation. *Scientific Reports*, 7:43087
- Carter JM, ME Orive, **LM Gerhart**, JH Stern, RM Marchin, J Nagel, JK Ward (2017) Warmest extreme year in U.S. history alters thermal requirements for tree phenology, *Oecologia*, 183:1197-1210
- Becklin KM, JT Anderson, **LM Gerhart**, SM Wadhymar, CA Wessinger, JK Ward (2016), Examining plant physiological responses to climate change through an evolutionary lens. *Plant Physiology*, 172: 635-649
- Kranabetter JM, KK McLauchlan, SK Enders, JM Fraterrigo, PE Higuera, JL Morris, EB Rastetter, R Barnes, B Buma, D Gavin, **LM Gerhart**, L Gillson, P Hietz, MC Mack, B McNeil, S. Perakis (2016) A framework to assess biogeochemical response to ecosystem disturbance using nutrient partitioning ratios. *Ecosystems*, 19:387-395
- **Gerhart LM**, KK McLauchlan (2014) Reconstructing terrestrial nutrient cycling using stable nitrogen isotopes in wood. *Biogeochemistry*, 120:1-21
- Fuller BT, SM Fahrni, JM Harris, AB Farrell, JB Coltrain, **LM Gerhart**, JK Ward, RE Taylor, JR Southon (2014) Ultrafiltration for asphalt removal from bone collagen for radiocarbon dating and isotopic analysis of Pleistocene fauna at the tar pits of Rancho La Brea, Los Angeles, California. *Quaternary Geochronology*, 22:85-98.
- Barve N, AJ Bonilla, J Brandes, JC Brown, N Brunsell, FV Cochran, RJ Crosthwait, J Gentry, **LM Gerhart**, T Jackson, AJ Kern, KS Oberhauser, HL Owens, AT Peterson, AS Reed, J Soberón, AD Sundberg LM Williams (2012) Climate-change causation of mass mortality events in overwintering monarch butterflies. *La Revista Mexicana de Biodiversidad*, 83: 817-824.
- **Gerhart LM**, JM Harris, JB Nippert, DR Sandquist, JK Ward. (2012) Glacial trees from the La Brea tar pits show physiological constraints of low CO<sub>2</sub>. *New Phytologist*, 194: 63
- **Gerhart LM**, JK Ward (2010) Tansley Review: Plant responses to low CO<sub>2</sub> of the past, *New Phytologist*, 188(3):674-695

## **Other Publications**

- **Gerhart, L.M.** (2019) Hope is still a bison: book review of *Theodore Roosevelt and Bison Restoration on the Great Plains* by Keith Aune and Glenn Plumb, *Nature Sustainability*, 2:650
- **Gerhart, L.M.** (2019) Narrative Decay: book review of *Hot Carbon* by John Marra, *Nature Plants*, 5:640-641
- **Gerhart, L.M.** (2018) Sense and Sentient Ability: book review of *Semiosis* by Sue Burke, *Nature Plants*, 4:235-236
- **Gerhart, L.M.** (2017) Brutal Honesty of a Life in Science: book review of *Lab Girl* by Hope Jahren, *Nature Plants*, 3:837-838
- **Gerhart, L.M.** (2013) House, Senate Committees investigate meningitis outbreak, *Issues in Science and Technology*, Winter Issue.

## **Funding**

- 2020: Public Impact Research Initiative Seed Grant project *Citizen Science in Prison Gardens: Building Capacity for Transformative Learning at the Intersections of Nature and Self*: \$10,000
- 2019: The Green Initiative Fund, *City Nature Challenge, Everywhere!*: \$7544.50
- 2018: Department of Education (Co-PI with 14 others): Expanding the LibreTexts Project into the Next-Generation Hub for Construction, Dissemination, and Usage of Open Educational Resource Textbooks: \$4,949,843
- 2017-2018: UC Davis Center for Educational Effectiveness Course REdesign And Teaching Effectiveness (CREATE) Fellow: \$10,000
- 2015, named personnel on National Science Foundation Small Grant, Continental and Century Scale Assessment of Forest Nitrogen Cycling in the United States Using Dendroisotopes: \$149,963
- 2013, Kansas State University Academic Excellence Fund: \$2,870
- 2012, National Science Foundation Doctoral Dissertation Improvement Grant. The El Niño Southern Oscillation and Glacial *Juniperus* Physiology: \$11,740

## **Teaching Experience**

University of California, Davis: Instructor of Record

- Biological Sciences 2B: Introduction to Biology: Evolution and Ecology (Fall 2017-2020, Winter 2019, Spring 2018 and 2021)
- Biological Sciences 2C: Introduction to Biology: Tree of Life (Winter 2020)
- Evolution and Ecology 16: Wild Davis (Spring 2019-2021)
- Evolution and Ecology 101: Introduction to Ecology (Summer Session I 2018)
- Evolution and Ecology 120: Global Change Ecology (Spring 2020)
- Evolution and Ecology 298: Reading Seminar in Biology Education Research and Evidence-based Teaching (Winter 2020-2021)

University of Hawai'i, Mānoa: Instructor of Record

- Biology 171: Introduction to Biology I (Fall 2016)
- Biology 172: Introduction to Biology II (Fall 2016)

University of Hawai'i West O'ahu: Instructor of Record

- Biology 101/101L: Biology and Society with associated laboratory, (offered each semester Fall 2014 to Spring 2017)
- Botany 101: General Botany (Fall 2014, Spring 2015-2017)
- Biology 396: Introduction to Ecology, Writing-Intensive (Spring 2016)

Kansas State University, Instructor of Record

- Geography 735: Topics in Climatology and the IPCC (Spring 2014)

Technical Workshops

- Stable Light Isotopes in the Paleoenvironment II: Workshop held at Konza Prairie LTER, Kansas State University, May 26-31, 2013.

Graduate Teaching Assistant: University of Kansas

- Biology 408/409: Physiology of Organisms/Laboratory (Spring 2008)
- Biology 102: Introduction to Biology Laboratory (Fall 2007)
- Biology 418/613: Biology of the Honeybee (Fall 2007)

### **Mentorship**

- 2021-present: Jordan Zambonin, UC Davis undergraduate student in Animal Behavior, on practicum project *Eagle Island State Park Wildlife Surveys Using iNaturalist*
- 2021-present: Hannah Nelson, UC Davis graduate student in Population Biology, on dissertation chapter *Perceptions of Animal Diversity*
- 2018: Amelia Munson, UC Davis graduate student in Animal Behavior, on Course REdesign And Teaching Effectiveness (CREATE) project (teaching mentorship)
- 2016: Faculty liaison for Nicole Luurtsema, UH West O'ahu Kikaha Peer Academic Leaders (PALs) Program (teaching mentorship)
- 2015: Faculty liaison for Yashiro Uyeda, UH West O'ahu Kikaha Peer Academic Leaders (PALs) Program (teaching mentorship)
- 2013-2016: Allison Walker, Emily Sutton, Taylor Shanklin, KSU Undergraduates, Continental and Century Scale Assessment of Forest Nitrogen Cycling in the United States Using Dendroisotopes (research mentorship)
- 2013-2014: Brittney Houck and Rebekah Raetzel, Professional Mentor, K-State First's Guide to Personal Success mentoring program for incoming freshman
- 2013: Kyleen Kelly, KSU Graduate Student, Vegetation and fire history of high-elevation pine communities in Grand Teton National Park, WY (research mentorship)
- 2012: Kris Mo, KU Undergraduate, Growth and Physiological Responses of Glacial and Modern Trees to Changes in Atmospheric [CO<sub>2</sub>] Since the Last Glacial Maximum
- 2009: Katherine Colvin, Rhea Codio, Cole Aldrich, KU Student Athletes, mentored on scientific skills and communication (written and oral).
- 2010: Member of the Graduate Mentor Team for the Undergraduate Summer Research Institute, Climate Change in Indigenous Communities, Haskell Environmental Research Studies (HERS) Program, Haskell Indian Nations University.

### **Selected Invited Talks (last 6 years)**

- **Gerhart, LM**, Climate Change: Actuality and Impacts, Pine and Currant Residence Hall Faculty Series, March 2020
- **Gerhart, LM**, Cuarto Residence Halls Faculty Program, March 2019
- **Gerhart, LM**, A Braided River: the many paths to successful adulthood, Tercero Student Housing Faculty Program, February 2019
- **Gerhart, LM**, Climate and Communities in Crisis: Ecological and cultural complexities in the Monarch Butterfly Biosphere Reserve, Michoacán, Mexico, UHWO Math+Science+X Seminar Series, April 2016.
- **Gerhart, LM** Reconstructing plant physiology since the last glacial period, UHWO Math+Science+X Seminar Series, February 20, 2015.

### **Selected Oral Presentations (last 3 years)**

- **Gerhart, LM**, B Anderton, Engaging students through online video homework assignments: A case study in a large-enrollment ecology and evolution course, Summer Institute on Teaching Technology, Davis CA, July 2020
- Anderton B, **LM Gerhart**, Engaging students through online video homework assignments: A case study in a large-enrollment ecology and evolution course. American Society of Microbiologists Conference on Undergraduate Education, July 2020
- **Gerhart, LM**, SC Hart, Reliability of Stable Nitrogen Isotope Dendrochronologies for Long-Term Ecological Reconstruction, American Geophysical Union 53<sup>rd</sup> Annual Fall Meeting, San Francisco CA, December 2019
- **Gerhart, LM**, M Martin, J Stachowicz, R Grosberg, The impacts of lecture capture usage on student performance, attendance, and perspective in large-enrollment STEM courses, Society for the Advancement of Biology Education Research West Regional Meeting, Irvine, CA, January 2019
- **Gerhart, LM**, Engaging students in citizen science using mobile technology, Summer Institute on Teaching Technology, Davis CA, September 2019

### **Selected Poster Presentations (last 5 years)**

- Anderton B, **LM Gerhart**, Engaging students through online video homework assignments, 10<sup>th</sup> Annual Meeting of the Society for the Advancement of Biology Education Research, July 2020.
- **Gerhart, LM**, S Angulo, Engaging Diverse Audiences in Citizen Science through the California Naturalist Program. American Geophysical Union 53<sup>rd</sup> Annual Fall Meeting, San Francisco CA, December 2019.
- **Gerhart, LM**, Lecture Capture Classroom Technology: Impacts and Perspectives, Gordon Research Conference on Undergraduate Biology Education Research, Lewiston, ME, June 2019.
- **Gerhart, LM**, A Munson, Developing a learner-centered instructional template to address achievement gaps in a large-enrollment introductory biology course (BIS 2B): A CREATE course redesign project, 3<sup>rd</sup> Annual UC Davis Scholarship of Teaching and Learning Conference, Davis, CA, November 2018.
- **Gerhart, LM**, Incorporating Service Projects in Undergraduate Learning: Templates from dissimilar courses. 2<sup>nd</sup> Annual UC Davis Scholarship of Teaching and Learning Conference, Davis, CA, December 2017

### **Awards, Fellowships, and Honors**

- Association of Students at UC Davis Excellence in Education Award, 2019
- KU Libraries, 56<sup>th</sup> Annual Snyder Book Collecting Contest, First Place Graduate Student Division: 2012
- KU Office of Graduate Studies, Graduate Student Distinguished Service Award, Honorable Mention: 2012
- Sigma Xi Student Research Competition, Third Place Advanced Graduate Section: 2012
- Sigma Xi Student Research Competition, First Place Early Graduate Section: 2009
- NSF IGERT, C-CHANGE: Climate Change, Humans and Nature in the Global Environment Graduate Trainee: 2009-2011
- Madison and Lila Self Graduate Fellowship: 2008-2012

### **Selected Service (last 4 years)**

- Chair, EVE Diversity, Equity, and Inclusion Committee: 2021-present
- Master Advisor for Ecology, Evolution, and Biodiversity major: 2021-present
- Faculty advisor for the Population Biology Student Diversity Committee: 2020-present
- AggieOpen Steering Committee (supporting OER content development): 2020-present
- Storer Lobby Project on designing inclusive public spaces: 2019-present
- New Student Orientation Academic Seminars Planning Committee: 2019-present
- Search committee member for LPSOE faculty search in Wildlife, Fish, and Conservation Biology at UC Davis: 2019
- Panel Reviewer for proposals to the UC Davis Center for Educational Effectiveness' Course REdesign and Teaching Effectiveness (CREATE) program: 2019
- Contributor, report for WASC review of the Evolution, Ecology, and Biodiversity undergraduate major: 2019
- Faculty sponsor for the UC Davis Environmental Club: 2019-present
- Member of the Campus Community Book Project Selection Committee: 2020/2021 (theme: mental wellness), 2021/2022 (theme: social justice in practice), and 2022/2023 (theme: police brutality, police reform, and transformative justice/alternatives to policing)
- Panel Reviewer for grant proposals to NSF Undergraduate Biology Education: 2019
- Member of Working Group on EVE Student Evaluations of Teaching, 2018-2019
- Member of the Curriculum Committee, Evolution and Ecology Department: 2018 to present
- Co-Organizer for Dreamcatcher Conference: Promoting Transfer Student Success in the Biological Sciences at UC Davis: 2017-2018

### **Selected Outreach (last 4 years)**

- Ecology and Evolution Grad School Preview Day, faculty panel member: 2020
- Diversity in STEM Conference networking invitee: 2020
- Women in Life Sciences at Davis (WiLD) workshop writing diversity statements: 2020
- Environmental Club career panel: 2020
- Pre-Health Ambassador Network (PHAN) panel on recommendation letters: 2019, 2020
- College of Biosciences Fall Welcome faculty participant: 2019
- Faculty liaison for Biology Undergraduate Scholars Program (BUSP) for summer BIS 2B prep course: 2018

## **References**

Dr. John (Jay) Stachowicz  
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