

Lisa A Corwin (Auchincloss)

Ecology and Evolutionary Biology Department
University of Colorado at Boulder
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Professional Appointments

Current Appointment

2016-present Assistant Professor, EBIO, University of Colorado, Boulder

Prior Appointments

2015-2016 Project Coordinator for STEM Transfer Students, University of North Carolina, Chapel Hill

2013-2015 Postdoctoral researcher in DBER, University of Georgia / University of Texas at Austin

2013 Adjunct Natural Resources Instructor, American River College

Education

Ph.D., Plant Biology, 2013 University of California, Davis

Dissertation - Seeds of change: Growth and survival of Fremont cottonwood seedlings in response to changes in nutrient availability, atmospheric carbon dioxide level, and river hydrology

Advisor: Dr. James H Richards, Professor in the Land, Air, & Water Resources Department

Bachelor of Arts, Biology, 2006, The Colorado College

Magna cum Laude, Distinction in Biology

Senior Thesis - Seed viability and germinability of alpine species spanning the Rocky Mountains

Advisor: Dr. Jim Ebersole, Professor in the Biology Department



We perform **R**esearch on **E**cology and **E**volution **E**ducation for **A**ction and **C**hange with the aim of advancing our understanding of how undergraduate biology students become resilient, creative, community-engaged scientists. We investigate how biology students develop the skills and dispositions underlying persistence and success when confronting and solving complex multifaceted societal problems.

Research

Contributions to research include investigations of the efficacy of teaching and learning innovations focused on undergraduate persistence and resilience in biology and STEM fields. They also include efforts to apply theory from psychology and cognitive science to biology learning, bring new methodologies to the field, analyze prior biology education research, and draw attention to pertinent questions in undergraduate biology education.

Grants

Submitted

- Principal Investigator, A Power of Place Learning Experience & Research Network (APPLE R Net) to Support Community College Success and Civic Engagement, NSF – Improving Undergraduate STEM Education, Engaged Student Learning Level II Award Program, *Pending*, 2021-2024, \$599,983.
- Principal Investigator, A continuation and expansion of the Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship, Proposal requested by David Asai at HHMI, \$1,000,000, *Review on hold due to COVID*
- Co-Principal Investigator, FIRED UP: An immersive early field experience program to build community, support inclusivity, and foster large-scale research ideas, DBS NSF Research Traineeship Program, *Pending*, 2021-2024, \$499,997.

Active

- Principal Investigator, CC Bio INSITES: Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship, NSF- Research Coordination Networks for Undergraduate Biology Education Program, 2017-2022, \$498,023.
- Principal Investigator, Collaborative Research: Taking the Long View: Investigating the Role of Biology Interest and Far-Sighted Career Goals on Students' Persistence in STEM career Pathways, NSF Improving Undergraduate STEM Education Award Program, 2017-2020, (\$299,661) \$98,839.
- Co-Principal Investigator, IUSE-HSI Enhancing Introductory Biology with the Arizona Insect DNA Barcoding Course-Based Undergraduate Research Experience, Improving Undergraduate Education for Hispanic Serving Institutions Program, 2019-2022, \$298,323.
- Co-Principal Investigator, RCN UBE Failure as a part of Learning, A Mindset Education Network (FLAMENet), NSF Research Coordination Networks for Undergraduate Biology Education Award Program, 2019-2024, \$500,000.
- Principal Investigator, Combining Course-based Undergraduate Research Experiences with Place-based Learning to Increase Student Retention, Civic Engagement, and self-efficacy, NSF Improving Undergraduate STEM Education Award Program, 2018-2021, \$299,951.
- Principal Investigator, Career Life Supplement-RCN-UBE: CC Bio INSITES: Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship, NSF- Research Coordination Networks for Undergraduate Biology Education Program, 2020, \$24,997.

Completed

- Co-Principal Investigator, RCN UBE Incubator: Failure as a part of Learning, A Mindset Education Network (FLAMENet), NSF Research Coordination Networks for Undergraduate Biology Education Award Program, 2018-2019, \$75,000.
- Co-Principal Investigator, Community College Biology Education Research Meeting, NSF Improving Undergraduate STEM Education Award Program, 2014-2015, \$49,000.

Peer-reviewed publications

Since arriving at CU

+ -indicates a postdoc author

***-indicates graduate student author**

**** -indicates undergraduate student author**

Forrester C*, Davies K, Dee L, **Corwin LA**. (2021) *In Press*. Ain't No Mountain Pine Enough: A Case Study of How Mountain Pine Beetles are Affecting Ecosystem Processes. *Course Source*.

Fried E*, Martin A, Esler A**, Tran A**, **Corwin LA**. (2020) Design-based learning for a sustainable future: Student outcomes resulting from a biomimicry curriculum in an evolution course. *Evolution Education and Outreach*. Doi: 10.1186/s12052-020-00136-6

Knekta E⁺, Rowland AA⁺, **Corwin LA**, Eddy S. (2020) Measuring university students' interest in biology: evaluation of an instrument targeting Hidi and Renninger's individual interest. *International Journal of STEM Education* 7, Doi: 10.1186/s40594-020-00217-4

Corwin LA, Morton TR, Demetriou C, Panter AT. (2020) A qualitative investigation of STEM students' switch to non-STEM majors post-transfer. *Journal of Women and Minorities in Science and Engineering* 26(3). Doi: 10.1615/JWomenMinorScienEng.2020027736

Corwin LA, Kiser S, LoRe SM, Miller JM, Aikens ML. (2019) Community college instructors' perceptions of constraints and affordances related to teaching quantitative biology skills and concepts. *CBE-Life Sciences Education* 18(4). Doi: 10.1187/cbe.19-01-0003

Rowland AA⁺, Dounas-Frazer DR⁺, Rios L⁺, Lewandowski HJ, **Corwin LA**. (2019) Using the Life Grid interview technique in STEM education research. *International Journal of STEM Education* 6(32). Doi: 10.1186/S40594-019-0186-z

Rowland AA⁺, Knekta E⁺, Eddy S, **Corwin LA**. (2019) Defining and measuring students' interest in biology: An analysis of the biology education literature. *CBE- Life Sciences Education* 18(3). Doi: 10.1187/cbe.19-02-0037

Murren CJ, Wolyniak MJ, Rutter MT, Bisner AM, Callahan HS, Strand AE, **Corwin LA**. (2019) Undergraduates phenotyping Arabidopsis knockouts in a course-based undergraduate research experience: Exploring plant fitness and vigor using quantitative phenotyping methods. *Journal of Microbiology and Biology Education Research* 20(2). Doi: 10.128/jmbe.v20i2.1650

Diaz-Martinez LA, Fisher GA, Esparza D**, Bhatt JM, D'Arcy CE, Apodaca J, Brownell S, **Corwin L**, Davis WB, Floyd KW, Killion PJ, Madden J, Marsteller, P, Mayfield-Meyer T,

McDonald KK, Rosenberg M, Yarborough MA, Olimpo JT. (2019) Recommendations for effective integration of ethics and responsible conduct of research education into course-based undergraduate research experiences: A meeting report. *CBE- Life Sciences Education* 18(2), mr2. Doi: 10.1187/cbe.18-10-0203

Henry MA⁺, Shorter S⁺, Charkoudian L, Heemstra JM, **Corwin LA**. (2019) FAIL is not a four-letter word: A theoretical framework for exploring undergraduate students' approaches to academic challenge and responses to failure in STEM learning environments. *CBE- Life Sciences Education* 18(1), ar11. Doi: 10.1187/cbe.18-06-0108

Gin LE^{**}, Rowland AA⁺, Steinwand B, Bruno J, **Corwin LA**. (2018) Students who fail to achieve predefined research goals may still experience many positive outcomes as a result of CURE participation. *CBE – Life Sciences Education* 17(4), ar57. Doi: 10.1187/cbe.18-03-0036

Corwin LA, Dolan EL, Graham MJ, Hanauer, DI, Pelaez, N. (2018) The need to be sure about CUREs: Discovery and relevance as critical elements of CUREs for Nonmajors. *Journal of Microbiology and Biology Education Research* 19(3), 19.3.102 Doi: 10.1128/jmbe.v19i3.1683

Feig AI, **Corwin LA**, Dolan E, Walker J. (2018) Assessment of CUREs. In R. Waterman and J Heemstra. *Expanding the CURE Model: Course-baed Undergraduate Research Experience*. (pp. 75-89). Tuscon, AZ, Research Corporation for Science Advancement.

Corwin LA, Runyon CR, Ghanem E, Sandy M, Clark G, Palmer GC, Rodenbusch S, Dolan E. (2018) Effects of Discovery, Iteration, and Collaboration in Laboratory Courses on Undergraduates' Research Career Intentions Fully Mediated by Student Ownership. *CBE-Life Sciences Education* 17(2), ar20. Doi: 10.1187/cbe.17-07-0141

Corwin LA, Prunske S, Seidel S. (2018) Scientific Presenting: Using evidence-based classroom practices to deliver effective conference presentations. *CBE – Life Sciences Education* 17(1), es1. Doi: 10.1187/cbe.17-07-0146.

Morton T^{@+}, **Corwin LA**[@], Demetriou C, Panter, AT. 2017. Why STEM Transfers switch to Non-STEM majors: A preliminary qualitative investigation. *Proceedings of the American Educational Research Association Annual Meeting*. USE: AERA Books. [@]Contributed equally

Schinske J, Balke V, Bangera MG, Bonney K, Brownell S, Carter R, Curran-Everett D, Dolan E, Elliott S, Fletcher F, Gonzalez B, Gorga J, Hewlett J, Kiser S, McFarland J, Misra A, Nenortas A, Ngeve S^{**}, Pape-Lindstrom P, Seidel S, Tuthill M, Yin Y, **Corwin L**. 2017. Broadening Participation in Biology Education Research: Engaging Community College Students & Faculty. *CBE - Life Sciences Education* 16 mr1. Doi: 10.1187/cbe.16-10-0289

Aikens ML[@], **Corwin LA**[@], Andrews TC, Couch BA, Eddy SL, McDonnel L, Trujillo G. 2016. A guide for graduate students interested in postdoctoral positions in biology education research. *CBE-Life Sciences Education*, 15, es10. [@] Contributed equally

Prior to arriving at CU

Corwin LA, Runyon C, Robinson A, Dolan EL. 2015. The Lab Course Assessment Survey: A tool to measure three dimensions of research-course design. *CBE-Life Sciences Education*, 14, ar37. Doi: 10.1187/cbe.15-03-0073

Corwin LA, Graham MJ, and Dolan EL. 2015. Modeling Course-based Undergraduate Research Experiences: An agenda for future research and evaluation. *CBE-Life Sciences Education*, 14,

es1. Doi: 10.1187/cbe.14-10-0167

Corwin Auchincloss L, Laursen SL, Branchaw JL, Eagan K, Graham M, Hanauer DI, Lawrie G, McLinn C, Palaez N, Rowland S, Towns M, Trautmann NM, Varma-Nelson P, Weston TJ, and Dolan EL. 2014. Assessment of course-based undergraduate research experiences: A meeting report. *CBE-Life Sciences Education*, 13, 29-40. Doi: 10.1187/cbe.14-01-0004

Des Marais DL, **Auchincloss LC**, Sukamtoh E, McKay JK, Logan T, Richards JH, and Juenger TE. 2014. Natural variation at *MPK12* underlies water use efficiency differences in *Arabidopsis thaliana* and reveals a pleiotropic link between guard cell size and ABA response. *Proceedings of the National Academy of Sciences*, 111, 2836-2841. Doi: 10.1073/pnas.1321429111

Auchincloss LC, Easlon HM, Levine D, Donovan L, and Richards JH. 2014. Pre-dawn stomatal opening does not substantially enhance early-morning photosynthesis in *Helianthus annuus*. *Plant, Cell & Environment*, 37, 1364-1370. Doi: 10.1111/pce.12241

Auchincloss LC, Richards JH, Young C, and Tansey M. 2012. Inundation depth, duration, and temperature influence Fremont cottonwood (*Populus fremontii*) growth and survival. *Western North American Naturalist*, 72, 323-333. Doi: 10.3398/064.072.0306

Giordanengo JH, **Auchincloss LC**, and Ebersole JJ. 2006. Alpine ecosystem restoration of recreational disturbances in Colorado's wilderness areas. Pp 165-180 in: WE Keammerer, editor, *Proceedings: High Altitude Revegetation Workshop No. 17*. Information Series No. 101, Colorado Water Resources Research Institute, Colorado State Univ. Fort Collins, CO USA

White papers

Since arriving at CU

Corwin LA@, Harvey P@, Suding K, Graf J, Ellingson E, Bhattacharya A, Bilge B, Casagrand J, Emery N, Fillman C, Foley T, Guild N, Jahn A, Lee M, Pao L, Power J, Chasteen S. 2017. Course-based Undergraduate Research Experiences: Advancing CU Boulder's Strategic Goals. *White paper submitted to the CU Boulder Academic Futures Initiative*. @Contributed equally

Presentations

+ -indicates a postdoc

*-indicates graduate student

** -indicates undergraduate student

Invited presentations

Since arriving at CU

Corwin LA. 2020 Failing (in order) to succeed – The benefits of failure in research-based courses. *BIOME BioQUEST annual workshop, Keynote Speaker*, Online

Corwin LA. 2019 Failing (in order) to succeed? Exploring how challenge and failure in research-based courses can become a learning opportunity. *Purdue University, Colloquium Speaker*, West Lafayette, IN.

Corwin LA. 2018 The roles of interest, career goals, and response to challenge in student persistence: a micro and macroscopic view. *University of Nebraska, Lincoln, Colloquium Speaker*, Lincoln NE.

Corwin LA, Runyon C, Ghanem E, Sandy M, Clark G, and Dolan EL. 2017. Connecting Lab Course Design to Outcomes: Project Ownership & Intent to Persist in Science. *University of Northern Colorado, Colloquium Speaker*, Greeley CO.

Corwin LA, Runyon C, Ghanem E, Sandy M, Clark G, and Dolan EL, 2017. Connecting Lab Course Design to Outcomes: Project Ownership & Intent to Persist in Science. *University of Colorado, Denver, Colloquium Speaker*, Denver CO.

Contributed presentations

Since arriving at CU

Henry MA⁺, Charkoudian L, Heemstra J, **Corwin LA.** 2021. Assessing coping style in undergraduate STEM contexts: Re-validating and modifying the Brief COPE. *Society for the Advancement of Biology Education Research WEST annual conference 2021*, Online.

Henry MA⁺, Charkoudian L, **Corwin LA,** Heemstra J. 2020. Mentoring with (and through) Failure. *MIT Physics Mentoring Program Seminar, MIT*, Online.

Henry MA⁺, Romero-Reyes MA^{**}, Charkoudian LK, Le B, **Corwin LA,** Heemstra JM. 2020. Mid-semester assessment as a tool for. More accurate interpretation of education intervention effects. *The Southeastern Teaching of Psychology Conference*, Atlanta, GA.

Yu J^{**}, Ulzii-Orshikh N^{**}, Henry MA⁺, Charkoudian LK, Le B, **Corwin LA,** Heemstra JM. (Poster) 2020. Maladaptive coping predicts fixed mindset in Asian students. *The Southeastern Conference on the Teaching of Psychology*, Atlanta, GA.

Alam IA^{*}, **Corwin LA.** 2020. Validation of the Scientific Civic Engagement Survey. *Society for the Advancement of Biology Education Research annual conference 2020*, Online.

Donis K^{*}, Eddy S, **Corwin LC.** (Poster) 2020. First Year Students' Confidence in Pursuit of Biology Careers Correlates to Content Interest and Career Self-Efficacy. *Society for the Advancement of Biology Education Research annual conference 2019*, Online.

Woolner EJ^{**}, **Corwin, LC.** (Poster) 2020. Reviewing the methods, challenges, and outcomes of recent Western entomology. *Society for the Advancement of Biology Education Research annual conference 2019*, Online.

Henry MA⁺, Romero-Reyes MA^{**}, Charkoudian LK, Le B, Heemstra JM, **Corwin LA.** (Poster) 2020. Factors Affecting Undergraduate Students' Responses to Academic Failures: Beyond the Cognitive. *National Institute on the Teaching of Psychology*, St. Pete Beach, FL.

Charbonnier JF⁺, Hernandez D^{*}, **Corwin LA,** Eddy S. 2019. Dreams clarify, but strategies don't increase: Exploring the future work selves in lower division and upper division students. *Society for the Advancement of Biology Education Research annual conference 2019*, Minneapolis, MN.

Corwin LA, Harsh J, Ramsey M^{*}, Woolner E^{**}, Ellis S^{**}, Gustafson N^{**}. 2019. Two sequential research-based courses afford students opportunities to develop scientific coping skills. *Society for the Advancement of Biology Education Research annual conference 2019*, Minneapolis, MN.

Fried ER*, Martin A, **Corwin LA**. (Poster) 2019. Connecting science to society in an undergraduate evolution course. *Society for the Advancement of Biology Education Research annual conference 2019*, Minneapolis, MN.

Henry MA⁺, Shorter S⁺, Charkoudian LK, Heemstra JM, **Corwin LA**. (Poster) 2019. Validating existing assessments of non-cognitive psychological and motivational frameworks for undergraduate STEM populations *Society for the Advancement of Biology Education Research annual conference 2019*, Minneapolis, MN.

Rowland AA⁺, Franks K**, Eddy SL, **Corwin LA**. (Poster) 2019. A Qualitative investigation of students' motivation to engage in the critical experiences required for persistence in a biology career path. *Society for the Advancement of Biology Education Research annual conference 2019*, Minneapolis, MN.

Eddy S, **Corwin LA**, Charbonnier JF⁺, Knekta E⁺. 2019 Understanding how entering biology majors' visions of the future and current interests influence their strategies for success. *The Gordon Research Conference on Undergraduate Biology Education Research*, Lewiston, ME.

Schinske J, **Corwin LA**, Ramsey M*, Fried E*, Nenortas A, Fletcher L. (2019). Who's Asking the Questions in BER? A Network Approach to Empowering Community College BER Investigators. *The Gordon Research Conference on Undergraduate Biology Education Research*, Lewiston, ME.

Henry MA⁺, Shorter S⁺, Charkoudian LK, Heemstra JM, Corwin LA. (Poster) 2019. Creating and assessing classroom interventions to improve college-level STEM students' approaches and reactions to challenges and failure. *The Gordon Research Conference on Undergraduate Biology Education Research*, Lewiston, ME.

Henry MA⁺, Shorter S⁺, Charkoudian LK, Heemstra JM, **Corwin LA**. 2019. Creating and assessing classroom interventions to improve college-level STEM students' approaches and reactions to challenges and failure. *The Gordon Research Symposium on Undergraduate Biology Education Research*, Lewiston, ME.

Corwin LA, Harsh J, Ellis S**, Gustafson N**, Woolner E**. 2019. Research-based courses expose students to scientific obstacles and afford opportunities to practice scientific coping. *Society for the Advancement of Biology Education Research WEST annual conference 2019*, Irvine, CA.

Aikens M, **Corwin L**, Kiser S, LoRe S*, and Miller J. (Poster) 2018. Teaching quantitative biology skills in introductory biology: Community college faculty interviews. *National Association of Biology Teachers annual conference 2018*, San Diego, CA.

Corwin LA, Ellis S**, Gustafson N**, Woolner E**, Harsh J. 2018. Research-based courses expose students to scientific obstacles and offer opportunities to practice scientific coping. *Society for the Advancement of Biology Education Research annual conference 2018*, Minneapolis, MN.

Fried E*, Martin A, Esler A**, Varni M**, **Corwin LA**. (Poster) 2018. Practicing divergent thinking in an undergraduate evolution course through biomimicry. *Society for the Advancement of Biology Education Research annual conference 2018*, Minneapolis, MN.

Rowland AA⁺, Franks KE**, Shi J, Eddy SL, **Corwin LA**. (Poster) 2018. A Qualitative investigation of students' biology interest & career goals related to persistence in STEM career

pathways. *Society for Advancement of Biology Education Research Annual Meeting*. Minneapolis, MN.

Franks KE**, Rowland AA⁺, Eddy SL, **Corwin LA**. (Poster) 2018. A qualitative investigation of supports and barriers experienced by undergraduates impacting persistence in STEM career pathways. *American Society for Cell Biology (ASCB) Annual Meeting*. San Diego, CA.

Rowland AA⁺, Franks KE**, Eddy SL, **Corwin LA**. (Poster) 2018. A qualitative investigation of students' biology interest & career goals related to persistence in STEM career pathways. *American Society for Cell Biology (ASCB) Annual Meeting*. San Diego, CA.

Schinske J, **Corwin LA**, Nenortas A, McFarland J. (Poster) 2018. Biology education research at community colleges – Exploring opportunities, challenges, and support strategies. *Society for the Advancement of Biology Education Research WEST annual conference 2019*, Irvine, CA.

Corwin LA, Schinske J. 2017. New frontiers in biology education research: What we learned from gathering Community College Faculty on the cutting edge of research in teaching and learning. *National Association of Biology Teacher annual conference 2017*. St. Louis, MO.

Ciancanelli B, Harvey P, **Corwin LA**, Knight J, Chasteen S. (Poster) 2017. TRESTLE Faculty Scholars Groups: Spreading Knowledge and Generating Community. *STEM Education Symposium, CU Boulder*. Boulder CO.

Corwin LA, Gin L**, Steinwand B, Bruno J. 2017. Diving into qualitative data from a CURE on seafood mislabeling to understand how course design influences student outcomes. *Society for the Advancement of Biology Education Research annual conference 2017*, Minneapolis, MN.

Corwin L. 2017. Discussion of disciplinary differences in Course Based Undergraduate Research Experiences. *CU Boulder Discipline Based Education Research Group Meeting*, Boulder CO.

Corwin LA, Morton T⁺, Demetriou C, Panter A. (Poster) 2017. Why STEM transfer students leave, A preliminary qualitative investigation. *Gordon Research Conference on Undergraduate Biology Education Research*, Easton, MA.

Corwin LA, Morton T⁺, Demetriou C, Panter A. 2017. Why STEM transfer students leave, A preliminary qualitative investigation. *American Educational Research Association Annual Meeting*. San Antonio, TX.

Morton TR⁺, **Corwin LA**, Demetriou C, Panter A. (Poster) 2017. The choice to remain in STEM: A characterization of transfer students' experiences. *National Association for Research in Science Teaching Annual International Conference*. San Antonio, TX.

Gin L**, Steinwand B, Bruno J. **Corwin LA**, 2017. (Poster) A fishy CURE, examining student outcomes in a CURE on Seafood Mislabeling. *Society for the Advancement of Biology Education Research Western Regional Conference 2017*, Irvine CA.

Corwin LA, Runyon C, Ghanem E, Sandy M, Clark G, and Dolan EL. 2016. Connecting lab course design to outcomes: Project ownership & intent to persist in science. *Society for the Advancement of Biology Education Research annual conference 2016*, Minneapolis, MN.

Corwin LA, Runyon C, Ghanem E, Sandy M, Clark G, and Dolan EL. 2016. Connecting lab course design to outcomes: Project ownership & intent to persist in science. *CU Boulder Discipline Based Education Research Group Meeting*, Boulder, CO.

Prior to arriving at CU

Corwin LA, Runyon C, Robinson A, Merkel S, and Dolan EL, (Poster). 2015. Identifying features of effectiveness: Development and validation of the Laboratory Course Assessment Survey. *Gordon Research Conference on Undergraduate Biology Education Research*, Lewiston, ME.

Auchincloss LC, Robinson A, Merkel S, and Dolan EL, (Poster). 2014. New dimensions in lab course assessment. *National Biology Teachers Association annual conference 2014*, Cleveland, OH.

Auchincloss LC, Robinson A, Merkel S, and Dolan EL, (Poster). 2014. NextGen CURE assessment. *Society for the Advancement of Biology Education Research annual conference 2014*, Minneapolis, MN.

Auchincloss LC, Robinson A, Merkel S, and Dolan EL. (Poster). 2014. Is the treatment a CURE? Next steps for CURE assessment. *Association for Biology Laboratory Education annual conference 2014*, Eugene, OR.

Auchincloss LC, Graham MJ, and Dolan EL (Poster). 2014. Which path will you take? Modeling CUREs to develop a research agenda. *CUREnet annual conference 2014*, Cold Spring Harbor, NY.

Auchincloss LC. 2013. Student engagement and interaction in a virtual world. *Innovate 2013: Los Rios Colleges Educational Technology Conference*, Sacramento, CA.

Auchincloss LC. 2013. Learning experiences while teaching a highly interactive online course. *American River College Biology Department Professional Development Seminar Series*, Sacramento, CA.

Auchincloss LC, Richards JH, Young C, and Tansey M. 2012. Inundation depth duration and temperature influence Fremont cottonwood growth and survival. *97th Annual Ecological Society of America Meeting*, Portland, OR.

Auchincloss LC, Richards JH, Young C, and Tansey M. 2012. Inundation depth, duration, and temperature influence Fremont cottonwood growth and survival. *19th Annual California Society for Ecological Restoration Conference*, Davis, CA.

Auchincloss LC, and Richards JH. 2012. Effects of atmospheric carbon dioxide and soil nitrogen source on growth and allocation in Fremont cottonwood (*Populus fremontii*). *Plant Biology Graduate Group Tuesday Seminar Series*, Davis, CA.

Auchincloss LC, Richards JH, Young C, and Tansey M. 2012. The effects of inundation on cottonwood seedlings: Implications for river ecosystems. *Interdisciplinary Graduate and Professional Student Symposium*, Davis, CA.

Auchincloss LC, and Richards JH, (Poster). 2011. Effects of atmospheric CO₂ on NO₃⁻ utilization in a riparian giant, Fremont cottonwood. *21st Annual International Conference on Soil, Water, Energy, and Air; Association for Environmental Health and Science Foundation*, San Diego, CA.

Teaching and Mentoring

Contributions to teaching include instructing and developing new courses both at CU Boulder and beyond, archiving curricula for use by other instructors, mentoring graduate students and undergraduates in teaching and pedagogy, mentoring undergraduates, graduate students, and postdocs in biology education research, and participating in professional development offerings to improve my own teaching.

Course development and teaching

Since arriving at CU

Research University Instruction

Introduction to Ecology and Evolutionary Biology Research EBIO 1250; University of Colorado, Fall Semester 2020.

Designed and instructed the 3-credit lecture, 27 students. Topics include introductory ecology, evolution, genetics, and biogeochemical cycling. Assisted with lab design and instruction.

Design and Instruction of Course Based Undergraduate Research Experiences EBIO 6100; University of Colorado, Spring Semester 2019

Designed and instructed a two-credit graduate-level course, 8 students, Topics include curriculum design and instruction of research-based undergraduate courses.

Introduction to Quantitative Thinking in Biology EBIO 1010; University of Colorado, Spring Semester 2017-19 and 2021.

Co-designed and co-instructed with Andrew Martin, 35-52 students per section; Topics include quantitative reasoning, making claims, performing descriptive and comparative statistics.

Principles of Ecology EBIO 2040; University of Colorado, Fall Semester 2016 & 2017

Designed and instructed a three-credit lecture course; 130 students; Topics included organismal interactions, community ecology, ecosystems ecology, and global cycles among others.

High School Instruction:

Wetland Ecology and Installation Art, National Federation for the Blind Youth Slam, Towson University, Summer 2017

Designed curriculum for and instructed a week-long summer class (4 hours/day) for 10 blind and visually impaired students in wetland ecology and installation art.

Prior to arriving at CU

Research University Instruction

Biology 1104: Non-Majors Organismal Biology, University of Georgia, Spring Semester 2014

Designed and instructed a three-credit lecture course; 209 students; Topics included but were not limited to physiology, evolution, biodiversity, ecology, and global change.

Community College Instruction

California Wildflowers, American River College, Spring Semester 2013

Designed and instructed a three-credit lecture and lab course; 23 students. Topics included major plant communities, angiosperm taxonomic groups and relationships, floral structure etc.

Environmental Restoration, American River College, Spring Semester 2013

Designed and instructed a two-credit lecture and lab course; 19 students. Topics included philosophies, purposes, and procedures of restoration and restoration techniques

Natural Resource Measurements, American River College, Spring Semester 2013

Designed and instructed one third of a field measurements course; 23 students. Topics included experimental design, the scientific process, hypothesis testing and descriptive statistics.

Archived Curricula

Original curricula for ***Intro to Quantitative Thinking for Biologists EBIO 1010*** archived with Andrew Martin and Brett Melbourne

Original curricula for ***Design and Instruction of Course Based Undergraduate Research Experiences EBIO 6100*** archived

Mentoring in teaching and pedagogy

Mentoring in Course-based Undergraduate Research Experience (CURE) Development, CU Boulder, Summer 2019, Summer 2020

Met with three (2019) and one (2020) EBIO graduate students on a weekly basis to develop curricula for three laboratory sections of a new research-based introductory EBIO course.

Learning Assistant Pedagogical Mentoring and Training, CU Boulder

- Spring '21, Weekly meetings and training in pedagogy for EBIO 1010, 4 LAs
- Spring '19, Weekly meetings and training in pedagogy for EBIO 1010, 7 LAs
- Spring '18, Weekly meetings and training in pedagogy for EBIO 1010, 2 LAs
- Fall '17, Weekly meetings and training in pedagogy for EBIO 2014, 4 LAs
- Spring '17, Weekly meetings and training in pedagogy for EBIO 1010, 2 LAs

Mentoring in Case-Study Development, CU Boulder, Summer 2017

Met with three EBIO graduate students on a weekly basis to develop case-studies to be used in EBIO 2040, Principles of Ecology.

Mentoring in research

Postdoctoral research associates

- Miranda Chen, August 2020 - Current
- Meredith Henry, July 2018 – Current
- Ashley Rowland, July 2017-July 2019, Current Position: Director of Educational Content for Codon Learning
- Shayla Shorter, July 2018 – July 2019, Current Position: Program Director, Lupus Foundation of America

EBIO graduate students in my lab

- Amy Dunbar-Wallis, PhD, August 2020 - Current
- Irfanul Alam, PhD, August 2018 – Current

- Erin Fried, MA, August 2017- Fall 2019 – Current Position: Consultant for The Nature Conservancy

EBIO graduate students completing chapters in biology education

- Aislyn Keyes, PhD, August 2020 – Current
- Chiara Forrester, PhD, August 2016- Current
- Deidre Jaeger, PhD, August 2016 - Current

Undergraduates

- 15 Undergraduates have participated in research in my lab
 - 4 presented at national conferences
 - 4 completed senior theses
 - 1 is lead author on a publication
 - 4 are on publications in prep
 - 1 received the GRFP

Personal professional development in teaching

- EBIO Online Teaching Workshop, 7/20
- CU Boulder Workshop on Student Mental Health, 2/20
- CURE institute, 6/18
- Participant in an Ethics/RCR two-day faculty working group to discuss and learn about ethical conduct of research, 1/18
- Faculty Teaching Excellence Program Early Career Faculty Participant, Fall '16
- EBIO Faculty Learning Community: Considering students' identities when teaching evolution, Fall '16

Service

Contributions to service include conducting professional development in biology teaching and learning, education research, and education evaluation; serving on committees for the department and institution; attending working groups and advisory board meetings for projects in my field; and reviewing papers for various journals.

Professional development offered in teaching, research, and evaluation (national and local)

Since arriving at CU

Failure as a Part of Learning; A Mindset Education Network, Emory University

- Continuously conduct community hour meetings to discuss current research on student coping and resilience
- 5/19 & 5/21 Years Two and Three Annual National Meetings: Designed and facilitated a two-day workshop to instruct 50 instructors in psychological constructs and design interventions to help STEM students better cope with failure across formal and informal STEM learning contexts.

- 4/18, Network Launch Meeting: Designed and facilitated a two-day workshop to instruct 20 instructors psychological in constructs associated with how students deal with failure and facilitate the design of instructional interventions to help STEM students better cope with failure in academic contexts.

Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship, Howard Hughes Medical Institute

- Spring 2021, Conducted a bi-weekly workshop series on how to write and submit abstracts to professional conferences.
- 6/21, Year Three Annual National Meeting: Designed and conducted a two-day workshop for 50 instructors on how to present biology education research at professional conferences.
- 6/19, Year Two Annual National Meeting: Designed and facilitated a three-day workshop for 50 instructors on how to conduct qualitative and quantitative analyses in support of Biology Education Research at Community Colleges.
- 1/19, Gaining Buy-In and Recognition for BER at your Community College, Designed and facilitated a ½ day workshop for 25 instructors at the SABERwest conference on how to gain buy-in for education research from colleagues and administrators at community colleges
- 5/18, Network Launch Meeting: Designed and facilitated a three-day workshop for 50 instructors on how to design and conduct biology education research at community colleges. Launched a national network to support this cause.

Exploring Course Based Undergraduate Research Experiences (CUREs) – Faculty Learning Community, CU Boulder, 8/17-12/17

Facilitated a bi-weekly faculty learning community on CUREs for 18 faculty including co-authoring a white paper on CURE needs at CU Boulder

Adding Course Structure to Make Our Classrooms Equitable – Workshop for the Graduate Teaching Program, CU Boulder, 9/17

Designed and facilitated a two-hour workshop for 15 students on how to structure a classroom environment to promote more equity among students.

First Steps in Planning a CURE course – Workshop Funded by the Keck Foundation, La Verne University, CA, 6/17

Invited workshop presenter. Designed and conducted a one-day workshop for 14 faculty planning to implement a CURE in the coming year.

Prior to arriving at CU

Building Capacity for Community College Biology Education Research - NSF-IUSE Meeting, Denver CO, 10/15

Proposed, received funding for, and facilitated a two-day meeting for 20 community college BER leaders with the aim of identifying ways to support community-college-specific studies in the biology education research literature.

National Academies Special Topics Summer Institute on Course-based Undergraduate Research Experiences (CUREs), University of Texas at Austin, 6/15

Planned and conducted a workshop on how to organize and accomplish specific pre-course tasks. Provided feedback on the overall design and facilitation plan for the institute workshops.

Evaluating Academic Programs: A Models to Measures Approach, Juniata College, 6/14

Conducted a workshop on education program evaluation for college faculty

Other national service

Since arriving at CU

- Member of the Community College Quantitative Biology Education Working group - current
- Member of the CURE Ethics and RCR working group - current
- Advisory board member for Enhancing STEM Student Success by Connecting Course-based Undergraduate Research Experiences to the Local Ecology and Community (NSF IUSE-HIS) – current
- Advisory board member for CAREER: Narrowing the Gap- Reducing sea ice model spread and increasing diversity and retention in geosciences (NSF CAREER) - current
- Advisory board member for CAPER: Community College Anatomy and Physiology Education Research Group (NSF RCN-UBE) – current
- Advisory board member for Contingencies Journal: A Journal of Global Pedagogy - current
- **Reviewer:**
 - NSF CAREER Program, 2018
 - NSF Research Experiences for Undergraduates Program, 2018
 - CBE-Life Sciences Education, 4-7 papers per year
 - PLOS One - ~1 paper per year
 - International Journal of STEM education – 2 papers per year
 - Journal of Chemical Education – 1 paper per year

Other departmental/Institutional service

Since arriving at CU

- EBIO Life-Boat Substitute Teaching for Terry Bilinski, 10 hours / week, 4 weeks.
- EBIO Undergraduate Education Committee, Fall 2020-current
- EBIO Merit Review committee, Spring 2019
- EBIO Executive committee, 2017-2018
- EBIO Outcomes assessment committee, 2016-2019

Prior to arriving at CU

- Transfer Success Committee Member, University of North Carolina at Chapel Hill, current
- Student Success Conference Committee Member, University of North Carolina at Chapel Hill, current
- Chemistry Learning Specialist Hiring Committee Member, University of North Carolina at Chapel Hill, current

- Committee Member, Group to redesign introductory biology course offerings, American River College, 4/13-6/13

Professional memberships

- American Educational Research Association (AERA)
- American Society of Plant Biologists (ASPB)
- Ecological Society of America (ESA)
- Society for the Advancement of Biology Education Research (SABER)