

# Lisa A Corwin (Auchincloss)

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## Professional Appointments

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### 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, Athens / University of Texas at Austin**

**2013**                **Adjunct Natural Resources Instructor, American River College, Sacramento**

## Education

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**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



Our lab performs **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, civically-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, resilience, and civic engagement in biology and STEM fields. They also include efforts to apply theory from psychology and cognitive science to biology learning, bring new methodologies and measures to the field, analyze prior biology education research, and draw attention to critical questions in biology education.

### Grants

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#### *Since arriving at CU*

- **Principal Investigator**, Career Life Supplement: A Power of Place Learning Experience & Research Network (APPLE R Net) to Support Community College Student Success and Civic Engagement, NSF Improving Undergraduate Education Award Program, 2022-2024, \$48,486.
- **Principal Investigator**, A Power of Place Learning Experience & Research Network (APPLE R Net) to Support Community College Student Success and Civic Engagement, NSF Improving Undergraduate Education Award Program, 2022-2024, \$599,781.
- **Co-Principal Investigator**, FIRED UP: An immersive early field experience program to build community, support inclusivity, and foster large-scale research ideas, NSF Innovations in Graduate Education Research Traineeship Program, 2021-2024, \$499,997.
- **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.
- **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.
- **Co-Principal Investigator**, IUSE-HSI Enhancing Introductory Biology with the Arizona Insect DNA Barcoding Course-Based Undergraduate Research Experience, NSF Improving Undergraduate Education for Hispanic Serving Institutions Program, 2019-2022, \$298,323.
- **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 Program, 2018-2022, \$299,951.
- **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 Program, 2018-2019, \$75,000.
- **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 Program, 2017-2021, \$98,839 (Total \$299,661).

#### *Prior to arriving at CU*

- **Co-Principal Investigator**, Community College Biology Education Research Meeting, NSF Improving Undergraduate STEM Education Award Program, 2014-2015, \$49,000.

### **Internal Grants**

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- **Co-Principal Investigator**. Nature Based Solutions via Community-Engaged Research and Education, Deans' Innovation Fund, 2024, \$40,000

### **Peer-reviewed research publications**

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**+postdoc mentored by Corwin**

**\*graduate student mentored by Corwin**

**\*\*undergraduate student mentored by Corwin**

### **Publications in preparation**

Dunbar-Wallis A\*, Katcher J, Moore W, **Corwin LA**. Bee The CURE: Increasing student self-efficacy, science identity, and predictors of science civic engagement in a community college CURE. *In Preparation for Submission to Life Sciences Education*

Alam I, **Corwin LA**. How does belonging influence student outcomes in community-engaged CUREs? *In Preparation for Submission to Life Sciences Education*

Polutchko SK, Demmig-Adams B, Arbor RN, Stewart J, Davies KF, Adams WW, Keyes AA, Gleason SM, Gonzalez-Pita H, Frank F, **Corwin LA**, Space mission ecology: Making connections among science disciplines through the lens of a unique plant. *In Preparation for Submission to Course Source*.

Saha S, McKenzie V, Emery N, Resasco J, Taylor S, Krishnan S, **Corwin LA**, *Examining how student identities interact with an immersive field ecology course and implications for graduate school education. In preparation for Life Sciences Education*

Krishnan S, Harsh J, **Corwin LA**. Strengths or Vulnerabilities? A critical examination of minoritized students' perceptions of the impact of salient identities of experiences of failure in science. *In preparation for Life Sciences Education*

### **Accepted and published articles h-index: 17**

*Since arriving at CU*

- 29)** Chen Musgrove M<sup>+</sup>, Ko M, Schinske J, **Corwin L**. (2024) Broadening Participation in Biology Education Research: A role for affinity groups in promoting social connectivity, self-efficacy, and belonging. *CBE – Life Sciences Education*. In Press.
- 28)** Dunbar-Wallis A\*, Katcher J, Moore W, **Corwin LA**. (2023) An online CURE taught at a community college during the pandemic shows mixed results for development of research self-efficacy and in-class relationships. *Journal of Science Education and Technology*. 1-13. Doi: 10.1007/s10956-023-10078-5

- 27) Alam I\*, Ramirez K, Semsar K, **Corwin LA.** (2023) The Scientific Civic Engagement (SCE) Survey: An instrument to measure undergraduates' engagement with the community using their science skills. *CBE – Life Sciences Education*. Doi: 10.1187/cbe.22-02-0032
- 26) Forester C\*, Schwikert S, Foster J, **Corwin LA.** (2022) Undergraduate R programming anxiety in ecology: Persistent gender gaps and coping strategies. *CBE – Life Sciences Education* 21(2), ar29. Doi: 10.1187/cbe.21-05-0133
- 25) **Corwin LA,** Ramsey M, Vance E, Woolner E\*\*, Ellis S\*\*, Gustafson N\*\*, Harsh J. (2022) A comparison of students' perceived coping in response to research-based challenges and failures in two sequential research-based courses. *CBE – Life Sciences Education* 21(2), ar23. Doi: 10.1187/cbe.21-05-0131
- 24) Henry M<sup>+</sup>, Shorter S<sup>+</sup>, Charkoudian L, Heemstra J, Le B, **Corwin LA.** (2022) Coping behavior versus Coping Style: Characterizing a measure of coping in undergraduate STEM contexts. *International Journal of STEM Education* 9(1), 1-26. Doi: 10.1186/s40594-022-00331-5
- 23) Musgrove MC<sup>+</sup>, Nied S\*\*, Cooley A\*\*, Schinske J, **Corwin LA.** (2022) Experiences of barriers, supports, and belonging in community college faculty participating in biology education research. *CBE – Life Sciences Education* 21(2), ar16. Doi: 10.1187/cbe.21-09-0246
- 22) Henry MA<sup>+</sup>, Shorter S<sup>+</sup>, Charkoudian LK, Heemstra JM, Le B, **Corwin LA.** (2021). Quantifying fear of failure in STEM. Modifying and evaluating the performance Failure Appraisal Inventory (PFAI) for use with STEM undergraduates. *International Journal of STEM Education* 8. Doi: 10.1186/s40594-021-00300-4
- 21) 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
- 20) Knekta E, Rowland AA<sup>+</sup>, **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
- 19) **Corwin LA,** Morton TR, Demetriou C, Panter AT. (2020) A qualitative investigation of STEM students switch to nonSTEM majors post-transfer. *Journal of Women and Minorities in Science and Engineering* 26(3). Doi: 10.1615/JWomenMinorScienEng.2020027736
- 18) **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
- 17) Rowland AA<sup>+</sup>, 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
- 16) Rowland AA<sup>+</sup>, 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

- 15) 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
- 14) Henry MA<sup>+</sup>, Shorter S<sup>+</sup>, 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
- 13) Gin LE<sup>\*\*</sup>, Rowland AA<sup>+</sup>, 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
- 12) **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
- 11) **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
- 10) **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.
- 9) Morton T<sup>@</sup>, **Corwin LA**<sup>@</sup>, 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*. <sup>@</sup>Contributed equally
- 8) Schinske J, Balke V, Bangera MG, Bonney K, Brownell S, Carter R,... **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
- 7) Aikens ML<sup>@</sup>, **Corwin LA**<sup>@</sup>, Andrews TC, Couch BA, Eddy SL, McDonnell L, Trujillo G. (2016) A guide for graduate students interested in postdoctoral positions in biology education research. *CBE – Life Sciences Education* 15, es10. <sup>@</sup> Contributed equally

#### **Prior to arriving at CU**

- 6) **Corwin LA**, Runyon C, Robinson A<sup>\*\*</sup>, 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
- 5) **Corwin LA**, Graham MJ, 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

- 4) **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, 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
- 3) Des Marais DL, **Auchincloss LC**, Sukamtoh E, McKay JK, Logan T, Richards JH, 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
- 2) **Auchincloss LC**, Easlon HM, Levine D, Donovan L, 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
- 1) **Auchincloss LC**, Richards JH, Young C, 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

### **Peer-reviewed publications of curricula and citizen-science techniques**

#### *Since arriving at CU*

- 5) Keyes AA\*, Dee LE, Wright JT, Davies KF, Polutchko, SK\*, Bastias M, **Corwin LA**. (2024) Marsh Madness: Using video games and a case study to explore food webs and ecosystem services in Carpinteria Salt Marsh Reserve. *Course Source*. In Press.
- 4) Jaeger D<sup>+</sup>, Suding K, Alam I\*, Bilinski T, Dunbar-Wallis A\*, **Corwin L**. (2024) The Power of Place: A course-based undergraduate research experience studying urban ecology, local apple trees, and disease susceptibility. *Course Source*. In Press.
- 3) Dunbar-Wallis A\*, Jaeger D\*, Suding K, Littman P, Baumgartner L, Prater M, Schuenemeyer A, Tuff K, Hogstad AB, Alam I, **Corwin LA**. (2021). Creating study-specific tools to increase community and student engagement. *Citizen Science: Theory and Practice* 6(1), 25. Doi: <http://doi.org/10.5334/cstp.420>
- 2) Forrester C\*, Davies K, Dee L, **Corwin LA**. (2021). Ain't No Mountain Pine Enough: A Case Study of How Mountain Pine Beetles are Affecting Ecosystem Processes. *Course Source*. Doi: 10.24918/cs.2021.11
- 1) 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

### **White papers & book chapters**

#### *Since arriving at CU*

- Feig AI, **Corwin LA**, Dolan E, Walker J. (2018) Assessment of CUREs. In R. Waterman and J

Heemstra. *Expanding the CURE Model: Course-based Undergraduate Research Experience*. (pp. 75-89). Tuscon, AZ, Research Corporation for Science Advancement.

**Corwin LA**<sup>@</sup>, Harvey P<sup>@</sup>, 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*. <sup>@</sup>Contributed equally

### ***Prior to arriving at CU***

Giordanengo JH, **Auchincloss LC**, 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

### **Edited books**

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**Corwin LA**, Charkoudian L, Heemstra J. (2022) *Confronting Failure: Approaches to Building Confidence and Resilience in Undergraduate Researchers*. Council on Undergraduate Research.

### **Presentations**

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**+postdoc mentored by Corwin**

**\*graduate student mentored by Corwin**

**\*\*undergraduate student author mentored by Corwin**

### **Invited seminars, keynotes, and plenary talks**

#### ***Since arriving at CU***

- 22) Corwin LA.** (2024) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Department of Biology, Colorado State University, Fort Collins, CO*. (Upcoming)
- 21) Corwin LA.** (2023) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Department of Ecology & Evolutionary Biology, University of Tennessee, Knoxville, TN*.
- 20) Corwin LA.** (2023) Scientific Civic Engagement: Supporting local communities via course-based undergraduate research experiences (CUREs). *Department of Integrative Biology, University of South Florida, FL*.
- 19) Corwin LA.** (2023) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Center for Teaching and Learning, University of Colorado, Boulder*
- 18) Corwin LA.** (2023) Failing (in order) to succeed: Exploring response to failure in STEM and how to leverage failure to achieve success. *Undergraduate Research Symposium, Colorado School of Mines Keynote Speaker, Golden, CO*
- 17) Corwin LA.** (2022) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Department of Ecology & Evolutionary Biology, University of Tennessee, Knoxville, TN. (Forthcoming)*

- 16) **Corwin LA.** (2022) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Department of Cell Biology, University of Georgia, Athens, GA.*
- 15) **Corwin LA.** (2022) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Plenary Speaker, American Physiological Society: Institute on Teaching and Learning, Madison, WI.*
- 14) **Corwin LA.** (2022) Failing (in order) to succeed: Exploring how challenge and failure in CUREs can become a learning opportunity. *Biology Department, James Madison University, Online.*
- 13) **Corwin LA.** (2022) Scientific Civic Engagement with the Boulder Apple Tree Project: Supporting local communities via course-based undergraduate research experiences (CUREs). *Quantitative Biosciences and Engineering Program Colorado School of Mines. Golden, CO*
- 12) **Corwin LA.** (2022) Scientific Civic Engagement with the Boulder Apple Tree Project: Supporting local communities via course-based undergraduate research experiences (CUREs). *Department of Biology Teaching and Learning, University of Minnesota. Online*
- 11) **Corwin LA.** (2022) Scientific Civic Engagement with the Boulder Apple Tree Project: Supporting local communities via course-based undergraduate research experiences (CUREs). *Broadening Representation and Equity within Science Speaker, Ecology, Evolution, & Behavior Department, University of Minnesota. Online.*
- 10) **Corwin LA.** (2021) Scientific Civic Engagement: The Boulder Apple Tree Project. *Department of Biological Sciences, University of Texas El Paso, Online.*
- 9) **Corwin LA.** (2021) Scientific Civic Engagement: The Boulder Apple Tree Project. *Keynote, Life Discovery Conference, Estes Park, CO.*
- 8) **Corwin LA.** (2021) Failing (in order) to Succeed: Helping STEM students to approach challenges, cope with failures, and develop scientific resilience. *STEM Educators Lecture, Center for Teaching and Learning, Temple University, Online.*
- 7) **Corwin LA.** (2021) Failing (in order) to Succeed: Helping STEM students to approach challenges, cope with failures, and develop scientific resilience. *Department of Chemistry and Chemical Biology, Northeastern University, Online.*
- 6) **Corwin LA.** (2021) CUREs 2.0 Translating critical elements into action. *Grand Challenges Initiative Invited Speaker, Chapman University, Online.*
- 5) **Corwin LA.** (2020) Failing (in order) to succeed: The benefits of failure in research-based courses. *Keynote Speaker, BIOME BioQUEST annual workshop, Online.*
- 4) **Corwin LA.** (2019) Failing (in order) to succeed? Exploring how challenge and failure in research-based courses can become a learning opportunity. *Department of Biological Sciences, Purdue University, West Lafayette, IN.*



- 3) **Corwin LA.** (2018) The roles of interest, career goals, and response to challenge in student persistence: a micro and macroscopic view. *School of Natural Resources. University of Nebraska, Lincoln NE.*
- 2) **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. *Department of Biological Sciences, University of Northern Colorado, Greeley CO.*
- 1) **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. *Department of Integrative Biology, University of Colorado, Denver, Denver CO.*

### **Contributed presentations**

#### *Since arriving at CU*

#### ‡ invited presentation by a colleague or student

- 56) Saha, S<sup>+</sup>, Emery N, Taylor S, Resasco J, Krishnan S<sup>+</sup>, McKenzie V, **Corwin LA** (2023) Getting FIRED-UP about graduate school: The role of place in community building and field-specific training. *Geological Society for America Annual Meeting 2023, Pittsburgh, PA.*
- 55) Jaeger D<sup>+</sup>, Dunbar-Wallis A\*, Bilinski T, Prater M, Littman P, Baumgartner L, **Corwin LA** (2023) A power of place learning experience and research network (APPLE R Net) to support Community College Student research self-efficacy. *Society for the Advancement of Biology Education Research annual conference 2023, Minneapolis, MN.*
- 54) Dunbar-Wallis AK\*, Moore W, Katcher J., **Corwin LA** (2023) Bee-ing the CURE: Science Civic Engagement *Society for the Advancement of Biology Education Research annual conference 2023, Minneapolis, MN.*
- 53) Saha, S<sup>+</sup>, Emery N, Taylor S, Resasco J, Krishnan S<sup>+</sup>, McKenzie V, **Corwin LA** (2023) Getting FIRED-UP about ecology: Transforming the EBIO graduate program through building a diverse community with field-specific training. *Society for the Advancement of Biology Education Research annual conference 2023, Poster, Minneapolis, MN.*
- 52) Krishnan S<sup>+</sup>, Harsh H, **Corwin LA** (2023) A CURE for Failure: Investigating how students' intrapersonal constructs change through failure experiences in CUREs. *Society for the Advancement of Biology Education Research annual conference 2023, Poster, Minneapolis, MN.*
- 51) **Corwin LA,** Saha, S<sup>+</sup>, Emery N, Taylor S, Resasco J, Krishnan S<sup>+</sup>, McKenzie V, (2023) Place, program design, & student identities influence students' sense of community. *Gordon Research Conference for Undergraduate Biology Education Research 2023, Poster, Lewiston, ME.*
- 50) Krishnan S<sup>+</sup>, Harsh H, **Corwin LA** (2023) A CURE for Failure: A Qualitative Investigation of PEER Students' Experiences of Failure in Course-based Undergraduate Research

Experiences. *Gordon Research Conference for Undergraduate Biology Education Research 2023, Poster, Lewiston, ME.*

- 49) Alam I\*, Olimpo J, **Corwin LA** (2023) How do students' social identities influence the predictors of their future Scientific Civic Engagement? *Gordon Research Conference for Undergraduate Biology Education Research 2023, Poster, Lewiston, ME.*
- 48) Dunbar-Wallis A\*, Jaeger D, Baumgartner L, Richards M, Littman P, Bilinski T, Suding K, **Corwin LA** (2023) APPLE R Net and Instructor Professional Development: Getting to the core with CURE modules. *Gordon Research Conference for Undergraduate Biology Education Research 2023, Poster, Lewiston, ME.*
- 47) Alam I\*, Suding K, Jaeger D<sup>+</sup>, Dunbar-Wallis AK\*, **Corwin LA.** (2022) Measuring changes in undergraduates' scientific civic engagement in a community engaged CURE. *Society for the Advancement of Biology Education Research annual conference 2022, Minneapolis, MN.*
- 46) Musgrove MC<sup>+</sup>; Ko ME, Schinske, JE, **Corwin, LA** (2022) Connections Matter: Social connectivity predicts sense of belonging of community college faculty in biology education research. *Society for the Advancement of Biology Education Research annual conference 2022, Minneapolis, MN.*
- 45) Dunbar-Wallis AK\*, Moore W, **Corwin LA**, Katcher J. (2022) Bee-ing self efficacious in an online CURE. *Society for the Advancement of Biology Education Research annual conference 2022, Poster, Minneapolis, MN.*
- 44) Jaeger D\*, Dunbar-Wallis AK\*, Baumgartner LK, Littman P, Prater M, Bilinski T, **Corwin LA.** (2022) A Power of Place Learning Experience and Research Network (APPLE R Net) to support community college student success and civic engagement. *Society for the Advancement of Biology Education Research annual conference 2022, Round Table, Minneapolis, MN.*
- 43) Ahler S\*, **Corwin LA**, Taylor S. (2022) Field-based courses as a bottleneck to LGBTQ+ persistence in ecology. *Society for the Advancement of Biology Education Research annual conference 2022, Round Table, Minneapolis, MN.*
- 42) Harsh J, **Corwin LA**, Stewart C, Chappell B, Hyman O. (2022) Planning to Fail: Teaching strategies to navigate failure-related research challenges in an introductory biology CURE. *Society for the Advancement of Biology Education Research annual conference 2022, Round Table, Minneapolis, MN.*
- 41) Musgrove MC<sup>+</sup>, Cooley A\*\*, Nied S\*\*, Schinske J, **Corwin LA.** (2021) Experiences of supports, barriers, and belonging in community college faculty participating in biology education research. *Society for the Advancement of Biology Education Research annual conference 2021, Online.*
- 40) Dunbar-Wallis AK\*, Moore W, Ikagawa R, Katcher J, **Corwin LA.** (2021) A qualitative case study of a cross-institutional near-peer mentoring experience within a CURE context.

*Society for the Advancement of Biology Education Research annual conference 2021, Poster, Online.*

- 39) Henry MA<sup>+</sup>, 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.*
- 38) Henry MA<sup>+</sup>, Charkoudian L, **Corwin LA**, Heemstra J. (2020) Mentoring with (and through) Failure. *MIT Physics Mentoring Program Seminar, MIT, Online.*
- 37) Henry MA<sup>+</sup>, Romero-Reyes MA<sup>\*\*</sup>, 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.*
- 36) Yu J<sup>\*\*</sup>, Ulzii-Orshikh N<sup>\*\*</sup>, Henry MA<sup>+</sup>, Charkoudian LK, Le B, **Corwin LA**, Heemstra JM. (2020) Maladaptive coping predicts fixed mindset in Asian students. *The Southeastern Conference on the Teaching of Psychology, Poster, Atlanta, GA.*
- 35) Alam IA<sup>\*</sup>, **Corwin LA**. (2020) Validation of the Scientific Civic Engagement Survey. *Society for the Advancement of Biology Education Research annual conference 2020, Online.*
- 34) Donis K, **Corwin LC**, Eddy S. (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 2020, Online.*
- 33) Woolner EJ<sup>\*\*</sup>, **Corwin, LC**. (2020.) Reviewing the methods, challenges, and outcomes of recent Western entomology education. *Society for the Advancement of Biology Education Research annual conference 2020, Poster, Online.*
- 32) Henry MA<sup>+</sup>, Romero-Reyes MA<sup>\*\*</sup>, Charkoudian LK, Le B, Heemstra JM, **Corwin LA**. (2020) Factors Affecting Undergraduate Students' Responses to Academic Failures: Beyond the Cognitive. *National Institute on the Teaching of Psychology, Poster, St. Pete Beach, FL.*
- 31) Charbonnier JF<sup>+</sup>, Hernandez D<sup>\*</sup>, **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.*
- 30) **Corwin LA**, Harsh J, Ramsey M<sup>\*</sup>, Woolner E<sup>\*\*</sup>, Ellis S<sup>\*\*</sup>, Gustafson N<sup>\*\*</sup> (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.*
- 29) Fried ER<sup>\*</sup>, Martin A, **Corwin LA**. 2019. Connecting science to society in an undergraduate evolution course. *Society for the Advancement of Biology Education Research annual conference 2019, Poster, Minneapolis, MN.*
- 28) Henry MA<sup>+</sup>, Shorter S<sup>+</sup>, Charkoudian LK, Heemstra JM, **Corwin LA**. (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, Poster, Minneapolis, MN.*

- 27) Rowland AA<sup>+</sup>, Franks K<sup>\*\*</sup>, Eddy SL, **Corwin LA.** (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, Poster, Minneapolis, MN.*
- 26) Eddy S ‡, **Corwin LA**, Charbonnier JF<sup>+</sup>, Knekta E<sup>+</sup>. (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.*
- 25) Schinske J ‡, **Corwin LA**, Ramsey M<sup>\*</sup>, Fried E<sup>\*</sup>, 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.*
- 24) Henry MA<sup>+</sup>, Shorter S<sup>+</sup>, 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 Conference on Undergraduate Biology Education Research, Poster, Lewiston, ME.*
- 23) Henry MA<sup>‡</sup>, Shorter S<sup>+</sup>, 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 Young Investigators Meeting, Lewiston, ME.*
- 22) **Corwin LA**, Harsh J, Ellis S<sup>\*\*</sup>, Gustafson N<sup>\*\*</sup>, Woolner E<sup>\*\*</sup>. (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.*
- 21) Aikens M, **Corwin L**, Kiser S, LoRe S, and Miller J. (2018) Teaching quantitative biology skills in introductory biology: Community college faculty interviews. *National Association of Biology Teachers annual conference 2018, Poster, San Diego, CA.*
- 20) **Corwin LA**, Ellis S<sup>\*\*</sup>, Gustafson N<sup>\*\*</sup>, Woolner E<sup>\*\*</sup>, 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.*
- 19) Fried E<sup>\*</sup>, Martin A, Esler A<sup>\*\*</sup>, Varni M<sup>\*\*</sup>, **Corwin LA.** (2018) Practicing divergent thinking in an undergraduate evolution course through biomimicry. *Society for the Advancement of Biology Education Research annual conference 2018, Poster, Minneapolis, MN.*
- 18) Rowland AA<sup>+</sup>, Franks KE<sup>\*\*</sup>, Shi J, Eddy SL, **Corwin LA.** (2018) A Qualitative investigation of students' biology interest & career goals related to persistence in STEM

career pathways. *Society for the Advancement of Biology Education Research annual conference 2018, Poster, Minneapolis, MN.*

- 17) Franks KE\*\*, Rowland AA<sup>+</sup>, Eddy SL, **Corwin LA**. (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. Poster, San Diego, CA.*
- 16) Rowland AA<sup>+</sup>, Franks KE\*\*, Eddy SL, **Corwin LA**. (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. Poster, San Diego, CA.*
- 15) Schinske J, **Corwin LA**, Nenortas A, McFarland J. (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, Poster, Irvine, CA.*
- 14) **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.*
- 13) Ciancanelli B, Harvey P, **Corwin LA**, Knight J, Chasteen S. (2017) TRESTLE Faculty Scholars Groups: Spreading Knowledge and Generating Community. *STEM Education Symposium, CU Boulder, Poster, Boulder, CO.*
- 12) **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.*
- 11) **Corwin LA**, Morton T, Demetriou C, Panter A. (2017) Why STEM transfer students leave, A preliminary qualitative investigation. *Gordon Research Conference on Undergraduate Biology Education Research, Poster, Easton, MA.*
- 10) **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.*
- 9) Morton TR, **Corwin LA**, Demetriou C, Panter A. (2017) The choice to remain in STEM: A characterization of transfer students' experiences. *National Association for Research in Science Teaching Annual International Conference. Poster, San Antonio, TX.*
- 8) Gin L\*\*, Steinwand B, Bruno J. **Corwin LA**, (2017) A fishy CURE, examining student outcomes in a CURE on Seafood Mislabeling. *Society for the Advancement of Biology Education Research Western Regional Conference 2017, Poster, Irvine CA.*

- 7) **Corwin LA**, Runyon C, Ghanem E, Sandy M, Clark G, 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.*
- 6) **Corwin LA**, Runyon C, Ghanem E, Sandy M, Clark G, 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 (since 2014)***

- 5) **Corwin LA**, Runyon C, Robinson A, Merkel S, Dolan EL, (2015) Identifying features of effectiveness: Development and validation of the Laboratory Course Assessment Survey. *Gordon Research Conference on Undergraduate Biology Education Research, Poster, Lewiston, ME.*
- 4) **Auchincloss LC**, Robinson A, Merkel S, Dolan EL, (2014) New dimensions in lab course assessment. *National Biology Teachers Association annual conference 2014, Poster, Cleveland, OH.*
- 3) **Auchincloss LC**, Robinson A, Merkel S, Dolan EL, (2014) NextGen CURE assessment. *Society for the Advancement of Biology Education Research annual conference 2014, Poster, Minneapolis, MN.*
- 2) **Auchincloss LC**, Robinson A, Merkel S, Dolan EL. (2014) Is the treatment a CURE? Next steps for CURE assessment. *Association for Biology Laboratory Education annual conference 2014, Poster, Eugene, OR.*
- 1) **Auchincloss LC**, Graham MJ, Dolan EL (2014) Which path will you take? Modeling CUREs to develop a research agenda. *CUREnet annual conference 2014, Poster, Cold Spring Harbor, NY.*

## **Teaching and Mentoring**

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

### **Awards**

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Spring 2023	Outstanding Faculty Mentor Award Winner, CU Boulder
Spring 2021	Marinus Smith Award for Mentoring Winner, CU Boulder

### **Course development and teaching**

***Since arriving at CU***

### **Research University Instruction**

***Curriculum Design for Undergraduate Biology EBIO 5460; University of Colorado, Fall 2023***

Co-designed and co-instructed a 3 credit lecture course with postdoc Sandhya Krishana, 11 students, Topics include how to teach using active learning, how to design a lesson, how to plan a course, and how to write a syllabus and statement of teaching philosophy.

***Introduction to Statistics and Quantitative Thinking in Biology EBIO 1010; University of Colorado, Spring 2017-19 and 2021-23.***

Co-designed and co-instructed the 3-credit lecture course with Andrew Martin, 35-59 students per section; Topics include quantitative reasoning, making claims, performing descriptive and comparative statistics.

***Introduction to Ecology and Evolutionary Biology Research EBIO 1250; University of Colorado, Fall 2020-21.***

Designed and instructed the 3-credit lecture for this course-based undergraduate research experience (CURE), 23-25 students per section. Topics include introductory ecology, evolution, genetics, and biogeochemical cycling. Led CURE lab design and assisted with instruction.

***Principles of Ecology EBIO 2040; University of Colorado, Fall 2016-17 and 2022***

Designed and instructed a 3-credit lecture course; 96-130 students per section; Topics included ecophysiology, population ecology, community ecology, ecosystems ecology, and global cycles among others.

***Teaching Biology EBIO 3010; University of Colorado, Spring 2022-23, Fall 2022***

Designed and instructed a 1-credit course on teaching and learning in biology; 6-19 students per section; Topics included asking questions as an LA to support student learning and biology pedagogy, active learning techniques, and pedagogical troubleshooting.

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

Designed and instructed a 2-credit graduate-level course, 8 students, Topics include curriculum design and instruction of research-based undergraduate courses.

***Quick Reference Guide to CU Boulder Teaching***

<b>Course</b>	<b>Credits</b>	<b>Enrollment</b>	<b>Instructor FCQ</b>	<b>Course FCQ</b>
EBIO 1010 – S2023	3	50	4.8 /5	4.7 /5
EBIO 1010 – S2022	3	39	4.67 /5*	4.44 /5
EBIO 1010 – S2021	3	59	4.66 /5	4.37 /5
EBIO 1010 – S2019	3	38	5.2 /6	5.7 /6
EBIO 1010 – S2018	3	30	5 /6	5.6 /6
EBIO 1010 – S2017	3	38	4.9 /6	5.5 /6
EBIO 1250 – F2021	3	23	4.6 /5	4.61 /5
EBIO 1250 – F2020	3	25	4.67 /5	4.39 /5
EBIO 2040 – F2017	3	128	4.9 /6	4.14 /6
EBIO 2040 – F2016	3	130	4.9 /6	4.6 /6
EBIO 3010 – S2022	1	6	4.93 /5	5 /5
EBIO 3010 – S2023	1	8	5 /5	5 /5

EBIO 5460 – F2023	3	11(graduate)	4.9 /5	4.9 /5
EBIO 6100 – S2019	2	8 (graduate)	6 /6	6 /6

\*out of 5 or 6 depends on year and evaluation questions employed at CU Boulder

### **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 a field measurements course; 23 students. Topics include experimental design, the scientific process, hypothesis testing and descriptive statistics.

### **Archived publicly available curricula**

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*Curriculum Development for Undergraduate Biology*

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

*Design and Instruction of Course Based Undergraduate Research Experiences EBIO 6100*

*Introduction to Ecology and Evolutionary Biology Research EBIO 1250*

### **Mentoring in teaching and pedagogy**

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*Mentoring in Course Design and Instruction, CU Boulder*

Mentored Postdoctoral Researcher Sandhya Krishnan in developing and co-teaching EBIO5460. Archived curricula in publicly sharable format and shared with 10 other DBER instructors. - *Fall 2023*

Mentored Postdoctoral Researcher Miranda Musgrove while co-teaching EBIO 1010 and designing modules for this course. Published quantitative curricula from this work: Musgrove MC, Corwin LA, Martin A. (2021) *Making predictions with linear models: A murder mystery case study*. QUBES Educational Resources. Doi:10.25334/3BW4-YR61 - *Spring 2020*,



***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 laboratory sections of a new research-based introductory EBIO course. One student published her curricula (see Jager *Course Source* above)

***Mentoring in Case-Study Development, CU Boulder***

Met with three EBIO graduate students on a weekly basis to develop case-studies to be used in EBIO 2040, Principles of Ecology. *Fall 2017*

Worked with 3 EBIO graduate students over 2 years to develop and publish case-studies used in EBIO 2040, Principles of Ecology. 2021-2023 (see Keyes and Polutchko *Course Source* above)

***Learning Assistant (LA) Pedagogical Mentoring and Training, CU Boulder***

Weekly meetings and training in pedagogy associated with various courses

- EBIO 1010: S2021 – 4 LAs, S2019 – 7 LAs, S2018 – 2 LAs, S2017 – 2 LAs
- EBIO 1250: F2020 – 2 LAs, F2021 – 2 LAs
- EBIO 2040: F2017 – 4 LAs

**Mentoring in biology education research**

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***Postdoctoral research associates***

- Sriparna Saha, Oct 2022 - Current
- Deidre Jaeger, May 2022 - Current
- Sandhya Krishnan, August 2021 - Current
- Miranda Chen, August 2020 – July 2022,
  - Current: Researcher and Evaluator with Goshen Education Consulting
- Meredith Henry, July 2018 – August 2021,
  - Current: Lecturer of Psychology, Georgia State University
- Ashley Rowland, July 2017-July 2019,
  - Current: Director of Content for Codon Learning
- Shayla Shorter, July 2018 – July 2019,
  - Current: Program Director, Lupus Foundation of America

***EBIO graduate students in my lab***

- Manuela Mejia, PhD, August 2023 - Current
- Micaela Seaver, PhD, May 2022 - Current
- Amy Dunbar-Wallis, PhD, August 2020 - Current
- Irfanul Alam, PhD, August 2018 – Current
- Erin Fried, MA, August 2017- Fall 2019;
  - Current: Communication & Education Project Manager, Boulder Watershed Collective

***EBIO graduate students completing chapters/publications in biology education***

- Gray Prosser Hidalgo, PhD, August 2023 – Current
- Annie Meeder, PhD, August 2023 – Current
- Zach Schwartz, PhD, August 2022 – Current

- Sam Ahler, PhD, August 2021 – Current
- Stephanie Polutchko, PhD, August 2020 - Current
- Aislyn Keyes, PhD, August 2020 – 2022
- Adam Solon, PhD, August 2016 – 2021
  - Current: Postdoctoral Research Associate with Steve Schmidt, CU Boulder
- Chiara Forrester, PhD, August 2016- 2021;
  - Current: Forest Program and Education Manager, Left Hand Watershed Center
- Deidre Jaeger, PhD, August 2016 – 2022;
  - Current: Postdoctoral Research Associate for the REACH Lab, CU Boulder

### ***Undergraduates***

- 28 Undergraduates have participated in research in my lab
  - 7 presented at national conferences
  - 4 completed senior theses (with an additional 1 in process)
  - 8 addition students are authors on publications (1 is lead author)
  - 5 received student UROP grants
  - 2 received the GRFP

### **Personal professional development in teaching**

6/22	American Physiological Society Institute on Teaching and Learning
8/21	CU Boulder Teaching and Learning Center: JEDI Workshop
7/20	EBIO Online Teaching Workshop
2/20	CU Boulder Workshop on Student Mental Health
6/18	CURE institute, CU Denver
1/18	Participant in an Ethics/RCR two-day faculty working group to discuss and learn about ethical conduct of research, UT El Paso
8/16 – 12/16	Faculty Teaching Excellence Program Early Career Faculty Participant
8/16 – 12/16	EBIO Faculty Learning Community: Considering students' identities when teaching evolution

## **Service**

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

### **University and Departmental Service**

#### **Professional development provided to the Department and University**

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|------|---|
| 4/23 | <b>Workshop Facilitator</b> <i>Failing (in order) to succeed: Exploring how challenge and failure in course-based undergraduate research can become a learning opportunity</i> , Center for Teaching and Learning, CU Boulder |
|------|---|

- 8/21 **Workshop Facilitator** *Productive Failure in STEM Classrooms*, Center for Teaching and Learning, CU Boulder
- 4/19 **Workshop Facilitator** *Exploring Course Based Undergraduate Research Experiences (CUREs) ShinDiG*, TRESTLE Program, CU Boulder
- 9/17 **Workshop Facilitator** *Adding Course Structure to Make Our Classrooms More Inclusive*, Graduate Teaching Program, CU Boulder
- 8/17-12/17 **Faculty Learning Community Facilitator** *Exploring Course Based Undergraduate Research Experiences (CUREs) TRESTLE*, Faculty Learning Community, CU Boulder

### Other departmental service

- Fall 2022 - Current **EBIO Committee Chair** Quality Teaching Initiative
- Fall 2023 **EBIO Committee** Sconiers Reappointment
- Spring 2021 **EBIO Committee** Instructor Hiring
- Fall 2021 **EBIO Substitute Teaching** due to COVID (46 hrs)
- Fall 2021 – Current **EBIO Committee** Teaching Evaluation
- Fall 2020 – Spring 2023 **EBIO Committee** Undergraduate Education
- Spring 2019 **EBIO Committee** Merit Review
- Fall 2017 – Spring 2018 **EBIO Committee** Executive
- Spring 2016 - Current **EBIO Committee** Outcomes assessment

### Service activities external to CU Boulder

#### Professional development provided to the STEM Education Community

##### *Since arriving at CU*

**Leader and Co-Founder of Failure as a Part of Learning; A Mindset Education Network – FLAMENet.** FLAMENet is a national network that supports faculty in development of pedagogical practices and innovations that support students’ resilience. Associated activities:

- 2018 – current **Meeting organizer** Bi-weekly community hours, *Online*
- 2018 – current **Consulting** Consultation with members as needed (2-3x/mo), *Online*
- 6/22 **Workshop Leader** *Failing (in order) to Succeed: Helping STEM students to approach challenges, cope with failures, and develop scientific resilience*, *Invited Workshop. American Physiological Society: Institute on Teaching and Learning, Madison, WI.*
- 5/22 **Annual Retreat Facilitator** 2-day professional development retreat to help faculty plan and achieve systematic change at their institution, *Emory University, Atlanta, GA*
- 5/21 **Annual Retreat Facilitator** 2-day professional development retreat to help faculty to plan and institute interventions on intrapersonal student outcomes, *Emory University, Atlanta, GA*
- 3/20 **Mini-grant reviewer** Solicited and reviewed applications from network participants (10 groups) for mini-grants to fund research ideas. *Online*

- 5/19 **Annual Retreat Facilitator** 2-day professional development retreat to help faculty to plan and institute interventions on intrapersonal student outcomes, 40 faculty, *Emory University, Atlanta, GA*
- 5/19 **Network Launch Facilitator** Launched network and gathered 20 faculty to plan and define network activities, *Emory University, Atlanta, GA*

**Leader and Co-Founder Community College Biology Instructor Network to Support Inquiry into Teaching and Education Scholarship – CC Bio INSITES** CC Bio INSITES is a national network that supports community college faculty in efforts to plan, conduct, disseminate, and publish biology education research. Associated activities:

- 2018 – current **Consulting** Consultation with members as needed (2-3x/mo), *Online*
- 5/23 **Annual Retreat Facilitator** 3-day retreat, 50 instructors on the present, past and future of Biology Education Research and striving toward a model for CC faculty leadership. *HHMI, Chevy Chase, MD.*
- 5/22 **Annual Retreat Facilitator** 1/2-day virtual workshop to consider the future of the network. *Online*
- 8/21-9/21, **Workshop Series Organizer** Bi-weekly series on how to find a journal and submit biology education research for publication. *Online*
- 5/21 – 7/21 **Workshop Series Organizer** Bi-weekly series on how to conduct statistical analyses and survey validation. *Online*
- 5/21 **Annual Retreat Facilitator** 1-day virtual workshop to consider past successes and define future goals. *Online*
- 3/21- 5/21 **Workshop Series Facilitator** Bi-weekly series on how to write and submit abstracts to professional conferences. *Online*
- 6/20 **Annual Retreat Facilitator** 2-day retreat, 50 instructors on how to present biology education research at professional conferences. *Online*
- 6/19 **Annual Retreat Facilitator** 3-day retreat, 50 instructors on how to design qualitative and quantitative studies *HHMI, Chevy Chase, MD.*
- 1/19 **Workshop Facilitator**, Gaining Buy-In and Recognition for BER at your CC - *Invited Workshop, SABERwest Conference, Irvine CA.*
- 5/18, **Network Launch Retreat Facilitator:** 3-day retreat, 50 instructors on how to define research questions and gather preliminary data for biology education research at community colleges. *HHMI, Chevy Chase, MD.*

**Other professional development**

- 11/23 **Workshop Facilitator** – *Invited Workshop, An introduction to CUREs at Community Colleges, Essential Design Features and Starting to Plan, CURE development working group PIMA Community College, Virtual.*
- 10/21 **Workshop Facilitator** – *Invited Workshop, Scientific Civic Engagement with the Boulder Apple Tree Project, Life Discovery Conference, Estes Park, CO*
- 7/17 **Retreat Facilitator** – *Invited Retreat, First Steps in Planning a CURE course – 2-day retreat Funded by the Keck Foundation, La Verne University, CA, 6/17*

*Prior to arriving at CU*

- 10/15            **Retreat Facilitator** –*Building Capacity for Community College Biology Education Research - NSF-IUSE Meeting, Denver CO, 10/15*
- 6/15            **Workshop Facilitator** - *National Academies Special Topics Summer Institute on Course-based Undergraduate Research Experiences (CUREs), University of Texas at Austin, 6/15*
- 6/14            **Workshop Facilitator** – *Invited Workshop, Evaluating Academic Programs: A Models to Measures Approach, Juniata College, 6/14*

### **Other service provided to the STEM Education Community**

#### *Since arriving at CU*

- 2023            **Full-Course Publication Template Development, Course Source**
- 2021-current   **Monitoring Editor, Life Sciences Education**
- 2021-current   **Advisory Board**, NSF Vision and Change Project: Seeing the Paths to Change: Evaluating Vision & Change Using a Pathway Modeling Approach (PI Mark Graham)
- 2021-current   **Advisory board:** ALRISE (Accelerate Latinx Representation in STEM Education with Institutional Intentionality and Capacity Building for Experiential Learning) NSF INCLUDES Alliance. (PI Caroline VanIngen-Dunn)
- 2020-current   **Advisory board:** Enhancing STEM Student Success by Connecting Course-based Undergraduate Research Experiences to the Local Ecology and Community (NSF IUSE-HIS, PI Benita Brink)
- 2020            **NSF Proposal Reviewer (2 programs)**
- 2018-20        **Advisory board:** CAPER: Community College Anatomy and Physiology Education Research Group (PI Murray Jensen)
- 2018-20        **Working Group Member** CURE Ethics and RCR
- 2018            **NSF Proposal Reviewer (1 programs)**
- 2017-19        **Working Group Member** CC Quantitative Biology Education
- Ongoing        **Reviewer:** *CBE-Life Sciences Education, PLOS One, International Journal of STEM Education, Journal of Chemical Education, Journal of Microbiology and Biology Education, Frontiers in Education, Studies in Higher Education*

### **Community service**

- Summer 23     OSMP Historic Apple Orchard Site Establishment and Orchard Maintenance
- 12/21           Community Talk: *Introducing the Boulder Apple Tree Project*, Annual Community Fruit Rescue Celebration
- 9/2018-23      Annual Apple Blitz – gathering community members to learn about and measure the health of local historic apple trees and maintain the community orchard
- 12/2018-23    Annual Boulder Apple Tree Symposium – for community members and students to learn about current research on apple trees
- 3/2020-23      Annual Tree Grafting Workshop – gathering to teach apple tree grafting

### **Professional memberships**

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