

# Sara E. Brownell

Professor, School of Life Sciences, Arizona State University

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## Biographical summary:

Sara Brownell is a biology education researcher whose research focuses on making undergraduate science learning environments more inclusive. Trained as a Ph.D. neuroscientist, she transitioned to discipline-based education research and is an expert on course-based undergraduate research experiences and making undergraduate science learning experiences, specifically active learning courses and undergraduate research experiences, more inclusive. She has published 118 total publications (86 as first or senior author, h-index= 47), has been PI or Co-PI on \$5,065,134 in external awards, has given 136 invited talks on her research, and has been awarded four national research awards related to teaching/science education. At Arizona State University, Brownell has received six teaching/mentoring awards and directs the Research for Inclusive STEM Education Center. Her research in science education has been internationally recognized and featured in *Science Magazine*, as well as in numerous news outlets, including the *NY Times*, *CNN*, and *Scientific American*.

## Education

2011	Ph.D. in Biology	Stanford University, Stanford CA
2011	M.A. in Education	Stanford University, Stanford CA
2007	M.S. in Biology	The Scripps Research Institute, La Jolla CA
2004	B.S. in Biology	Cornell University, Ithaca NY

## Appointments:

2021-present	<i>Professor in the School of Life Sciences, Arizona State University, Tempe AZ</i> Research focus: Undergraduate biology education Affiliated faculty: Center for Biology and Society
2020-present	<i>Director of the Research for Inclusive STEM Education (RISE) Center, Arizona State University</i>
2018- 2021	<i>Associate Professor in the School of Life Sciences, Arizona State University</i> Research focus: Undergraduate biology education Affiliated faculty: Center for Biology and Society
2019	<i>Visiting Scholar in Evolution Education, University of Münster, Münster Germany</i> Evolution Think Tank Fellow, Münster Graduate School of Evolution
2015	<i>Visiting Scholar in Biology Education, University of Texas at Austin, Austin TX</i> Texas Institute for Discovery Education in Science in the College of Natural Sciences
2014-2018	<i>Assistant Professor in the School of Life Sciences, Arizona State University</i> Research focus: Undergraduate biology education Affiliated faculty: Center for Biology and Society, Center for Evolution and Medicine

- 2013                    *Postdoctoral Scholar in Biology Education*, University of Washington, Seattle WA  
 Concentration: Undergraduate biology education  
 Advisors: Dr. Scott Freeman, Dr. Alison Crowe, Dr. Mary Pat Wenderoth
- 2012                    *Postdoctoral Scholar in Science Education*, San Francisco State, San Francisco CA  
 Concentration: Undergraduate biology education  
 Advisor: Dr. Kimberly Tanner
- 2011-2012            *Lecturer in Biology*, Stanford University, Stanford CA

### **Honors and Awards:**

- Awarded ASU's Founders Day Teaching Achievement Award, 2023  
 One university-wide faculty award given annually for teaching that creates impactful, transformative narratives regarding issues facing the world and expands the minds of students to help discover innovative solutions
- Elected as an American Association for the Advancement in Science (AAAS) Fellow, 2022  
 One of the most distinguished lifetime honors in the scientific community, elected within Section X: Societal impacts of science and engineering
- Awarded the John A. Moore Lectureship Award to give the closing plenary lecture on science education at the Society for Integrative and Comparative Biology (SICB) meeting, 2022  
 One lectureship awarded annually to a nationally-recognized speaker on science education
- Awarded the Solan Equity and Inclusion in STEM introductory Courses (SEISMIC) collaboration leadership award, 2022  
 Award given for being part of the 10-person team to launch the SEISMIC Collaboration
- Awarded National Association of Biology Teachers Evolution Education Award, 2021  
 One national award given annually to a scholar in evolution education based on research, co-awarded with my former PhD student Elizabeth Barnes
- Awarded ASU Committee for Campus Inclusion Catalyst Award, 2020  
 Two university-wide faculty awards given annually for efforts on diversity and inclusion
- Awarded LGBTQ+ Educator of the Year by the National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP), 2020  
 One national award given annually
- Awarded National Association of Biology Teachers Biology Education Research Award, 2018  
 One national award given annually to a scholar in biology education research based on research
- Invited participant for Arizona State University Leadership Academy, 2018  
 Nominated by department head to participate in a university-wide leadership program
- Awarded American Physiological Society's Education Research Recognition Award, 2018, 2021  
 One national award given annually for submitted research at the national meeting
- Awarded ASU's highest college-level teaching award, Zebulon Pearce teaching award, 2017  
 One college-wide award given annually for faculty teaching in the natural sciences
- Awarded ASU's School of Life Sciences Excellence in Teaching award, 2017  
 One department-wide award given annually for teaching
- Awarded ASU's Faculty Women's Association Award for Outstanding Faculty Mentor, 2017  
 One of six awards given annually across the university for mentoring
- Student-selected based on teaching as honorary member of ASU Golden Key Honor Society, 2015  
 Nominated by students for this recognition
- Awarded ASU's Centennial Teaching Award, university-wide teaching award, 2015  
 Nominated by over 30 students for this university-wide award, three are given annually
- Fellow for ASU's Lincoln Center for Applied Ethics, 2015  
 Selected as a research fellow for this center

- Awarded ASU's "Most Influential Faculty" by a Student-Athlete, Sai Tummala, 2015  
Nominated by ASU men's basketball athlete
- Finalist for Maryellen Weimer Scholarly Work on Teaching and Learning Award, 2014  
One of three finalists for national award
- Awarded Stanford Biology Student Services Award, Departmental Service Award, 2012  
One award given annually to a staff member
- Awarded Alzheimer's Drug Discovery Foundation Outstanding Young Investigator Award, 2011  
Award funded conference and travel
- Awarded Walter J. Gores Teaching Award, Stanford University's highest teaching award, 2010  
Two university-wide awards given annually to graduate students
- Awarded Stanford School of Medicine Award for Outstanding Teaching Assistant, 2009  
One university-wide award given annually
- Awarded Excellence in Teaching Award, Stanford Department of Biology, 2008  
Many awards given annually to graduate students based on high teaching evaluations
- Stanford Graduate Fellowship, 2008-2011  
Awarded most prestigious internal fellowship at Stanford, full tuition/stipend support
- National Science Foundation Graduate Fellowship, 2005-2008  
Awarded national fellowship, full tuition/stipend support
- The Scripps Research Institute Bagel Fellowship, 2004-2005  
Awarded one-year internal fellowship, full tuition/stipend support

### **Research Experience:**

- *Faculty Research, Arizona State University, 2014-present*  
Research interests focus on making undergraduate biology education more inclusive, particularly for women, religious students, LGBTQ+ students, students with disabilities, and community college transfer students.
- *Postdoctoral Research, University of Washington, 2013*  
Worked on two projects: (1) to establish departmental learning goals and articulate the core concepts of Vision and Change for a general biology major and (2) explore student conceptions of experimental design.
- *Postdoctoral Research, San Francisco State University, 2012*  
Worked on the role of faculty professional identity in faculty pedagogical change.
- *Ph.D. Thesis Research, Stanford University, 2007-2011*  
Worked in Dr. Lawrence Steinman's molecular and cellular neuroimmunology laboratory focused on the therapeutic potential of small heat shock proteins in mouse models of multiple sclerosis and stroke.
- *M.A. Thesis Research, School of Education, Stanford University, 2008-2011*  
Under the mentorship of Dr. Rich Shavelson, evaluated the comparison of traditional biology lab courses to a set of newly designed course-based undergraduate research experiences embedded into introductory biology lab courses.
- *M.S. Thesis Research, The Scripps Research Institute, 2005-2007*  
Worked in Dr. Tamas Bartfai's molecular neuroscience laboratory focused on cytokines, temperature regulation, and obesity.

### **Fellowships and Grants:**

#### **Funded national awards**

##### *In progress:*

- *National Science Foundation Improving Undergraduate STEM Education (IUSE) Award*  
Research at your fingertips: Developing a bioinformatics course-based undergraduate research experience for online students. \$299,997, funded March 2021 as a Co-PI (PI: Wilson M, Co-PI: Cooper K)

- *National Science Foundation Improving Undergraduate STEM Education (IUSE) Award*  
Exploring the Effect of Shared Identities Between Instructors and Students in the Undergraduate Biology Classroom. \$300,000, funded March 2021 as a Co-PI (ends 2024; PI: Cooper K)
- *National Science Foundation RCN-UBE Incubator Award*  
Developing a network of collaborators of psychiatrists, academic support specialists, and biology education researchers to create more inclusive active learning classrooms for student anxiety. \$74,319 funded August 2020 as a Co-PI (ends 2023; PI: Cooper K, Co-PI: Nesse R, Co-PI: Schuessler B).
- *National Science Foundation (NSF) Improving Undergraduate STEM Education (IUSE) Award*  
A large-scale national systematic exploration of the impact of culturally competent evolution education. \$405,409 funded August 2018 as a PI (ends 2023, Co-PI: Barnes). Recognition: 100%.
- *Howard Hughes Medical Institute (HHMI) Inclusive Excellence Award*  
Teaching transformed: Using education technology to create a culture of inclusive excellence. \$1,000,000 funded May 2018 as a Co-PI (ends 2023; PI: Collins J, Co-PIs: Anbar A, LePore P). Recognition: 33%.
- *National Science Foundation (NSF) Scholarships in Science, Technology, Engineering, and Math (S-STEM) Award*  
Making the LEAP from transfer student to research scientist. Collaborative grant aimed at improving transfer student success in undergraduate research in science. \$999,965 total funded January 2017 as a PI (ends 2023; Co-PIs: Zaniwski A, Harnett H). Recognition: 60%.
- *National Science Foundation (NSF) Research Coordination Network Undergraduate Biology Education (RCN UBE)*  
Course-based Undergraduate Research Network 2: developing a national network of individuals interested in integrating teaching and research. \$499,925 total funded August 2017 as a Co-PI (PI: Dolan E at University of Georgia). Recognition: 100% for ASU's portion of \$31,169.

Completed:

- *National Science Foundation (NSF) INCLUDES Planning Award, 2020-2022*  
Developing a shared vision for classrooms that engage persons with disabilities in science and engineering. \$100,000 funded April 2020 as a Co-PI (PI: Parrish K). Recognition: 40%.
- *National Science Foundation RCN-UBE Incubator Award, 2020-2022*  
Developing a cross-disciplinary network of collaborators to improve evolution acceptance instruments. \$73,269 funded August 2020 as a PI (Co-PI: Barnes M, Co-PI: Nehm R, Co-PI: Wiles J, Co-PI: Jensen J).
- *National Science Foundation (NSF) Improving Undergraduate STEM Education (IUSE) Award, 2017-2022*  
Exploring bias in undergraduate biology exams. Collaborative grant exploring how instructors write exam questions and whether they are biased towards any groups. \$241,036 total funded December 2017 as a PI (Co-PI: Wright C, Co-PI: Li). Recognition: 50%. Resulted in two publications.
- *National Science Foundation (NSF) Improving Undergraduate STEM Education (IUSE) Award, 2017-2020*  
Establishing evidence-based curricula for evolutionary medicine. \$292,767 total funded September 2017 as a PI (Co-PIs: Nesse R, Grunspan D). Recognition: 50%. Resulted in 3 publications.

- *National Science Foundation (NSF) Improving Undergraduate STEM Education (IUSE) Award, 2015-2018*  
Learning from dialog versus monolog videos. Collaborative grant exploring the benefit of students watching videos outside of class with either an instructor alone or watching videos of instructor tutoring a student. \$249,995 total funded September 2015 as a Co-PI (PI: Chi M). Recognition: 20%. Resulted in 2 publications.
- *National Science Foundation (NSF) Transforming Undergraduate Education in STEM (TUES) II Award, 2013-2019*  
Navigating from Vision to Change with BioMaps. Collaborative grant on the development of programmatic assessments aligned with the core concepts of Vision and Change. \$528,452 total funded September 2013 as a Co-PI (PI: Smith M, Knight J, Crowe A); \$110,810 as subcontract to ASU as a PI. Recognition at ASU: 100%. Resulted in 5 publications.
- *CUREnet national grant for working groups, 2013-2014*  
Collaborative mini-grant funded through a NSF RCN-UBE grant to explore faculty involvement and interest in course-based research experiences. \$3,900 total funded December 2013 as a PI. Recognition: 100%. Resulted in 3 publications.
- *National Science Foundation (NSF) Graduate Research Fellowship, 2005-2008*  
Awarded \$90,000 total stipend, plus tuition support.

### **Funded internal institutional awards**

- *ASU College of Liberal Arts and Sciences Online Undergraduate Research Scholars Grant*  
Funded by the College of Liberal Arts and Sciences to help support a genomics course-based undergraduate research experience for online students as a Co-PI. \$10,000. Funded February 2022.
- *ASU School of Life Sciences Bottom-Up Seminar Series Funding*  
Funded by the School of Life Sciences to host the Evidence-based Teaching in STEM seminar series. \$5700. Funded May 2016.
- *ASU Center for Evolution and Medicine Research Grant*  
Funded by the Center for Evolution and Medicine to research undergraduate biology students' conceptions of acceptance of evolution. \$1600. Funded April 2016.
- *ASU Lincoln Center for Applied Ethics Proposal Funding*  
Funded by the Lincoln Center to explore ethics surrounding undergraduate research experiences. \$7,000. Funded July 2015.
- *ASU School of Life Sciences Bottom-Up Seminar Series Funding*  
Funded by the School of Life Sciences to develop an Evidence-based Teaching in STEM seminar series. \$6,300. Funded May 2015.
- *ASU Centennial Teaching Award Funding for Teaching*  
Project stipend to improve the quality of instruction at ASU specifically in active learning classrooms. \$5,000. Funded April 2015.
- *Stanford Graduate Fellowship in Science and Engineering, 2008-2011*  
Most prestigious internal fellowship at Stanford. \$96,600 total stipend, plus tuition support.
- *Stanford University Vice Provost of Undergrad Education Curriculum Development Grant*  
Funded to assess the Department of Biology Honors Program. \$3,500. Funded Nov 2011.
- *Stanford University Center for Teaching and Learning TA training Grant*  
Funded to support Biology Laboratory TA Training program. \$2,500. Funded June 2011.
- *Stanford University Vice Provost of Undergrad Education Curriculum Development Grant*  
Funded to support the course Imm185 "Brain and Immune System." \$3,000. Funded Nov 2008.
- *Stanford University Center for Teaching and Learning TA training Grant*  
Authored grant to support Biology Advisors TA Training program. \$2,500. Funded June 2008.

## Publications

*The standards of the biology education research field are that the senior lead author is the last author of the publication and the first author is the trainee or person who conducted the majority of the research. Trainees are underlined: + denotes postdoctoral scholar, # denotes graduate student, and ^ denotes undergraduate student. Italics indicate when I am corresponding author and \* indicates co-first author. I have 118 total publications (115 peer-reviewed articles, 3 editor-reviewed book chapters or articles, and 1 peer-reviewed curriculum article). According to google scholar, my h-index is 47, i10 index is 87, and I have 7909 total citations.*

## Peer Reviewed Research Articles

### *In press*

115. Supriya K<sup>+</sup>, Bang C, Ebie J, Pagliarulo C, Tucker D, Villegas K<sup>^</sup>, Wright C, **Brownell SE**. Optional exam retakes reduce anxiety but may exacerbate score disparities between students with different social identities. Accepted with minor revisions at CBE Life Sciences Education.

114. Soneral P, **Brownell SE**, Barnes ME. Analysis of religious bias among Christian students in science. Journal for the Scientific Study of Religion. In press.

113. Cooper KM, Eddy SL, **Brownell SE**. Research anxiety predicts undergraduates' intentions to pursue scientific research careers. CBE Life Sciences Education. In press.

### *Published*

#### 2022

112. Abraham AE<sup>^</sup>, Busch CA<sup>#</sup>, **Brownell SE**, Cooper KM. Should I write about mental health on my med school app? Examining medical school admissions committee members' biases regarding mental health conditions. Advances in Physiology Education. September 2022.  
<https://journals.physiology.org/doi/full/10.1152/advan.00094.2022>

#### **Commentary**

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2022/10/should-premedical-students-discuss.html>

Admissions Helpers <https://admissionshelpers.com/should-premeds-write-about-mental-health-issues-on-medical-school-applications/>

111. Bowen C, Summersill A, Jensen J, **Brownell SE**<sup>\*</sup>, Barnes ME<sup>\*</sup>. A Comparison of Online and In-Person Evolution Instruction That Includes Religious Cultural Competence. Journal of Microbiology and Biology Education. August 2022. (\*These senior authors contributed equally.)  
<https://journals.asm.org/doi/full/10.1128/jmbe.00067-22>

110. Barnes ME<sup>+</sup>, Riley R, Bowen C, Cala J, **Brownell SE**. Community College Student Understanding and Perceptions of Evolution. CBE Life Sciences Education as part of the Community College Special Issue. June 2022. <https://www.lifescied.org/doi/full/10.1187/cbe.21-09-0229>

Featured in Online with Life Sciences Education (LSE) webinar

109. **Busch C<sup>#</sup>**, **Supriya K<sup>+</sup>**, Cooper KM\*, **Brownell SE\***. Unveiling concealable stigmatized identities in class: The impact of an instructor revealing her LGBTQ+ identity to students in a large-enrollment biology course. CBE Life Sciences Education. May 2022. (\*These senior authors contributed equally.) <https://www.lifescied.org/doi/full/10.1187/cbe.21-06-0162>

Featured on an ASU podcast Fusion on First <https://shows.acast.com/the-fuse/episodes/a-conversation-with-dr-sara-brownell>

#### **Commentary**

Society for Integrative and Comparative Biology blog post <https://www.newswise.com/articles/the-importance-of-being-earnest-engaging-with-student-teacher-identities-improves-classroom-experience>

ASU Now <https://news.asu.edu/20220601-what-happens-when-stem-instructor-reveals-lgbtq-identity-students>

108. **Gin LE<sup>#</sup>**, **Pais DA<sup>^</sup>**, Cooper KM\*, **Brownell SE\***. Students with disabilities in undergraduate research: Challenges and opportunities. CBE Life Sciences Education. May 2022. (\*These senior authors contributed equally.) <https://www.lifescied.org/doi/10.1187/cbe.21-07-0196>

Highlighted in Summer 2022 issue

#### **Commentary**

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2022/06/how-can-we-make-undergraduate-research.html>

107. **Gin LE<sup>#</sup>**, **Pais D<sup>^</sup>**, Parrish KD, **Brownell SE\***, Cooper KM\*. New online accommodations are not enough: The mismatch between student needs and supports given for students with disabilities during the COVID-19 pandemic. Journal of Microbiology and Biology Education. April 2022. (\*These senior authors contributed equally.) <https://journals.asm.org/doi/full/10.1128/jmbe.00280-21>

One of the editor's 5 picks in the themed issue on opportunities and challenges of online instruction

106. **Abraham AE<sup>^</sup>**, **Busch C<sup>#</sup>**, **Brownell SE\***, Cooper KM\*. Instructor perceptions of student incivility in the online undergraduate science classroom. Journal of Microbiology and Biology Education. April 2022. (\*These senior authors contributed equally.) <https://journals.asm.org/doi/full/10.1128/jmbe.00271-21>

105. **Edwards B<sup>^</sup>**, **Roberts J<sup>^</sup>**, Bowen C, **Brownell SE\***, Barnes ME\*. An exploration of how gender, political affiliation, or religious identity is associated with comfort and perceptions of controversial topics in bioethics. Advances in Physiology Education. March 2022. (\*These senior authors contributed equally.) <https://journals.physiology.org/doi/full/10.1152/advan.00008.2022>

#### **Commentary**

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2022/09/how-can-we-maximize-student-comfort.html>

104. Barnes ME, **Misheva T<sup>#</sup>**, **Supriya K<sup>+</sup>**, Rutledge M, **Brownell SE**. A Revised Measure of Acceptance of the Theory of Evolution: Introducing the MATE 2.0. CBE Life Sciences Education. January 2022. <https://www.lifescied.org/doi/full/10.1187/cbe.21-05-0127>

103. Youngblood J<sup>#</sup>, Webb E<sup>#</sup>, Gin LE<sup>#</sup>, van Leusen P, Henry J, VanderBrooks J, **Brownell SE**. At-home dissections improve the anatomical self-efficacy of undergraduate students in a fully online biology course. *Advances in Physiology Education*. January 2022.  
<https://journals.physiology.org/doi/abs/10.1152/advan.00139.2021>

2021

102. Segura-Totten M, Dewsbury B, Lo S, Bailey EG, Beater-Jones L, Bills RG, **Brownell SE** et al. Chronicling the journey of the Society for the Advancement in Biology Education Research (SABER) in its effort to become antiracist: from acknowledgement to action. *Frontiers in Education*. November 2021.  
<https://www.frontiersin.org/articles/10.3389/feduc.2021.780401/full>

101. Mohammed TF, Nadile EM<sup>#</sup>, Busch CA<sup>#</sup>, Brister D, **Brownell SE**, Claiborne CT, Edwards BA, Gazing Wolf J, Lunt C, Tran M, Vargas C, Walker KM, Warkina TD, Witt ML, Zheng Y, Cooper KM. Aspects of large-enrollment online college science courses that exacerbate and alleviate student anxiety. *CBE Life Sciences Education*. November 2021. <https://www.lifescied.org/doi/10.1187/cbe.21-05-0132>

100. Supriya K<sup>+</sup>, Mead C, Anbar A, Caulkins JL, Collins JP, Cooper KM, LePore PC, Lewis T, Pate A, Scott RA, and **Brownell SE**. Undergraduate biology students received higher grades during COVID-19 but perceived negative effects on learning. *Frontiers in Education*. October 2021.  
<https://www.frontiersin.org/articles/10.3389/feduc.2021.759624/full>

99. Yannier N, Hudson SE, Koedinger KR, Hirish-Pasek K, Golinkoff RM, Munakata Y, Doebel S, Schwartz DL, Deslauriers L, McCarty L, Callaghan K, Theobald EJ, Freeman S, Cooper KM, **Brownell SE**. Back to School with Active Learning: When Hands-On is Minds-On. *Science*. September 2021.  
<https://www.science.org/doi/10.1126/science.abj9957>

*Article is in the top 5% of all research outputs ever tracked by Altmetric*

#### **Commentary**

Morrison, N. (2021). Put Children In The Driving Seat Of Their Own Learning For Better Results. *Forbes*.

Silezar J. (2021). 'Active learning' helps students learn better by engaging them physically. *The Harvard Gazette*

Article was highlighted in over 28 news outlets including *U.S. News*, *Times Higher Education*, and *MSN*

98. Gin LE<sup>#</sup>, Clark CE<sup>^</sup>, Elliott DB<sup>^</sup>, Roderick TB<sup>^</sup>, Scott RA, Arellano D<sup>^</sup>, Ramirez D<sup>^</sup>, Vargas C<sup>^</sup>, Velarde K<sup>^</sup>, Aeschliman A<sup>^</sup>, Avalle ST<sup>^</sup>, Berkheimer J<sup>^</sup>, Campos R<sup>^</sup>, Gerbasi M<sup>^</sup>, Hughes S<sup>^</sup>, Roberts JA<sup>^</sup>, White QM<sup>^</sup>, Wittekind E<sup>^</sup>, Zheng Y, Cooper KM, **Brownell SE**. An exploration across institution types of undergraduate life sciences student decisions to stay in or leave an academic-year research experience. *CBE Life Sciences Education*. August 2021. <https://www.lifescied.org/doi/10.1187/cbe.21-04-0108>

#### **Commentary**

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2022/02/how-does-institution-type-impact.html>

97. Barnes ME<sup>+</sup>, Roberts J<sup>^</sup>, Maas S<sup>^</sup>, **Brownell SE**. Muslim Undergraduate Biology Students' Evolution Acceptance in the United States. *PLOS One*. August 2021.  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0255588>



96. Barnes ME<sup>+</sup>, Supriya K<sup>+</sup>, Zheng Y, Roberts J<sup>^</sup>, **Brownell SE**. A New Measure of Students' Perceived Conflict between Evolution and Religion (PCoRE) is a Stronger Predictor of Evolution Acceptance than Understanding or Religiosity. CBE Life Sciences Education. July 2021. <https://www.lifescied.org/doi/10.1187/cbe.21-02-0024>

95. Odom S, Boso H, Bowling S, **Brownell SE**, Cotner S, Creech C, Drake A, Eddy SL, Fagbodun S, Hebert S, James A, Just J, Juliana J, Shuster M, Thompson S, Whittington R, Wills B, Wilson A, Zamudio K, Zhong M, Ballen C. Meta-analysis of gender performance gaps in undergraduate natural science courses. CBE Life Sciences Education. July 2021. <https://www.lifescied.org/doi/10.1187/cbe.20-11-0260>

94. Grunspan D<sup>+</sup>, Dunk R, Barnes ME<sup>+</sup>, Wiles J, **Brownell SE**. A comparison study of human examples vs. non-human examples in an evolution lesson leads to differential impacts on student learning experiences in an introductory biology course. Evolution Education and Outreach. June 2021. <https://evolution-outreach.biomedcentral.com/articles/10.1186/s12052-021-00148-w>

93. Gin LE<sup>#</sup>, Guerrero FA<sup>^</sup>, **Brownell SE<sup>\*</sup>**, Cooper KM<sup>\*</sup>. COVID-19 and undergraduates with disabilities: Challenges resulting from the rapid transition to online course delivery for students with disabilities in undergraduate STEM. CBE Life Sciences Education. June 2021. (\*these senior authors contributed equally) <https://www.lifescied.org/doi/10.1187/cbe.21-02-0028>

#### **Commentary**

ASU TeachTech Blog <http://asutechwebs.blogspot.com/2021/08/experiences-of-stem-students-with.html>

92. Gin LE<sup>##</sup>, Scott R<sup>\*</sup>, Pfeiffer L<sup>^</sup>, Zheng Y, Cooper KM, **Brownell SE**. It's in the syllabus...or is it? How biology syllabi can serve as communication tools for creating inclusive classrooms at a large-enrollment research institution. Advances in Physiology Education. April 2021. <https://journals.physiology.org/doi/full/10.1152/advan.00119.2020> (\*these authors contributed equally)

91. Ding L, Cooper KM<sup>+</sup>, Stephens M<sup>^</sup>, **Brownell SE**. Learning from error episodes in dialogue-videos: The influence of prior knowledge. Australasian Journal of Educational Technology. April 2021. <https://ajet.org.au/index.php/AJET/article/view/6239/1704>

90. Cooper KM<sup>+</sup>, Cala J<sup>#</sup>, **Brownell SE**. Cultural capital and undergraduate research: An exploration of how biology students operationalize knowledge to access research experiences at a large, public research-intensive institution. International Journal of STEM Education. February 2021. <https://stemeducationjournal.springeropen.com/articles/10.1186/s40594-020-00265-w>

#### **Commentary**

Young N. (2021). The ten “unwritten” rules of getting involved in undergraduate research. PERbites Accessible Physics Education Research.

McGlynn T. (2021). Recommended reads #189. *Small Pond Science*.

ASU Teaching innovation Center blog <http://asutechwebs.blogspot.com/2021/03/students-knowledge-of-finding-and.html>

89. Barnes ME<sup>+</sup>, Mass SA<sup>^</sup>, Roberts JA<sup>^</sup>, **Brownell SE**. Christianity as a Concealable Stigmatized Identity (CSI) among Biology Graduate Students. CBE Life Sciences Education. January 2021. <https://www.lifescied.org/doi/full/10.1187/cbe.20-09-0213>

### Commentary

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2021/03/how-christians-may-feel-stigmatized-in.html>

88. Nadile EM<sup>#</sup>, Alfonso E, Barreiros BM, Bevan-Thomas WD, **Brownell SE**, Chin MR, Ferreira I, Ford SA, Gin LE, Gomez-Rosado JO, Gooding G, Heiden A, Hutt AE, King ML, Perez SG, Rivera Comacho YI, Salcedo F, Sellas CF, Sinda KA, Stahlhut KN, Stephens MD, Wiesenthal NJ, Williams KD, Zheng Y, Cooper KM. Call on me! Undergraduates' perceptions of voluntarily asking and answering questions in front of large-enrollment science classes. PLOS One. January 2021.

<https://journals.plos.org/plosone/article/comments?id=10.1371/journal.pone.0243731>

### Commentary

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2021/02/what-have-we-learned-from-student.html>

2020

87. Mead C, Supriya K<sup>+</sup>, Zheng Y, Anbar AD, Collins JP, LePore P, **Brownell SE**. Online biology degree program broadens access for women, first-generation to college, and low-income students, but grade disparities remain. PLOS One. December 2020.

<https://journals.plos.org/plosone/article/authors?id=10.1371/journal.pone.0243916>

### Commentary

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/12/is-online-biology-degree-program-more.html>

86. Barnes ME<sup>+</sup>, Supriya K<sup>+</sup>, Dunlop HM<sup>^</sup>, Hendrix TM<sup>^</sup>, Sinatra GM, **Brownell SE**. Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students. CBE Life Sciences Education. November 2020. <https://www.lifescied.org/doi/full/10.1187/cbe.19-10-0197>

### Commentary

Middle Tennessee State University Newswise <https://www.newswise.com/articles/mtsu-researcher-led-study-instructors-need-to-address-compatibility-of-religion-science-while-teaching-evolution>

WGNS news radio in Tennessee

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/11/religious-cultural-competence-in.html>

85. Cooper KM<sup>+</sup>, Knope ML, Munstermann M, **Brownell SE**. Students who analyze their own data in a course-based undergraduate research experience (CURE) show gains in scientific identity and emotional ownership of research. Journal of Microbiology and Biology Education. November 2020.

<https://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v21i3.2157>

84. Gin LE<sup>#</sup>, Guerrero F<sup>^</sup>, Cooper KM, **Brownell SE**. Is active learning accessible? Exploring the process of providing accommodations to students with disabilities. CBE Life Sciences Education. October 2020.

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One of the five featured articles for this issue of CBE Life Sciences Education

### Commentary

ASU Teaching Innovation Center Blog <http://asutechwebs.blogspot.com/2020/10/helping-to-support-science.html>

83. Cooper KM, Auerbach AJ, Bader JD, Beadles-Bohling AS, Brashears JA, Cline E, Eddy SL, Elliott DB<sup>^</sup>, Farley E, Fuselier L, Heinz H, Josek T, Lane AK, Lo SM, Maloy J, Nugent M, Offerdahl E, Palacios-Moreno J, Ramos J, Reid JW, Sparks RA, Stephens MD<sup>^</sup>, Waring AL, Wilton M, Gormally C\*, **Brownell SE**\*. Fourteen recommendations to create a more inclusive environment for LGBTQ+ individuals in academic biology. CBE Life Sciences Education. July 2020. (\* these authors contributed equally)  
<https://www.lifescied.org/doi/10.1187/cbe.20-04-0062>

Article is in the top 5% of all research outputs ever tracked by Altmetric

#### **Commentary**

ASU Innovation Center Blog <http://asutechwebs.blogspot.com/2020/07/tips-to-make-your-classroom-more.html>

American Society for Microbiology blog <https://asm.org/Articles/2021/September/Creating-more-LGBTQIA-inclusive-biology-learning-e>

82. Cooper KM<sup>+</sup>, Gin L<sup>#</sup>, **Brownell SE**. Depression as a concealable stigmatized identity: What influences whether students conceal or reveal their depression in undergraduate research experiences? International Journal of STEM Education. June 2020.  
<https://stemeducationjournal.springeropen.com/articles/10.1186/s40594-020-00216-5>

#### **Commentary**

ASU Now <https://news.asu.edu/20200604-solutions-depression-can-hit-science-undergrads-hard-what-do-about-it>

Biomed Central (BMC) On Society Blog <https://blogs.biomedcentral.com/on-society/2020/06/29/how-can-we-as-mentors-help-undergraduate-researchers-with-depression/>

81. Barnes ME<sup>+</sup>, Dunlop HM<sup>^</sup>, Sinatra GM, Hendrix T<sup>^</sup>, Zheng Y, **Brownell SE**. “Accepting evolution means you can’t believe in God”: Atheistic perceptions of evolution among college biology students. CBE Life Sciences Education. May 2020. <https://www.lifescied.org/doi/10.1187/cbe.19-05-0106>

*One of the five most read articles of CBE Life Sciences Education last month*

#### **Commentary**

ASU Innovation Center Blog <http://asutechwebs.blogspot.com/2020/07/can-someone-believe-in-god-and-accept.html>

80. Downing V<sup>#\*</sup>, Cooper KM<sup>+</sup>, Cala J, Gin LE<sup>#</sup>, **Brownell SE**. Fear of negative evaluation and student anxiety in community college active learning science courses. CBE Life Sciences Education. May 2020. (\*these authors contributed equally) <https://www.lifescied.org/doi/10.1187/cbe.19-09-0186>

79. Cooper KM<sup>+</sup>, Gin L<sup>#\*</sup>, Barnes ME<sup>+</sup>, **Brownell SE**. Exploring student depression in undergraduate research experiences. CBE Life Sciences Education. May 2020. (\* these authors contributed equally)  
<https://www.lifescied.org/doi/10.1187/cbe.19-11-0217>

*Article is in the top 3% of all research outputs ever tracked by Altmetric and is #16 of 648 outputs from the CBE Life Sciences Education.*

*One of the five most read articles of CBE Life Sciences Education last month*

### **Commentary**

Seckel. S. (2020). Depression can hit science undergrads hard: What to do about it. *ASU Now*.

McGlynn T. (2020). Recommended reads #174. *Small Pond Science*.

Cooper K. (2020). How can we, as mentors, help undergraduate researchers with depression? *BMC On Society*. Part of Springer Nature.

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/06/how-to-make-undergraduate-research.html>

78. Branchaw J, Pape-Lindstrom P, Tanner KD, Bissonnette S, Cary T, Couch BA, Crowe AJ, Knight JK, Semsar K, Smith J, Smith MK, Summers MM, Wienhold C, Wright CD<sup>+</sup>, **Brownell SE**. Resources for Teaching and Assessing the Vision and Change Biology Core Concepts. *CBE Life Sciences Education*. May 2020. <https://www.lifescied.org/doi/10.1187/cbe.19-11-0243>

77. Cooper KM<sup>+</sup>, Nadile EM<sup>#</sup>, **Brownell SE**. Don't joke about me: Student identities and perceptions of instructor use of humor in science classrooms. *Journal of Microbiology and Biology Education Special Issue on Diversity and Inclusion*. 14 pages. April 2020. <https://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v21i1.2085>

### **Commentary**

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/05/instructors-be-careful-about-joking.html>

76. Grunspan DZ<sup>+</sup>, Nesse RM, **Brownell SE**. EvMedEd: A teaching resource for integrating medical examples into evolution education. *American Biology Teacher*. February 2020. 4 pages. <https://abt.ucpress.edu/content/82/2/123>

### **Commentary**

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/05/evolutionary-medicine-teaching.html>

75. Barnes ME<sup>+</sup>, Werner R, **Brownell SE**. Differential impacts of a culturally competent genetics curriculum on student perceptions of conflict between religion and evolution at an evangelical university. *American Biology Teacher*. February 2020. 9 pages. <https://abt.ucpress.edu/content/82/2/93>

74. Barnes ME<sup>+</sup>, Truong J<sup>^</sup>, Grunspan DZ<sup>+</sup>, **Brownell SE**. Are scientists biased against Christians? Exploring real and perceived Christian bias in academic biology. *PLOS ONE*. January 2020. 19 pages. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0226826>

### **Commentary**

Times Higher Education, Real Clear Science

2019

73. Cooper KM<sup>+</sup>, Blattman JN, Hendrix T<sup>^</sup>, **Brownell SE**. The impact of broadly relevant novel discoveries on student project ownership in a traditional lab course turned CURE. *CBE Life Sciences Education*. December 2019. 14 pages. <https://www.lifescied.org/doi/10.1187/cbe.19-06-0113>

72. Cooper KM<sup>+</sup>, **Brownell SE**, Gormally C. Coming Out to the Class: Identifying Factors that Influence College Biology Instructor Decisions About Whether to Reveal Their LGBTQIA Identity in Class. *Journal of Women and Minorities in Science and Engineering*. October 2019. 22 pages. [http://docs.wixstatic.com/ugd/98a1a0\\_7dc7a9498c9e4c2da100091a763f2ad6.pdf](http://docs.wixstatic.com/ugd/98a1a0_7dc7a9498c9e4c2da100091a763f2ad6.pdf)

71. Smith MK, **Brownell SE**, Crowe AJ, Holmes NG, Knight JK, Semsar K, Summers MM, Walsh C, Wright CD<sup>+</sup>, Couch BA. Tools for Change: Measuring Student Conceptual Understanding Across Undergraduate Biology Programs Using Bio-MAPS Assessments. *Journal of Microbiology and Biology Education*. September 2019. 5 pages. <https://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v20i2.1787>

70. Cooper KM<sup>+</sup>, Gin L<sup>#\*</sup>, Akeeh B<sup>^</sup>, Clark CE<sup>^</sup>, Hunter JS<sup>^</sup>, Roderick TB<sup>^</sup>, Elliott DB<sup>^</sup>, Gutierrez LA<sup>^</sup>, Mello RM<sup>^</sup>, Pfeiffer LD<sup>^</sup>, Scott RA<sup>^</sup>, Arellano D<sup>^</sup>, Ramirez D<sup>^</sup>, Valdez EM<sup>^</sup>, Vargas C<sup>^</sup>, Velarde K<sup>^</sup>, Zheng Y, **Brownell SE**. Factors that predict biological sciences student persistence in undergraduate research experiences. *PLOS ONE*. August 2019. 30 pages. (\*these authors contributed equally) <https://journals.plos.org/plosone/article/comments?id=10.1371/journal.pone.0220186>

**Commentary:**

ASU Now <https://asunow.asu.edu/20190814-asu-study-shows-positive-lab-environment-critical-undergrad-success-research>

Highlighted by *Phys.Org, Science Daily, and Eureka Alert*.

Flaherty, C. (2018) Lab climate and persistence in undergraduate research? *Inside Higher Ed*.

Scott, R. (2019). Not all undergraduate research experiences are good. *ASU SOLS Teach Tech Blog*.

Seckel, S. (2020). Depression can hit science undergrads hard: What to do about it. *ASU Now*.

Johnson, K. (2020). Strategies and tips for inclusive advising. *PECOP Blog*.

Featured on SEISMIC Office Hours, a podcast hosted by Solina Solanki (June 2021).

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/11/how-can-we-create-more-inclusive.html>

69. Diaz-Martinez LA, Fisher GR, 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. Recommendations for Effective Integration of Ethics and Responsible Conduct of Research (E/RCR) Education into Course-based Undergraduate Research Experiences: A Meeting Report. *CBE Life Sciences Education*. May 2019. 10 pages. <https://www.lifescied.org/doi/full/10.1187/cbe.18-10-0203>

68. Cooper KM<sup>+</sup>, Gin L<sup>#\*</sup>, **Brownell SE**. Diagnosing differences in what undergraduates in a fully online and an in-person biology degree program know and do regarding medical school admission. *Advances in Physiology Education*. May 2019. 12 pages. (\*these authors contributed equally) <https://physiology.org/doi/pdf/10.1152/advan.00028.2019>

**Commentary:** ASU Teaching Innovation Center blog

Balli E. The College launches new Online Undergraduate Research Scholars Program. *ASU News*. September 2021. <https://news.asu.edu/20210921-college-launches-new-online-undergraduate-research-scholars-program>

67. Grunspan DZ<sup>+</sup>, Moeller KT, Nesse RM, **Brownell SE**. The state of evolutionary medicine in undergraduate education. *Evolution, Medicine, and Public Health (EMPH)*. May 2019. 11 pages. <https://academic.oup.com/emph/article/2019/1/82/5487408>

66. Couch BA, Wright CD<sup>+</sup>, Freeman S, Knight JK, Semsar K, Smith MK, Summers MM, Zheng Y, Crowe AJ, **Brownell SE**. GenBio-MAPS: A programmatic assessment to measure student understanding of Vision and Change core concepts across general biology programs. *CBE Life Sciences Education*. March 2019. 14 pages. <https://www.lifescied.org/doi/10.1187/cbe.18-07-0117>

Selected by Science Magazine as an Editor's Choice for Education

Highlighted in the journal *Genetics* as an Education Highlight

**Commentary:**

ASU Now <https://asunow.asu.edu/20190507-biology-test-first-publicly-available-measure-understanding-five-core-concepts>

65. Semsar K, **Brownell SE**, Couch BA, Crowe AJ, Smith MK, Summers MM, Wright CD<sup>+</sup>, Knight JK. Phys-MAPS: A programmatic physiology assessment for introductory and advanced undergraduates. *Advances in Physiology Education*. March 2019. 13 pages. <https://www.physiology.org/doi/full/10.1152/advan.00128.2018>

64. Dunk R, Barnes ME<sup>+</sup>, Reiss M, Alters B, Asghar A, Carter B, Cotner S, Glaze A, Hawley P, Jensen J, Mead L, Nadelson L, Nelson C, Pobiner B, Scott E, Shtulman A, Sinatra G, Southerland S, Walter E, **Brownell S**, Wiles J. Evolution Education Involves a Complex Landscape of Interrelated Factors. *Nature Ecology and Evolution*. February 2019. 3 pages. <https://www.nature.com/articles/s41559-019-0802-9>

63. Barnes ME<sup>+</sup>, Dunlop H<sup>^</sup>, Holt E, Zheng Y, **Brownell SE**. Different evolution acceptance instruments lead to different research findings. *Evolution Education and Outreach*. January 2019. 17 pages. <https://evolution-outreach.biomedcentral.com/articles/10.1186/s12052-019-0096-z>  
2018

62. Cooper KM<sup>#</sup>, Hendrix T<sup>^</sup>, Stephens M<sup>^</sup>, Cala JM<sup>#</sup>, Agloro A<sup>^</sup>, Badini G<sup>^</sup>, Barnes ME<sup>#</sup>, Eledge B<sup>^</sup>, Jones R<sup>^</sup>, Krieg A<sup>^</sup>, Lemon E<sup>^</sup>, Mahrer K<sup>^</sup>, Mossimo N<sup>#</sup>, Martin A<sup>^</sup>, Ruberto T<sup>#</sup>, Simonson K<sup>^</sup>, Webb E<sup>^</sup>, Weaver J<sup>^</sup>, **Brownell SE**. To be or not to be funny? Student perceptions of instructor humor in college science courses. *PLOS ONE*. August 2018. 24 pages. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0201258>

**Commentary:**

ASU Now, Inside Higher Ed, ZME Science, ASU State Press, ASU's TeachTech Blog, Science Daily, Phys.org, Ask A Biologist, Study Finds

Interviewed about article on Georgia Tech's Inside the Black Box radio show

Most viewed ASU Now news article in 2018

61. Cooper KM<sup>#</sup>, **Brownell SE**. Developing course-based research experiences in discipline-based education research: Lessons learned and recommendations. *Journal of Microbiology and Biology Education*. August 2018. 6 pages. <http://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v19i2.1567>

60. Wright CW<sup>+</sup>, Huang A<sup>\*</sup>, Cooper KM<sup>#</sup>, **Brownell SE**. Exploring differences in decisions about exams among instructors of the same introductory biology course. The International Journal for the Scholarship of Teaching and Learning. July 2018. 15 pages. (\*these authors contributed equally).  
<https://digitalcommons.georgiasouthern.edu/ij-sotl/vol12/iss2/14/>

59. Grunspan D<sup>+</sup>, Kline M, **Brownell SE**. The Lecture Machine: A Cultural Evolutionary Model of Pedagogy in Higher Education. CBE Life Sciences Education. June 2018. 11 pages.  
<https://www.lifescied.org/doi/full/10.1187/cbe.17-12-0287>

Featured in STEM Prof newsletter

Highlighted in American Society for Cell Biology blog

58. Cooper KM<sup>#</sup>, Downing V<sup>#</sup>, **Brownell SE**. The influence of active learning practices on student anxiety in large-enrollment college science classrooms. International Journal of STEM Education. June 2018. 18 pages.  
<https://stemeducationjournal.springeropen.com/articles/10.1186/s40594-018-0123-6>

Listed as the third most frequently cited International Journal of STEM Education article in the first two years

Selected by Science Magazine as an Editor's Choice for Education

Featured in STEM Prof newsletter

In the top 5% of all research outputs scored by Altmetric

**Commentary:**

Jarvis C.L. (2020). The flip side of flipped classrooms. Chemical and Engineering News.

Highlighted by STEM Prof Newsletter (2018). Examining the link between active learning practices and anxious students.

Downing V. (2018). Considering Clickers & Anxiety: Implementing clicker technology so that it decreases student anxiety in the classroom. ASU SOLS Teach Tech Blog.

Brownell S. (2018). Is active learning making students anxious? It depends on how it's done. Center for Biology and Society, Arizona State University.

57. Summers MM, Couch BA, Knight J, **Brownell SE**, Crowe A, Semsar K, Wright CD<sup>+</sup>, Smith MK. EcoEvo-MAPS: An ecology and evolution assessment for introductory and advanced undergraduates. CBE Life Sciences Education. June 2018. 12 pages. <https://www.lifescied.org/doi/10.1187/cbe.17-02-0037>

Featured article in June 2018 issue

56. Cooper KM<sup>#</sup>, Ding L, Stephens MD<sup>^</sup>, Chi MTH, **Brownell SE**. A course-embedded comparison of instructor-generated videos of either an instructor alone or an instructor and a student. CBE Life Sciences Education. June 2018. 15 pages. <https://www.lifescied.org/doi/full/10.1187/cbe.17-12-0288>

**Commentary:**

Dann Hurlbert, Carleton College's Media and Design Guru. Video summary of paper.

<https://littleprompter.com/tag/instructional-video/>

55. Cooper KM<sup>#</sup>, Krieg A<sup>^</sup>, **Brownell SE**. Who perceives they're smarter? Exploring the influence of student characteristics on student academic self-concept in physiology. *Advances in Physiology Education*. April 2018. 9 pages. <https://www.physiology.org/doi/full/10.1152/advan.00085.2017>

*Article downloaded over 25,000 times, is in the top 1% of all research outputs ever tracked by Altmetric, and is #2 of 874 outputs from Advances in Physiology Education.*

**Commentary:**

Generated international press, including New York Times, ABC news, NBC news, BBC, Fortune, The Telegraph, The Times, Daily Mail, Mother Jones, Jezebel, phys.org, Science Daily, AZcentral, Slate's The Gist, and dozens of other radio shows, blogs, and news postings.

Most downloaded article for 2018 out of all 16 American Physiology Society journals

54. Cooper KM<sup>#</sup>, Ashley M<sup>^</sup>, **Brownell SE**. Breaking down barriers: A bridge program helps first year biology students become comfortable and make connections with faculty. *Journal of College Science Teaching*. March 2018. 11 pages. (\*these authors contributed equally).

[http://docs.wixstatic.com/ugd/98a1a0\\_c6956b34cbfc477a866a99f808aa37fb.pdf](http://docs.wixstatic.com/ugd/98a1a0_c6956b34cbfc477a866a99f808aa37fb.pdf)

Featured article in March 2018 issue

53. Truong J<sup>\*</sup>, Barnes ME<sup>#</sup>, **Brownell SE**. Can six minutes of culturally competent evolution education reduce students' level of perceived conflict between evolution and religion? *American Biology Teacher*. February 2018. 10 pages. (\*these authors contributed equally).

[http://docs.wixstatic.com/ugd/98a1a0\\_6aa4fa2b8fb34709b32bebf01bdee437.pdf](http://docs.wixstatic.com/ugd/98a1a0_6aa4fa2b8fb34709b32bebf01bdee437.pdf)

52. Grunspan DZ<sup>+</sup>, Nesse R, Barnes ME<sup>#</sup>, **Brownell SE**. Core principles of evolutionary medicine: A Delphi study. *Evolution, Medicine, and Public Health*. January 2018. 11 pages.

<https://academic.oup.com/emph/advance-article/doi/10.1093/emph/eox025/4774983>

**Commentary:**

Nunn, C. A roadmap for 'core concepts' in evolutionary medicine. *EMPH Editorial*.

2017

51. Barnes ME<sup>#</sup>, **Brownell SE**. A call to use cultural competence when teaching evolution to religious undergraduate students: Introducing Religious Cultural Competence in Evolution Education (ReCCEE). *CBE Life Sciences Education*. December 2017. 10 pages. <https://www.ncbi.nlm.nih.gov/pubmed/29167225>

Article in the top 5% of all research outputs scored by Altmetric

**Commentary:**

Hemphill, C. Five essential practices for "culturally competent" biology instructors. *BioLogos*.

ASU Teaching Innovation Center blog <http://asutechwebs.blogspot.com/2020/04/the-importance-of-using-cultural.html>

50. Ashley M<sup>^</sup>, Cooper KM<sup>#</sup>, Cala JM<sup>#</sup>, **Brownell SE**. Building better bridges into STEM: A synthesis of 25 years of literature on STEM summer bridge programs. *CBE Life Sciences Education*. December 2017. 18 pages. (\*these authors contributed equally). <https://www.lifescied.org/doi/10.1187/cbe.17-05-0085>



One of five featured articles for December 2017 issue

49. Barnes ME<sup>#</sup>, **Brownell SE**. Experiences and practices of evolution instructors at Christian universities that can inform culturally competent evolution education. *Science Education*. November 2017. 24 pages. <http://onlinelibrary.wiley.com/doi/10.1002/sce.21317/full>
48. Barnes ME<sup>#</sup>, Evans EM, Hazel A, **Brownell SE**, Nesse RM. Teleological reasoning, not acceptance of evolution, impacts students' ability to learn natural selection. *Evolution Education and Outreach*. October 2017. 12 pages. <https://link.springer.com/article/10.1186/s12052-017-0070-6>
47. Jordt H, Eddy SL, Brazil R, Lau I, Mann C, **Brownell SE**, King K, Freeman S. Eliminating the achievement gap in an undergraduate biology class using a values affirmation intervention. *CBE Life Sciences Education*. September 2017. 10 pages. <https://www.lifescied.org/doi/full/10.1187/cbe.16-12-0351>
46. Cooper KM<sup>#</sup>, Soneral P, **Brownell SE**. Design your goals before you develop your CURE. A call to use backward design in planning course-based undergraduate research experiences. *Journal of Microbiology and Biology Education*. August 2017. 7 pages. <http://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v18i2.1287>
45. Shortlidge EE<sup>+</sup>, Bangera G, **Brownell SE**. To each their own CURE: faculty who teach course-based undergraduate research experiences report why you too should teach a CURE. *Journal of Microbiology and Biology Education*. August 2017. 11 pages. <http://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v18i2.1260>

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44. Cooper KM<sup>#</sup>, Ashley M<sup>^</sup>, **Brownell SE**. Using expectancy value theory as a framework to reduce student resistance to active learning: a proof of concept. *Journal of Microbiology and Biology Education*. August 2017. 8 pages. <http://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v18i2.1289>

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43. Ballen CJ, Blum JE, **Brownell SE**, Hebert S, Hewlett J, Klein JR, McDonald EA, Monti DL, Nold SC, Slemmons K, Soneral P, Cotner S. A call to develop course-based undergraduate research experiences (CUREs) for nonmajor courses. *CBE Life Sciences Education*. June 2017. 7 pages. <https://www.lifescied.org/doi/10.1187/cbe.16-12-0352>
42. Schinske J, Balke VL, Bangera G, Bonney KM, **Brownell SE**, Carter RS, Curran-Everett D, Dolan EL, Elliott SL, Fletcher L, Gonzalez B, Gorga JJ, Hewlett JA, Kiser SL, McFarland JL, Misra A, Nenortas A, Ngeve SM, Pape-Lindstrom PA, Seidel SB, Tuthill MC, Yin Y, Corwin LA. Broadening Participation in Biology Education Research (BER): Engaging Community College Students & Faculty. *CBE Life Sciences Education*. June 2017. 11 pages. <https://www.lifescied.org/doi/10.1187/cbe.16-10-0289>
41. Cooper KM<sup>#</sup>, Ashley M<sup>^</sup>, **Brownell SE**. A Bridge to Active Learning: A Summer Bridge Program Helps Students Maximize Their Active-Learning Experiences and the Active-Learning Experiences of Others. *CBE Life Sciences Education*. March 2017. 14 pages. <https://www.lifescied.org/doi/10.1187/cbe.16-05-0161>

7<sup>th</sup> most read article in *CBE Life Sciences Education* in the second month it was published

40. Barnes ME<sup>#</sup>, Truong J<sup>^</sup>, **Brownell SE**. Experiences of Judeo-Christian students in undergraduate biology. *CBE Life Sciences Education*. March 2017. 16 pages. <https://www.lifescied.org/doi/10.1187/cbe.16-04-0153>

**Commentary:**

S. Leander (2017) Evolution and religion: Finding middle ground in the biology classroom. ASU Now

2<sup>nd</sup> most read article in CBE Life Sciences Education in the first month it was published

39. Cooper KM<sup>#</sup>, Haney B<sup>#</sup>, Krieg A<sup>^</sup>, **Brownell SE**. What's in a name? The importance of students perceiving an instructor knows their names in a high enrollment biology classroom. CBE Life Sciences Education. March 2017. 13 pages. <https://www.lifescied.org/doi/10.1187/cbe.16-08-0265>

Article in the top 5% of all research outputs scored by Altmetric

**Commentary:**

M. Weimer (2017) The Importance of Learning Students' Names. Faculty Focus blog

A. Krieg (2017) What's the Point of Using Student Names in Large Courses? ASU SOLS Teachtech blog

Highlighted in STEM PROF newsletter. I Got a Name: Why It Matters that Instructors Know Student Names

C Brame (2019) Big classes, name tents, and anxiety in the classroom.

8<sup>th</sup> most read in CBE Life Sciences Education in the first month it was published

38. Barnes ME<sup>#</sup>, Elser J, **Brownell SE**. Impact of a Short Evolution Module on Students' Perceived Conflict between Religion and Evolution. American Biology Teacher. February 2017. 8 pages. <http://abt.ucpress.edu/content/79/2/104>

**Commentary:**

R. Lloyd (2017) Dissent with Modification: Soothing Evolution–Religion Tensions in the Classroom. Scientific American

R. Lloyd (2017) Scientists Work on Public Trust. Undark blog

M. Puniewska (2017) There's a Strategy to Persuade Climate Change Deniers. Tonic

S. Leander (2017) Evolution and religion: Finding middle ground in the biology classroom. ASU Now

J. Krell (2017) Resolving the conflict between evolution and religion. ASU Center for Evolution and Medicine news

M. Nisbet (2017) Evolution in the college classroom: Facilitating conversations about science and religion. Skeptical Inquirer Magazine.

Interviewed by BBC Science in Action about this article and by Phoenix NPR affiliate KJZZ about this article

Most read article in American Biology Teacher in the first month it was published

2016

37. Shortlidge EE<sup>+</sup>, **Brownell SE**. How to assess your CURE: A practical guide for instructors of course-based undergraduate research experiences. *Journal of Microbiology and Biology Education*. December 2016. 10 pages. <http://www.asmscience.org/content/journal/jmbe/10.1128/jmbe.v17i3.1103>

Highlighted in the 2017 Spotlight issue of JMBE as an exemplary article

36. Hekmat-Safe D, **Brownell S**, Chandler PS, Malladi S, Imam J, Singla V, Bradon N, Cyert M, Stearns T. Using yeast to determine the functional consequences of mutations in the human p53 tumor suppressor gene: An introductory course-based undergraduate research experience in molecular and cell biology. *Biochemistry and Molecular Biology Education*. November 2016. 18 pages. <http://onlinelibrary.wiley.com/doi/10.1002/bmb.21024/full>

35. Cooper KM<sup>#</sup>, **Brownell SE**. Coming out in class: The challenges and opportunities of active learning for LGBTQIA students in an undergraduate biology class. *CBE Life Sciences Education* as part of the Broadening Participation Special Issue. September 2016. 19 pages. <https://www.lifescied.org/doi/10.1187/cbe.16-01-0074>  
One of the five most read articles of *CBE Life Sciences Education* in the first month it was published

**Commentary:**

S. Leander (2016) ‘Coming out’ in the classroom, but not by choice. *ASU Now news*.

T. Pedersen (2016) Interactive Classrooms May Push LGBT Students to “Come Out” Before They Are Ready. *PsychCentral*

K. Cooper (2016) How Instructors Can Make Their Active Learning Classrooms More Inclusive to Members of the LGBTQIA Community. *ASU SOLS Teachtech blog*

3<sup>rd</sup> most read in *CBE Life Sciences Education* in the first month it was published

In the top 5% of all research outputs scored by Altmetric

34. Hsu J, Wrona A, **Brownell SE**, Khalfan W. Exploration enhances education: single session research-based courses promote undergraduate research involvement and provide teaching opportunities for graduate students and postdocs. *Journal of College Science Teaching*. July/August 2016. 9 pages. [http://media.wix.com/ugd/98a1a0\\_e471e7e1ce9c4303800c788e3a82fd88.pdf](http://media.wix.com/ugd/98a1a0_e471e7e1ce9c4303800c788e3a82fd88.pdf)

33. Eddy SL\* and **Brownell SE\***. Beneath the numbers: A review of gender disparities in undergraduate education across science, technology, engineering, and math disciplines. *Physics Review: Special Topics Physics Education Research: Gender in Physics*. August 2016. 20 pages. (\*these authors contributed equally). <http://journals.aps.org/prper/abstract/10.1103/PhysRevPhysEducRes.12.020106#fulltext>

**Commentary:**

R. Skibba (2016) Women in physics face big hurdles — still. *Nature news*

32. Wright CW<sup>+</sup>, Eddy SE, Wenderoth MP, Abshire E, Blankenbiller M, **Brownell SE**. Cognitive difficulty and format of exams predicts gender and socioeconomic gaps in exam performance of students in introductory biology courses. *CBE Life Sciences Education*. June 2016. 16 pages. <https://www.lifescied.org/doi/10.1187/cbe.15-12-0246>

Highlighted as one of five featured articles from the June 2016 issue of *CBE Life Sciences Education*

**Commentary:**

S. Leander (2016) Gender gap discovered in science-exam performance. ASU Now news

M. Benz (2016) Women Underperformed Men in High Level Critical Thinking Examinations. MedicalResearch.com

News staff (2016) Gender gap discovered in science exam performance: test difficulty may be the cause. Science Daily.

J. Marczyk (2016) Sexism, Testing, And “Academic Ability.” Psychology Today Pop Psychology blog

6<sup>th</sup> most read in CBE Life Sciences Education in the first month it was published

31. Barnes ME<sup>#</sup>, **Brownell SE**. Practices and Perspectives of College Instructors on Addressing Religious Beliefs When Teaching Evolution. CBE Life Sciences Education. June 2016. 19 pages. <https://www.lifescied.org/doi/10.1187/cbe.15-11-0243>

Article in the top 5% of all research outputs scored by Altmetric

**Commentary:**

S. Leander (2016) Evolution and religion: New insight into instructor attitudes in Arizona. ASU Now

Phys.org, Science Daily, Creation Evolution Headlines, Science 2.0, Richard Dawkins Foundation for Reason and Science, and Lutheran Alliance for Faith, Science, and Technology

6<sup>th</sup> most read in CBE Life Sciences Education in the first month it was published

30. Grunspan DZ\*, Eddy SL\*, **Brownell SE**, Wiggins B, Crowe AJ, and Goodreau SM. Male millennials overestimate the ability of other males in introductory biology. PLOS One. Feb 2016. (\*these authors contributed equally). 16 pages. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148405>

Selected by Science Magazine as an Editor’s Choice for Education

**Commentary:**

The Atlantic, The Washington Post, University of Washington Today News, Inside Higher Education, US News, Huffington Post, Teen Vogue, Jezebel, Bustle, Revelist, Vox, Glamour, Yahoo news, Educational Advisory Board, Headline news, Oxygen, Identities.com, Wonkett, and The Onion.

Article in top 25% of cited articles in PLOS One in 2016

~47,000 article views one year after it was published

In the top 5% of all research outputs scored by Altmetric

29. Shortlidge EE<sup>+</sup>, Bangera G, **Brownell SE**. Faculty Perspectives on Developing and Teaching Course-based Undergraduate Research Experiences. BioScience. January 2016. 9 pages. <http://bioscience.oxfordjournals.org/content/early/2015/12/04/biosci.biv167.abstract>

**Commentary:**

J. Krell (2016) ASU study shows lab courses benefit faculty, as well as students. ASU news.

## 2015

28. Eddy SL\*, **Brownell SE\***, Thummaphan P, Lan M, Wenderoth MP. Caution, student experience may vary: Social identities impact a student's experience in peer discussions. CBE Life Sciences Education. December 2015. (\*these authors contributed equally). 17 pages. <https://www.lifescied.org/doi/full/10.1187/cbe.15-05-0108>

Highlighted as one of five featured articles from the December 2015 issue of CBE Life Sciences Education

In the top 5% of all research outputs scored by Altmetric

### **Commentary:**

C. Wright (2015) The Impact of Active Learning on Different Genders. ASU SOLS Teachtch blog

27. **Brownell SE**, Hekmat-Safe DS, Singla V, Seawell PC, Conklin-Imam JF, Eddy SL, Stearns T, and Cyert MS. A high enrollment course-based undergraduate research experience improves student conceptions of scientific thinking and ability to interpret data. CBE Life Sciences Education. June 2015. 14 pages. <https://www.lifescied.org/doi/10.1187/cbe.14-05-0092>

Featured in the 2015 Highlights issue of CBE Life Sciences Education as an exemplar of life sciences education research

Highlighted in the journal Genetics as an Education Highlight

Highlighted on the CUREnet website, a national organization focused on course-based undergraduate research experiences

Highlighted on the University of Wisconsin Madison Educational Innovation website

In the top 5% of all research outputs scored by Altmetric

26. **Brownell SE\*** and Kloser MJ\*. Toward a conceptual framework for measuring the effectiveness of course-based undergraduate research experiences in undergraduate biology. Studies in Higher Education. March 2015. 22 pages. (\*these authors contributed equally). <http://www.tandfonline.com/doi/full/10.1080/03075079.2015.1004234>

Highlighted on CUREnet website, an organization focused on course-based undergraduate research experiences

## 2014

25. Bangera G\* and **Brownell SE\***. Course-based undergraduate research experiences can make scientific research more inclusive. CBE Life Sciences Education. December 2014. 5 pages. (\*these authors contributed equally). <https://www.lifescied.org/doi/full/10.1187/cbe.14-06-0099>

Highlighted in the journal Genetics as an Education Highlight

Highlighted on American Geophysical Union Blogosphere

Highlighted on PULSE community website. Highlighted on American Society for Cell Biology's Office Hours with EdComm. Highlighted on New Mexico Highlands University Achieving in Research, Math and Science (ARMAS) in Education Center website. Highlighted on Livingston College STEM Undergraduate Program to Promote Opportunities in Research and Training (SUPPORT) website.

Article in the top 5% of all research output scored by Altmetric

One of the five most cited articles of CBE Life Sciences Education

**Commentary:**

Jenna Richter (2015) Course-based undergraduate research experiences can make scientific research more inclusive. Center for Teaching Development, UCSD.

24. Eddy SL\*, **Brownell SE\***, Wenderoth MP. Gender gaps in achievement and participation in multiple introductory biology classrooms. CBE Life Sciences Education. September 2014. 16 pages. (\*these authors contributed equally) <https://www.lifescied.org/doi/full/10.1187/cbe.13-10-0204>

Selected for Science Magazine as an Editor's Choice for Education

Highlighted in a NY Times OpEd on education "Is college lecturing biased?"

Highlighted on PULSE community website

Article in the top 5% of all research outputs scored by Altmetric

**Commentary:**

S. Leander (2014) Study shows gender gaps remain in introductory science classrooms. ASU news.

C. Weller (2014) Gender gap in science continues, despite most biology majors being female. Medical Daily.

News staff (2014) How to get women to participate more in biology classes. Science 2.0

Interviewed by ASU Cronkite news about this article

23. **Brownell SE**, Freeman S, Wenderoth MP, Crowe AJ. BioCore Guide: A tool for interpreting the core concepts of Vision and Change. CBE Life Sciences Education. June 2014. 12 pages. <https://www.lifescied.org/doi/full/10.1187/cbe.13-12-0233>

Highlighted as one of five featured articles for June 2014 issue of CBE Life Sciences Education

Most read in CBE Life Sciences Education in the first month it was published

Highlighted in the Vision and Change: Chronicling Change, Inspiring the Future Report

Highlighted on the websites for the National Science Foundation (NSF), American Institute for Biological Sciences (AIBS), PULSE community, Southeast Regional PULSE (SERP), and Oberlin College's Bio 100 syllabus.

Highlighted in Current Biology news story "Breathing fresh life into life science education"

**Commentary:**

S Leander (2014) ASU Researcher Leads National Effort to Transform Biology Education. ASU News

22. **Brownell SE**, Wenderoth MP, Theobald R, Okoroafor N, Koval M, Freeman S, Walcher-Chevillet CL, and Crowe AJ. How students think about experimental design: novel conceptions revealed by in-class activities. *BioScience*. February 2014. 13 pages. <http://bioscience.oxfordjournals.org/content/64/2/125.full>

2013 and earlier

21. **Brownell SE**, Kloser MJ, Fukami T, and Shavelson R. Context matters: volunteer bias, small sample size, and the value of comparison groups in the assessment of research-based undergraduate introductory lab courses. *Journal of Microbiology and Biology Education*. December 2013. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3867754/>

Highlighted on Biology Scholars Research Residency website

20. **Brownell SE**, Price JV, and Steinman L. Science communication to the general public: Why we need to teach undergraduate and graduate students this skill as part of their formal scientific training. *Journal of Undergraduate Neuroscience Education*. October 2013. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3852879/>

**Commentary:**

S.H. Joo (2015) Communicating science to the general public. Student blog assignment for a course at Ryerson University

Forbes article “Study Re-Emphasizes: If You Want To Advance Science, Try Explaining It More Simply”

19. **Brownell SE**, Price JV, and Steinman L. A writing –intensive course improves biology undergraduates’ perception and confidence of their abilities to read scientific literature and communicate science. *Advances in Physiology Education*. March 2013. <http://advan.physiology.org/content/37/1/70>

18. Kloser MJ\*, **Brownell SE\***, Shavelson R, Fukami T. Effects of a Research-based Ecology Lab Course: A study of nonvolunteer achievement, self-confidence, and perception of lab course purpose. *Journal of College Science Teaching*. January/February 2013. (\*these authors contributed equally) [http://media.wix.com/ugd/98a1a0\\_595a17d8dbaa410a82c888227226b2f4.pdf](http://media.wix.com/ugd/98a1a0_595a17d8dbaa410a82c888227226b2f4.pdf)

17. **Brownell SE**, Khalfan W, Bergmann D, Simoni R. Explorations: A research-based program that provides unique teaching opportunities for graduate students while introducing undergraduates to diverse research topics in biology. *Journal of College Science Teaching*. January/February 2013. [http://media.wix.com/ugd/98a1a0\\_33b6c7ebc40b440cbc7cea73ca1fb0f2.pdf](http://media.wix.com/ugd/98a1a0_33b6c7ebc40b440cbc7cea73ca1fb0f2.pdf)

16. **Brownell SE**, Tanner KD. Barriers to Faculty Pedagogical Change: Lack of Training, Time, Incentives, and ... Tensions with Professional Identity? *Cell Biology Education- Life Sciences Education (CBE-LSE)*. December 2012. <https://www.lifescied.org/doi/10.1187/cbe.12-09-0163>

Finalist for Maryellen Weimer Scholarly Work on Teaching and Learning Award

Featured in 2013 Highlights issue of CBE LSE as an exemplar of life sciences education research

Highlighted as one of five featured articles in December 2012 issue

Highlighted in National Research Council report “Reaching Students”

Highlighted in Current Biology news story “Breathing fresh life into life science education”

Highlighted on PULSE community website and NSF’s WIDER Program Solicitation

Article in the top 5% of all research outputs scored by Altmetric

One of the five most cited articles of CBE Life Sciences Education

**Commentary:**

C.M. Buddle (2013) How “professional baggage” may be a key barrier in changing how we teach. Personal blog

L. Johnson (2013) Barriers to change? Australian Council of Deans of Science Teaching and Learning Centre

L.A. Moran (2015) Why can’t we teach properly? Personal blog

Anonymous (2015) What is the relationship between teaching and learning? Personal blog

15. **Brownell SE\***, Kloser MJ\*, Fukami T, Shavelson RJ. Undergraduate biology lab courses: Comparing the impact of traditionally-based ‘cookbook’ and authentic research- based courses on student lab experiences. Journal of College Science Teaching. March/April 2012. (\*these authors contributed equally)  
[http://media.wix.com/ugd/98a1a0\\_846ecd5fe8d44a30bd4fe77a34e8bd49.pdf](http://media.wix.com/ugd/98a1a0_846ecd5fe8d44a30bd4fe77a34e8bd49.pdf)

**Commentary:**

McClure M (2011) Ditch the cookbook: Stanford’s biology pilot project shows benefits from nontraditional lab class. Stanford Report.

Passaelli J (2013) Out of the cookbook and into the field. Stanford Teaching Commons.

14. Kloser MJ\*, **Brownell SE\***, Chiariello NR, Fukami T. Integrating teaching and research in undergraduate biology laboratory education. PLoS Biology. November 2011. (\*these authors contributed equally)  
<http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1001174>

**Scientific Publications**

13. Rothbard JB, Kurnellas MP, Ousman SS, **Brownell S**, Rothbard JJ, Steinman L. Small heat shock proteins, amyloid fibrils, and nicotine stimulate a common immune suppressive pathway with implications for future therapies. Cold Spring Harbor Perspect Med. September 2018.

12. Steinman L, Axtell RC, Barbieri D, Bhat R, **Brownell SE**, de Jong B, Dunn SE, Grant JL, Han MH, Ho PP, Kuipers HF, Kurnellas MP, Ousman SS, Rothbard J. Piet Mondrian's trees and the evolution in understanding multiple sclerosis, Charcot Prize Lecture 2011. Multiple Sclerosis. 2013. Jan 9.

11. **Brownell SE\***, Kurnellas MP\*, Su L, Malkovskiy AV, Rajadas J, Dolganov G, Chopra S, Schoolnik GK, Sobel RA, Webster J, Ousman SS, Becker RA, Steinman L, Rothbard J. Chaperone activity of small heat shock proteins underlies therapeutic efficacy in experimental autoimmune encephalomyelitis. Journal of Biological Chemistry. 2012. Oct 19. (\*these authors contributed equally)



10. Han MH, Lundgren DH, Jaiswal S, Chao M, Graham KL, Garris CS, Axtell RC, Ho PP, Lock CB, Woodard JI, **Brownell SE**, Zoudilova M, Hunt JF, Baranzini SE, Butcher EC, Raine CS, Sobel RA, Han DK, Weissman I, Steinman L. Janus-like opposing roles of CD47 in autoimmune brain inflammation in humans and mice. *Journal of Experimental Medicine*. 2012. June 25.

9. **Brownell SE**, Becker R, Steinman L. The protective and therapeutic function of small heat shock proteins in neurological diseases. *Frontiers in Immunology Review*. 2012. May 1.

8. Rothbard J\*, Kurnellas M\*, **Brownell SE**, Adams C, Su L, Axtell RC, Chen R, Fathman G, Robinson WH, Steinman L. Therapeutic effects of systemic administration of the chaperon alpha B crystallin associated with binding pro-inflammatory plasma proteins. *Journal of Biological Chemistry*. 2012. Feb 3. (\*these authors contributed equally)

7. **Brownell SE\***, Arac A\*, Rothbard J, Chen C, Ko R, Pereira M, Albers G, Steinman L, Steinberg G. Systemic augmentation of  $\alpha$ B crystallin provides therapeutic benefit twelve hours post-stroke onset via immune modulation. *Proceeding of the National Academies of Science (PNAS)*. 2011. July 26. (\*these authors contributed equally)

**Commentary:**

Collins N (2011) Stroke drug could reduce brain damage 12 hours later. *The telegraph*

Goldman B (2011) Scientists discover potential stroke treatment that may extend time to present brain damage. *Inside Stanford Medicine*.

6. **Brownell SE** and Conti B. Age and gender-specific changes of hypocretin immunopositive neurons in C57Bl/6 mice. *Neuroscience Letters*. 2010. Feb 1.

5. Osborn O, Sanchez-Alavez M, **Brownell SE**, Ross B, Klaus J, Dubins J, Beutler B, Conti B, and Bartfai T. Metabolic Characterization of a Mouse Deficient in All Known Leptin Receptor Isoforms. *Cell Mol Neurobiol*. 2009. Jul 7.

4. Osborn O, **Brownell SE**, Sanchez-Alavez M, Salomon D, Gram H, and Bartfai T. Treatment with an Interleukin 1 beta antibody improves glycemic control in obesity. *Cytokine*. 2008. Aug 22.

3. Conti B, Tabarean I, Sanchez-Alavez M, Davis C, **Brownell SE**, Behrens M, and Bartfai T. Cytokine receptors in the brain. Chapter in book: *Cytokines and the Brain, Volume 6 (NeuroImmune Biology)*. 2008.

2. Sanchez-Alavez M, Klein I, **Brownell SE**, Tabarean I, Davis CN, Conti B, and Bartfai T. Night eating and obesity in the EP3R-deficient mouse. *Proceedings of the National Academies of Science (PNAS)*. 2007. 104(8): p. 2009-14.

**Commentary:**

Schrope M (2007) Team discovers a chemical pathway that causes mice to overeat and gain weight. *The Scripps Research Institute News and Views*.

1. Conti B, Sanchez-Alavez M, Winsky-Sommerer R, Morale MC, Lucero J, **Brownell S**, Fabre V, Huitron-Resendiz S, Henriksen S, Zorrilla EP, de Lecea L, Bartfai T. Transgenic mice with a reduced core body temperature have an increased life span. *Science*. 2006. Nov 3; 314 (5800): 825-8.

**Commentary:**

Pearson H (2006) Cool mice live longer. *Nature News*.

Markey S (2006) “Cooler” mice live longer, study finds. National Geographic News.

### ***Submitted and under peer review***

Edwards BA, Bowen C, **Brownell SE**, Barnes ME. Christian student experiences during peer interactions in undergraduate biology courses. Under review at CBE Life Sciences Education.

Grunspan DZ, Komperda R, Offendahl EG, Abraham AE, Etebari S, Maas SA, Roberts JA, Ghafoor S, **Brownell SE**. Alma Mat(t)ers: the importance of undergraduate institution prestige in faculty hiring networks. Under review at Physics Review Physics Education Research.

Google A, Bowen C, **Brownell SE**, Barnes ME. Isolation, Resilience, and Faith: Experiences of Black Christian Students in Biology Graduate Programs. Under review at Journal of Research in Science Teaching.

Busch C, Nadile E, Mohommed T, Gin LE, **Brownell SE**, Cooper KM. The scientific rules, roles, and values that life sciences graduate students want to see upheld by undergraduate researchers. Under review at Journal of Research in Science Teaching.

### **Editor-reviewed book chapters or articles**

3. Hammond JW, **Brownell SE**, Cheng S, Byrd WC, Kedharnath N, McKay T. Infrastructuring to Scale Multi-institutional Equity and Inclusion Innovations. *Change*. August 2022.

<https://www.tandfonline.com/doi/full/10.1080/00091383.2022.2101866>

Commentary editorial: <https://www.tandfonline.com/doi/full/10.1080/00091383.2022.2101858>

2. Hammond JW, **Brownell SE**, Cheng S, Kedharnath N, Byrd C. Why the Term ‘JEDI’ Is Problematic for Describing Programs that Promote Justice, Equity, Diversity and Inclusion. *Scientific American*. September 2021. <https://www.scientificamerican.com/article/why-the-term-jedi-is-problematic-for-describing-programs-that-promote-justice-equity-diversity-and-inclusion/>

1. Cooper KM<sup>+</sup> and **Brownell SE**. Student anxiety and fear of negative evaluation in active learning science classrooms. In *Active Learning in College Science*. February 2020.

### **Curriculum article**

Cala J<sup>#</sup>, Cooper KM<sup>+</sup>, **Brownell SE**. Using a Sequential Interpretation of Data in Envelopes (SIDE) approach to identify a mystery TRP channel. *CourseSource*. September 2018.

### **Professional Leadership:**

*Biology Education Research is an applied field with an active group of people and funding agencies that are interested in promoting national transformation of undergraduate biology education. Discussions and decisions about undergraduate education are almost exclusively done at the national level since other countries have different educational systems. I have been an invited participant to 19 small invite-only working group meetings of national leaders in the field, six of which have resulted in meeting reports/books of the proceedings. These working groups are often establishing national standards and open questions for the field.*

- SEISMIC National Network Institutional PI, 2019- 2022
- Steering Committee member, HHMI Question Database project, 2019- 2021

- Steering Committee member, ASK Bio, 2020-present
- Advisory board member, NSF CORE BC SER Science literacy skills, 2019- present
- National Science Foundation College of Reviewers for Undergraduate Education, 2018-present
- National Science Foundation Grant Proposal Reviewer, TUES, IUSE, RCN-UBE, S-STEM, and CORE, 2013-present
- Advisory board member, NSF IUSE grant BioSkills: A Roadmap to Institution Transformation of Core Competencies Teaching, 2017-2021
- Chronicle of Higher Education Teaching for Inclusivity webinar panelist, 2022
- Advisory board member, NSF IUSE grant Longitudinal Study of Early Career Faculty (FIRST IV former postdocs), 2017-2020
- American Society for Cell Biology NSF Faculty Research and Education Development (FRED) Program mentor, 2019-2020
- Talking about Leaving Revisited Learning Series Facilitator, 2020
- Invited member for 10-person Advanced Placement (AP) Biology Development Committee (one of only three higher education representatives) that writes and decides the content of the AP Biology exam administered to ~250,000 high school students, 2016-2019
- Inaugural Executive Committee for the Society for the Advancement of Biology Education Research (SABER), core member of initial leadership team for national society, 2018-2019
- Inaugural Steering Committee Member for the Society for the Advancement in Biology Education Research (SABER), helped create a mission statement, set of bylaws, and vision for this national society, 2017-2018
- PALM (Promoting Active Learning & Mentoring) Network Mentor, provided teaching mentorship to biology faculty as part of national network, 2017-2018
- Invited reviewer for National Academies report “Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities,” 2016
- Invited Discussion Leader for Gordon research meeting on Undergraduate Biology Education Research, 2015
- Invited Panelist/committee member for 19 small invite-only national meetings/working groups:
  - 2019 Sustaining CUREs meeting
  - 2018 HHMI meeting on introductory biology assessment
  - 2018 Infusing Ethics into CUREs small working group meeting that resulted in a meeting report <https://www.lifescied.org/doi/full/10.1187/cbe.18-10-0203>
  - 2017 Board on Life Sciences, Evolutionary medicine panel and Introductory biology panel
  - 2017 Unpacking a Movement: Lessons Learned from Vision & Change meeting that resulted in a national report <http://visionandchange.org/files/2018/09/VandC-2018-finrr.pdf>
  - 2017 NSF-funded EMBER (Environments and Metrics in Biology Education and Research) conference on promoting inclusion in undergraduate biology education
  - 2017 National Academies panel for report launch of “Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities”
  - 2017 NSF-funded STEM Institute for Inclusive Teaching (SIIT) planning committee that planned the curriculum and assessment for a summer institute focused on promoting faculty inclusive teaching practices
  - 2016 HHMI Constellation Studio focused on course-based research experiences that resulted in a meeting report [https://www.hhmi.org/sites/default/files/PPDF16\\_SummaryReport\\_030917\\_1.pdf](https://www.hhmi.org/sites/default/files/PPDF16_SummaryReport_030917_1.pdf)
  - 2016 NSF-funded Cognitive Science-Discipline Based Education Research conference
  - 2016 NSF-funded Course-based undergraduate research experiences assessment
  - 2016 NSF-funded Course-based undergraduate research experiences for non-majors meeting that resulted in a peer-reviewed meeting report in CBE Life Sciences Education <http://www.lifescied.org/content/16/2/mr2.full>

- 2015 National Academies Convocation on Discovery-based Education that resulted in a National Report “Integrating Discovery-Based Research into the Undergraduate Curriculum: Report of a Convocation” <https://www.nap.edu/catalog/21851/integrating-discovery-based-research-into-the-undergraduate-curriculum-report-of>
- 2015 National Association of Biology Teachers (NABT) NSF-funded meeting on introductory biology
- 2015 NSF-funded Building capacity for community colleges in biology education research that resulted in a peer-reviewed meeting report in CBE Life Sciences Education <http://www.lifescied.org/content/16/2/mr1.full>
- 2014-2015 Gates Foundation-funded Social Science Research Council project on assessment in undergraduate biology that resulted in a book “Improving Quality in American Higher Education”
- 2014 HHMI course-based research experiences (CRE) assessment meeting
- 2014 NSF-funded Faculty Developers Network meeting
- 2014 NSF-funded Conceptual Assessments in Biology (CAB) meeting

### **Presentations:**

*487 total presentations. I have been invited to give 136 talks/keynotes at national conferences or seminars at institutions, 45 peer-reviewed presentations at meetings, and 306 of these presentations are by my trainees (postdoctoral scholars, graduate students, or undergraduates) on our collaborative work.*

#### **136 invited talks at conferences or seminars at institutions (12 international, 111 national, 13 at ASU):**

- 2023 University of Oregon Institute of Ecology and Evolution seminar, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” Eugene OR, Forthcoming June 2023.
- 2023 University of California Merced Quantitative and Systems Biology department seminar, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” Merced CA, Forthcoming May 2023
- 2023 Middle Tennessee State University Biology seminar series, “Faculty identity in the science classroom: who is represented, what factors influence revealing concealable identities, and how does revealing affect students?,” Murfreesboro TN, Forthcoming April 2023.
- 2023 McGill University Biology Department seminar, “Faculty identity in the science classroom: who is represented, what factors influence revealing concealable identities, and how does revealing affect students?,” Montreal Canada, Forthcoming April 2023.
- 2023 American Chemical Society meeting invited keynote for symposium Organic Chemistry at the Crossroads of Research and Education, “Balancing pedagogical and research goals in the context of course-based undergraduate research experiences,” Indianapolis IN, Forthcoming March 2023.
- 2023 University of Texas at San Antonio Department of Neuroscience, Regenerative and Developmental Biology seminar, “Faculty identity in the science classroom: who is represented, what factors influence revealing concealable identities, and how does revealing affect students?,” Forthcoming March 2023.

- 2023 Trinity College Center for Teaching and Learning invited virtual talk, “Faculty identity in the science classroom: who is represented, what factors influence revealing concealable identities, and how does revealing affect students?,” Forthcoming February 2023.
- 2022 Faculty for Undergraduate Neuroscience (FUN) monthly virtual conversation series virtual talk, “Making more inclusive course syllabi,” December 2022.
- 2022 Pace University Classroom Based Research Experiences symposium virtual keynote, “Balancing pedagogical and research goals in the context of course-based undergraduate research experiences,” October 2022.
- 2022 Arizona State University Educational Outreach and Student Services downtown student seminar, “Making university STEM environments more inclusive for LGBTQ+ individuals,” Phoenix AZ, October 2022.
- 2022 Arizona State University Research, Reflect, and RISE workshop, “How can we make undergraduate science exams more equitable?,” Tempe AZ, September 2022.
- 2022 University of British Columbia STEM Equity retreat virtual plenary, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” June 2022.
- 2022 Leipzig University Physics and Earth Sciences Department virtual seminar, “Gender inequities in university STEM courses,” June 2022.
- 2022 SEISMIC Summer meeting short virtual talk, “Rapid transition to remote instruction: Impact of COVID-19 on student grades and perceived learning,” June 2022.
- 2022 California State Polytechnic University- Pomona workshop, “CURE Institute: Developing research and teaching goals for CUREs,” Pomona CA, June 2022
- 2022 University of Arizona workshop, “CURE Institute: Developing research and teaching goals for CUREs,” Tucson AZ, May 2022.
- 2022 University of Michigan seminar, “Making academic science environments more inclusive for LGBTQ+ individuals,” Ann Arbor MI, May 2022.
- 2022 University of Michigan Enriching Scholarship short talk, “Evidence-based ways to increase student belonging in the active learning classroom,” Ann Arbor MI, May 2022.
- 2022 Emory University Department of Biology virtual seminar, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” April 2022
- 2022 Harvard Medical School Graduate Science Education Series virtual seminar, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” April 2022
- 2022 University of Kentucky Department of Biology seminar, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” Lexington KY, March 2022.

- 2022 Georgia State University Department of Biology seminar, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” Atlanta GA, March 2022.
- 2022 University of North Carolina Chapel Hill Biology department virtual seminar, “Factors that predict student persistence in research: From lab environment to mental health,” March 2022.
- 2022 University of California Irvine Diversity, Equity, and Inclusivity (DEI) Speaker Series virtual seminar, “Making academic science environments more inclusive for LGBTQ+ individuals,” January 2022.
- 2022 Society for Integrative and Comparative Biology (SICB) meeting invited John Moore closing plenary, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” Phoenix AZ, January 2022.
- 2021 University of California Davis Scholarship of Teaching and Learning conference keynote, “The opportunities and challenges of active learning for student anxiety, LGBTQ+ students, and students with disabilities,” Davis CA, December 2021.
- 2021 Howard Hughes Medical Institute (HHMI) Inclusive Excellence meeting invited virtual workshop, “Supporting students with disabilities as learning environments change,” October 2021.
- 2021 University of Colorado Boulder Department of Ecology and Evolutionary Biology seminar, “Making academic science environments more inclusive for LGBTQ+ individuals,” Boulder CO, September 2021.
- 2021 University of Denver joint Physics department and Biology department seminar, “Making academic science environments more inclusive for LGBTQ+ individuals,” Denver CO, September 2021.
- 2021 Online with Life Sciences Education (LSE) virtual discussion speaker, “Fourteen recommendations to create a more inclusive environment for LGBTQ+ individuals in academic biology,” June 2021.
- 2021 BCEENET- Biological Collections in Ecology & Evolution Network virtual talk, “Inclusive CURE Pedagogy,” June 2021.
- 2021 Genetics Society of America Bridging Research and Education with Model Organisms (BREW MOR) group virtual talk, “Inequities in undergraduate research experiences: Possible concerns and potential strategies for inclusion,” June 2021.
- 2021 Arizona State University Interdisciplinary Course-Based Undergraduate Research Experiences virtual workshop plenary, “Balancing pedagogical and research goals in the context of a course-based undergraduate research experience,” June 2021.
- 2021 Arizona State University School of Life Sciences virtual seminar, “The promise, problems, and potential opportunities of an online biology program,” April 2021.
- 2021 Arizona State University Libraries Lunch and Learn virtual seminar, “Making academic science environments more inclusive for LGBTQ+ individuals,” April 2021.

- 2021 Chapman University Grand Challenges Initiative virtual talk, “Course-based undergraduate research experiences: What, why, and how?,” March 2021.
- 2021 University of Arizona virtual workshop, “CURE Institute: Developing research and teaching goals for CUREs,” March 2021.
- 2021 University of Arizona Department of Molecular and Cellular Biology virtual seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” February 2021.
- 2021 Conference on Faith and Science (COFAS) virtual talk, “Using religious cultural competence in evolution education,” February 2021.
- 2021 Trinity Washington University virtual workshop, “Course-based undergraduate research experiences: What, Why, and How?,” February 2021.
- 2021 University of Pittsburgh Discipline-based Science Education Research Center virtual seminar, “Challenges for students with disabilities in active learning, undergraduate research, and the transition to online,” February 2021.
- 2021 UC Santa Barbara Center for Innovative Teaching, Research, and Learning virtual seminar, “Challenges for students with disabilities in active learning, undergraduate research, and the transition to online,” January 2021.
- 2021 UC Santa Barbara Center for Innovative Teaching, Research, and Learning virtual seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” January 2021.
- 2020 Rutgers University INSPIRE Teaching virtual seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” December 2020.
- 2020 University of North Texas Department of Biology virtual talk, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” November 2020.
- 2020 University of Michigan virtual talk, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” September 2020.
- 2020 University of Arizona virtual workshop, “CURE Institute: Developing research and teaching goals for CUREs,” September 2020.
- 2020 Teaching Tomorrow’s Scientists: American Society for Cell Biology West virtual plenary talk, “How groups of students are differentially impacted by active learning,” Virtual talk, May 2020.
- 2019 Vanderbilt University Science Teaching Lunch Series seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” Nashville TN, November 2019.

- 2019 Middle Tennessee State University Mathematics and Science Education (MSE) Doctoral seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” Murfreesboro TN, November 2019.
- 2019 University of Hawaii Hilo Tropical Conservation Biology and Environmental Science (TCBES) Graduate Program seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” Hilo HI, October 2019.
- 2019 Lawrence University Biology department seminar, “Factors that predict student persistence in research: From lab environment to mental health,” Appleton WI, October 2019.
- 2019 Lawrence University Biology department workshop, “How to design and assess CUREs,” Appleton WI, October 2019.
- 2019 Lawrence University Biology department seminar, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” Appleton WI, October 2019.
- 2019 Arizona State University Out@ASU seminar, “How to make undergraduate classrooms more inclusive of LGBTQ+ students,” Tempe AZ, October 2019.
- 2019 Arizona State University The College Assistant Professor Teaching at ASU workshop, “How to make your classroom more inclusive,” Tempe AZ, September 2019.
- 2019 Indiana University Science Symposium plenary talk, “Assessing Your CURE: Reflections on Course-Based Undergraduate Research Experiences,” Bloomington ID, September 2019.
- 2019 University of Münster Institute for Evolution departmental seminar, “Factors that predict student persistence in research: From lab environment to mental health”, Münster Germany, July 2019.
- 2019 European Molecular Biology Laboratory (EMBL) Equality and Diversity Committee seminar, “Beneath the numbers: Invisible gender gaps in undergraduate biology courses,” Heidelberg Germany, July 2019.
- 2019 University of Münster Institute for Evolution departmental workshop “Spotting sources of bias: How to make your teaching and mentoring more inclusive of all students,” Münster Germany, June 2019.
- 2019 University of Münster Institute for Evolution departmental workshop “How to measure whether you are effective at teaching evolution,” Münster Germany, June 2019.
- 2019 University of Münster Institute for Evolution symposium keynote seminar, “Using cultural competence to effectively teach evolution to religious students,” Münster Germany, May 2019.
- 2019 Texas A&M University Transformational Teaching and Learning Conference plenary talk, “Towards more inclusive active learning classrooms: How groups of students are differentially impacted by active learning,” College Station TX, May 2019.



- 2019 University of British Columbia Biology seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Vancouver Canada, February 2019.
- 2019 Simon Fraser University Biology department seminar, “Benefits associated with integrating teaching and research in course-based undergraduate research experiences,” Vancouver Canada, February 2019.
- 2019 Boise State Center for Teaching and Learning workshop, “Course-based undergraduate research experiences: What, Why, and How?,” Boise ID, January 2019.
- 2019 Boise State Biology Department seminar, “Benefits associated with integrating teaching and research in course-based undergraduate research experiences,” Boise ID, January 2019.
- 2019 Kentucky Wesleyan College Center for Engaged Teaching and Learning Faculty Retreat keynote, “Course-based undergraduate research experiences: What, Why, and How?,” Owensboro KY, January 2019.
- 2018 Stanford University Graduate School of Education Colloquium, “Revealing hidden inequities in undergraduate biology classrooms,” Stanford CA, November 2018.
- 2018 University of California (UC) STEM Faculty Learning Community plenary talk, “Exploring the experiences of students with covert social identities in active learning classrooms,” Santa Barbara CA, November 2018.
- 2018 National Association for Biology Teachers talk for national biology education research award, “A call to use cultural competence in evolution education,” San Diego CA, November 2018.
- 2018 Zombie Apocalypse Medicine Meeting talk, “Culturally competent evolution education,” Tempe AZ, October 2018.
- 2018 Brown University, Sheridan Center for Teaching and Learning HHMI-funded seminar, “Hidden gender inequities in undergraduate science courses,” Providence RI, October 2018.
- 2018 Brown University Sheridan Center for Teaching and Learning HHMI-funded seminar, “How do I design and assess a CURE?,” Providence RI, October 2018.
- 2018 Purdue University Biology Department seminar, “From conflict to common ground: Introducing religious cultural competence in evolution education,” West Lafayette IN, September 2018.
- 2018 Michigan State University Plant Biology Department seminar, “Hidden inequities in undergraduate science classrooms – from exams to instructor humor,” East Lansing MI, September 2018.
- 2018 American Association of Physics Teachers invited talk, “Exploring the influence of covert identities in active learning classrooms,” Washington DC, July 2018.
- 2018 University of La Verne Keck-foundation sponsored workshop, “Building inclusive and fair classrooms: Spotting sources of bias in undergraduate classrooms,” Pomona CA, June 2018.

- 2018 University of La Verne Keck-foundation sponsored workshop, “Assessment of courses that integrate teaching and research,” Pomona CA, June 2018.
- 2018 American Society for Microbiology Microbe Symposium on Growing Your Data and Reaching More Students through Course-Based Research Experiences invited talk, “Balancing pedagogical and research goals in the context of a course-based undergraduate research experience,” Atlanta GA, June 2018.
- 2018 Title V Cooperative Project between the UPR-MSU and Universidad Central del Caribe (UCC) plenary talk, “How to communicate science to a non-scientist,” San Juan, Puerto Rico, May 2018.
- 2018 University of Alabama Birmingham Biology Department seminar, “From conflict to common ground: Introducing religious cultural competence in evolution education,” Birmingham AL, April 2018.
- 2018 American Anthropological Association (AAPA) invited talk, “Religious cultural competence in evolution education (ReCCEE),” Austin TX, April 2018.
- 2018 University of Minnesota Biology Teaching and Learning Department seminar, “From conflict to common ground: A call for religious cultural competence in evolution education,” Minneapolis MN, March 2018.
- 2018 James Madison University College of Science and Mathematics seminar, “Opportunities and tensions associated with integrating teaching and research in undergraduate lab courses,” Harrisonburg VA, March 2018.
- 2018 James Madison University College of Science and Mathematics public lecture, “Student identity, equity, and inclusion in STEM active learning classrooms,” Harrisonburg VA, March 2018.
- 2018 CUR (Council on Undergraduate Research) Dialogues plenary talk, “A sense of mission: Assessment of courses that integrate teaching and research,” Washington DC, February 2018.
- 2018 Florida International University Biology Department seminar, “From conflict to common ground: Introducing religious cultural competence in evolution education,” Miami FL, January 2018.
- 2017 Brigham Young University Biology Department seminar, “From conflict to common ground: Introducing religious cultural competence in evolution education,” Provo UT, October 2017.
- 2017 Gordon Conference on Undergraduate Biology Education invited talk, “Who gets to participate in undergraduate research and how course-based undergraduate research experiences can make scientific research more inclusive,” Easton MA, July 2017.
- 2017 European Molecular Biology Laboratory Equality and Diversity Committee’s Inspirational Seminar, “Building inclusive and fair classrooms: Spotting sources of bias in biology classrooms,” Heidelberg Germany, July 2017.

- 2017 University of Heidelberg Center for Organismal Studies seminar, “Hidden inequities in the classroom: Using data to uncover differential impacts on students in active learning classrooms,” Heidelberg Germany, July 2017.
- 2017 Society of Experimental Biology international meeting invited talk, “Opportunities associated with course-based undergraduate research experiences (CUREs),” Gothenburg Sweden, June 2017.
- 2017 POGIL (Process-oriented Guided Inquiry Learning) national meeting plenary, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” St Louis MO, June 2017.
- 2017 University of Tennessee Knoxville Department of Ecology and Evolutionary Biology seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Knoxville TN, March 2017.
- 2017 University of Cincinnati STEM Education seminar, “Opportunities and tension points associated with course-based undergraduate research experiences,” Cincinnati OH, March 2017.
- 2017 University of Cincinnati STEM Education seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Cincinnati OH, March 2017.
- 2017 University of Georgia Genetics Department seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Athens GA, March 2017.
- 2017 Rochester Institute of Technology (RIT) Science and Mathematics Education Research Collaborative seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Rochester NY, March 2017.
- 2017 Arizona State University Tempe Campus School of Human Evolution and Social Change workshop, “Spotting sources of bias in assessments,” Tempe AZ, March 2017.
- 2017 Biology Leadership Conference (BLC) invited talk, “Opportunities associated with course-based undergraduate research experiences (CUREs),” Tucson AZ, February 2017.
- 2017 Society for the Advancement of Biology Education Research (SABER) West coast regional meeting invited talk, “How to assess your course-based undergraduate research experience (CURE),” Irvine CA, January 2017.
- 2016 San Francisco State University Department of Biology seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” December 2016.
- 2016 Stanford University Department of Biology and Center for Teaching and Learning seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” December 2016.

- 2016 Stanford University Department of Biology and Center for Teaching and Learning seminar, “Opportunities and tension points associated with course-based undergraduate research experiences,” December 2016.
- 2016 Community College Undergraduate Research Initiative (CCURI) national meeting invited talk, “Assessment of course-based undergraduate research experiences,” Glendale AZ, November 2016.
- 2016 HHMI constellation studio on implementing course-based research experiences at scale plenary, “Assessment of course-based undergraduate research experiences,” Chevy Chase MD, November 2016.
- 2016 Arizona State University West Campus School of Mathematical & Natural Sciences seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Glendale AZ, September 2016.
- 2016 Arizona State University Tempe Campus Evidence-based teaching in STEM workshop, “Spotting sources of bias in assessments,” Tempe AZ, September 2016.
- 2016 Arizona State University Tempe Campus Evidence-based teaching in STEM seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Tempe AZ, September 2016.
- 2016 American Society for Microbiology Conference on Undergraduate Education invited talk, “How to assess your course-based undergraduate research experience,” Bethesda MD, July 2016.
- 2016 American Society for Microbiology Conference on Undergraduate Education invited talk, “Opportunities and tension points associated with integrating teaching and research in undergraduate biology lab courses,” Bethesda MD, July 2016.
- 2016 American Society for Microbiology Conference on Undergraduate Education invited talk, “So you transformed your class to active learning – How do you assess the impact of active learning on students?,” Bethesda MD, July 2016.
- 2016 Society for the Advancement in Biology Education Research plenary (long) talk, “Opportunities and tension points associated with course-based undergraduate research experiences,” Minneapolis MN, July 2016.
- 2016 Course-based Undergraduate Research Experience Summer Institute plenary talk, “Course-based undergraduate research experiences: What, why, and how?,” Austin TX, June 2016.
- 2016 American Society for Microbiology Microbe as part of a symposium Developing the Next Gen Scientist: The Role of Course Based Research in the Undergraduate Curriculum invited talk, “Faculty perspectives on course-based undergraduate research experiences,” Boston MA, June 2016.
- 2016 Maricopa Community College Institute for Learning Research seminar, “An overview of biology education research,” Phoenix AZ, April 2016.

- 2016 Portland State University Department of Biology seminar, “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Portland OR, April 2016.
- 2015 University of California San Diego Science of Teaching seminar, “Integrating teaching and research in undergraduate biology lab courses,” La Jolla CA, December 2015.
- 2015 University of Washington Department of Biology seminar, “Integrating teaching and research in undergraduate biology lab courses,” Seattle WA, November 2015.
- 2015 Course-based Undergraduate Research Experience Summer Institute plenary talk, “Opportunities associated with course-based undergraduate research experiences,” Austin TX, June 2015.
- 2015 University of Texas Austin Freshman Research Initiative (FRI) seminar, “Promoting equity in undergraduate biology lab courses,” Austin TX, June 2015.
- 2015 Midwest Great Plains PULSE regional meeting plenary talk, “Navigating from Vision to Change: Tools to help biology departments align curriculum with the core concepts of biology,” St. Louis MO, June 2015.
- 2015 The Ohio State University Center for Life Science Education seminar, “Integrating teaching and research in undergraduate biology lab courses,” Columbus OH, March 2015.
- 2015 The Ohio State University Center for Life Science Education seminar, “BioCore Guide: A tool to interpret the core concepts of Vision and Change for general biology majors,” Columbus OH, March 2015.
- 2014 University of Minnesota College of Biological Sciences seminar, “From traditional lectures to active learning: Persistent gender differences in large introductory biology classrooms,” November 2014.
- 2014 Botanical Society national meeting Vision and Change symposium invited talk, “Integrating teaching and research in undergraduate biology lab courses,” Boise ID, July 2014.
- 2014 Southeast Regional PULSE Institute invited talk, “Course-based undergraduate research experiences (CUREs): Definition, outcomes, and assessment,” Richmond VA, June 2014.
- 2014 Southeast Regional PULSE Institute plenary talk, “Professional identity as a barrier to faculty pedagogical change,” Richmond VA, June 2014.
- 2014 Course-based Undergraduate Research Experiences Network (CUREnet) meeting invited talk, “Course-based undergraduate research experiences (CURE) assessment methods,” Cold Spring Harbor NY, April 2014.
- 2014 Arizona State University Active Learning Symposium, “From traditional lectures to active learning: Persistent gender differences in large introductory biology classrooms,” Tempe AZ, March 2014.

- 2013 Willamette University iScience conference invited talk, “Navigating from Vision to Change: Development of a framework for core concepts in biology for graduating biology majors,” November 2013.
- 2013 Stanford Graduate School of Education Science Education Group invited talk, “Barriers to faculty pedagogical change,” March 2013.
- 2013 Arizona State University School of Life Sciences invited talk, “How undergraduate biology students come to think like a biologist: insights gained from research-based lab courses,” March 2013.
- 2013 Drexel University Department of Biology invited talk, “How undergraduate biology students come to think like a biologist: insights gained from research-based lab courses,” March 2013.
- 2013 University of Northern Colorado School of Biological Sciences invited talk, “How undergraduate biology students come to think like a biologist: insights gained from research-based lab courses,” February 2013.
- 2013 University of Georgia Division of Biological Sciences invited talk, “How undergraduate biology students come to think like a biologist: insights gained from research-based lab courses,” February 2013.

**45 peer-reviewed invited presentations at the following meetings where I was primary presenter (4 international, 41 national):**

- 2023 Society for the Advancement in Biology Education Research (SABER) West coast regional meeting poster, “Instructors revealing LGBTQ+ identities in academia,” Irvine CA, January 2023.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Coming Out in Academia: Factors that influence instructor decisions to reveal their LGBTQ+ identities to undergraduates,” Minneapolis MN, July 2022.
- 2022 Biology Leadership Conference (BLC) (poster), “Instructor perceptions of undergraduate incivility in online science courses,” Phoenix AZ, April 2022.
- 2022 American Association for the Advancement of Science virtual meeting (symposium moderator), “Evidence for Reducing Perceived Conflict between Religion and Science,” February 2022.
- 2020 Society for Personality and Social Psychology (SPSP) meeting (poster) “Christianity as a concealable stigmatized identity among biology graduate students,” New Orleans LA, February 2020.
- 2019 American Society for Cell Biology meeting (poster), “Factors that predict life sciences student persistence in undergraduate research experiences,” Washington DC, December 2019.
- 2019 Society for Advancement of Chicanos/Hispanics and Native Americans in Science (talk), “Coming on board with evidence-based teaching practices in biology classrooms through the Promoting Active Learning and Mentoring (PALM) Network,” Honolulu HI, October 2019.

- 2019 Society for the Advancement of Biology Education Research (poster), “Testing Religious Cultural Competence in Evolution Education Nationwide,” Minneapolis MN, July 2019.
- 2019 International conference on underpinnings, requirements, and effects of undergraduate research experiences (poster), “The impact of broadly relevant novel discoveries on student project ownership in a traditional lab course turned CURE by using a mutant strain of mice,” Stuttgart Germany, June 2019.
- 2019 Society for Personality and Social Psychology national meeting (poster), “Exploring anxiety in large-enrollment active learning undergraduate classrooms,” Portland OR, February 2019.
- 2018 American Society for Cell Biology meeting (poster), “Same curriculum, different mice, different student outcomes: A comparison of a traditional lab course and a course-based undergraduate research experience,” San Diego CA, December 2018.
- 2018 American Society for Cell Biology meeting (talk), “Identifying the unwritten rules of undergraduate research,” San Diego CA, December 2018.
- 2018 Pixel International Future of Education meeting (talk), “Building inclusive and fair classrooms: spotting sources of bias in undergraduate classrooms,” Florence Italy, June 2018.
- 2018 International Society of Learning Sciences meeting (talk/poster), “Exploring the impact of different types of instructor generated videos on student learning in a university physiology course,” London England, June 2018.
- 2018 Experimental Biology (poster), “A comparison of instructor-generated videos of either an instructor alone or an instructor and a student: Student performance, attitudes, and preferences,” San Diego CA, April 2018.
- 2018 American Educational Research Association (AERA) (talk), “Religiosity and acceptance of evolution predict career choices among college biology students,” New York NY, April 2018.
- 2018 Society for the Advancement of Biology Education Research (SABER) West coast regional meeting (poster), “Identifying the unwritten rules of obtaining undergraduate research experiences,” Irvine CA, January 2018.
- 2017 Society for the Advancement of Biology Education Research (poster), “Who perceives they’re smarter? Exploring the influence of gender, transfer student status, and native English speaking on student academic self-concept in physiology,” Minneapolis MN, July 2017.
- 2017 Higher Education Teaching and Learning (HETL) Conference on Creating Inclusion and Diversity in Higher Education (talk), “Hidden inequities in active learning classrooms: How groups of students are differentially impacted by active learning,” Paisley, Scotland, June 2017.
- 2017 National Association for Research in Science Teaching (NARST) (talk), “Instructional practices of evolution instructors at Christian universities,” San Antonio TX, April 2017.
- 2017 National Association for Research in Science Teaching (NARST) (interactive poster symposium Biology Education Research (BER) at NARST), “Coming out in Life (Sciences): LGBTQIA faculty experiences in Biology,” San Antonio TX, April 2017.

- 2017 American Association for the Advancement in Science (AAAS) (talk), “How can we teach evolution to religious students who may be resistant?” Boston MA, February 2017.
- 2017 Biology Leadership Conference (BLC) (poster), “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Tucson AZ, February 2017.
- 2017 Society for the Advancement of Biology Education Research (SABER) West coast regional meeting (talk), “BioCore Guide: A tool to interpret the core concepts of Vision and Change for general biology majors,” Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research (SABER) West coast regional meeting (workshop), “Building inclusive and fair classrooms: Spotting sources of bias in biology classrooms,” Irvine CA, January 2017.
- 2016 American Society for Cell Biology (poster), “Coming out in class: The challenges and opportunities of active learning for LGBTQIA students in an undergraduate biology class,” San Francisco CA, December 2016.
- 2016 American Society for Microbiology Conference on Undergraduate Education (poster), “A bridge to active learning: A summer bridge program helps students to maximize active learning experiences and the active learning experiences of others,” Bethesda MA, July 2016.
- 2016 Experimental Biology (poster), “Navigating from Vision to Change: Tools to help biology departments align curriculum with the core concepts of biology,” San Diego CA, April 2016.
- 2015 American Society for Cell Biology national meeting (talk), “The development and validation of tools to help biology departments navigate from Vision to Change,” San Diego CA, December 2015.
- 2015 Association for American Colleges and Universities national STEM Education meeting (talk), “Align your curriculum to Vision and Change using the BioCore Guide and BioMaps programmatic assessment,” Seattle WA, November 2015.
- 2015 Gordon Research Conference: Undergraduate Biology Education Research (poster), “A high enrollment course-based undergraduate research experience improves student conceptions of scientific thinking,” Lewiston ME, July 2015.
- 2014 Life Discovery Science Meeting (talk), “BioCore Guide: A tool for interpreting the core concepts of Vision and Change,” San Jose CA, October 2014.
- 2014 Society for the Advancement in Biology Education Research (SABER) national meeting (talk), “BioCore Guide: A tool to interpret the core concepts of Vision and Change for general biology majors,” Minneapolis MN, July 2014.
- 2014 Experimental Biology national meeting (talk), “Building a learning progression of undergraduate students’ conceptions of two important aspects of experimental design: sample size and repetition of experiments,” San Diego CA, April 2014.
- 2014 Experimental Biology national meeting (poster), “BioCore Guide: an interpretation of the core concepts of vision and change for general biology majors San Diego CA,” April 2014.



- 2014 Course-based Undergraduate Research Experiences Network (CUREnet) national meeting (workshop), “Faculty perspectives on developing course-based undergraduate research experiences,” Cold Spring Harbor Labs NY, April 2014.
- 2013 Vision and Change: Chronicling Change Meeting (poster), “Navigating from Vision to Change: Curriculum assessment in University of Washington’s Department of Biology,” Washington DC, August 2013.
- 2013 American Society for Biochemistry and Molecular Biology: Student-centered Education in the Molecular Life Sciences Meeting (poster), “Navigating from Vision to Change: Curriculum assessment in University of Washington’s Department of Biology,” Seattle WA, July 2013.
- 2013 Society for the Advancement of Biology Education Research (SABER) Meeting (talk), “In-class activities on experimental design reveal undergraduate students’ conceptions of sample size and repetition of experiments,” Minneapolis MN, July 2013.
- 2013 Society for the Advancement of Biology Education Research (SABER) Meeting (poster), “Navigating from Vision to Change: Curriculum assessment in University of Washington’s Department of Biology,” Minneapolis MN, July 2013.
- 2012 American Society for Cell Biology (ASCB) Meeting (poster), “Integrating teaching and research in a research-based introductory biology laboratory curriculum: results of a three-year comparison evaluation,” San Francisco CA, December 2012.
- 2012 Society for the Advancement of Biology Education Research (SABER) Meeting (poster), “The impact of a writing-intensive course on developing undergraduate science students’ abilities to read primary scientific papers and communicate science,” Minneapolis MN, July 2012.
- 2012 American Society for Microbiology Conference for Undergraduate Educators Meeting (poster), “Integrating teaching and research in a research-based introductory biology laboratory curriculum: results of a three-year comparison evaluation,” San Mateo CA, June 2012.
- 2011 Society for the Advancement of Biology Education Research (SABER) Meeting (poster), “Integrating teaching and research in an inquiry-based curriculum positively impacts student attitudes towards research,” Minneapolis MN, July 2011.
- 2011 National Science Teachers Association (NSTA) Meeting (talk), “Exploring the impact of cookbook and authentic research-based undergraduate biology lab courses,” San Francisco CA, March 2011.

**306 peer-reviewed invited presentations on my work with a trainee as a primary presenter at the following venues (10 international, 242 national, 54 at ASU):**

- 2023 Society for the Advancement in Biology Education Research (SABER) West talk, “Christian Student Experiences During Peer Interactions in Undergraduate Biology Courses,” Baylee Edwards, Irvine CA, January 2023.
- 2023 Society for the Advancement in Biology Education Research (SABER) West talk, “Perspectives from undergraduate life sciences instructors: Are we equipped to effectively accommodate students with disabilities in our classrooms?,” Emma Goodwin, Irvine CA, January 2023.

- 2023 Society for the Advancement in Biology Education Research (SABER) West poster, “The positive impact of an instructor revealing depression to undergraduates in a large-enrollment physiology course,” Nolina Doud, Irvine CA, January 2023.
- 2023 Society for the Advancement in Biology Education Research (SABER) West poster, “How do different personal identities impact the experiences of undergraduate STEM students with disabilities?,” Emma Goodwin, Irvine CA, January 2023.
- 2023 Society for the Advancement in Biology Education Research (SABER) West poster, “Defining Acceptance of Evolution: A Delphi Study,” Taya Misheva, Irvine CA, January 2023.
- 2023 Society for the Advancement in Biology Education Research (SABER) West poster, “How do different personal identities impact the experiences of undergraduate STEM students with disabilities?,” Emma Goodwin, Irvine CA, January 2023.
- 2022 ASU Natural Sciences Inclusion Summit poster, “The dual benefits of a science education CURE: Developing research skills for community college transfer students while advancing the research on undergraduate research experiences,” Emma Goodwin, Tempe AZ, November 2022.
- 2022 ASU Natural Sciences Inclusion Summit poster, “Coming out in academia: Factors that influence instructor decisions to reveal their LGBTQ+ identities to undergraduates,” Carly Busch, Tempe AZ, November 2022.
- 2022 ASU Natural Sciences Inclusion Summit poster, “Can I write about my mental health on my medical school application? Medical school admissions committees’ potential biases regarding mental health conditions,” Anna Abraham, Tempe AZ, November 2022.
- 2022 ASU Natural Sciences Inclusion Summit poster, “Measuring Student Acceptance of Evolution – Findings from an RCN-UBE Meeting,” Taya Misheva, Tempe AZ, November 2022.
- 2022 ASU Natural Sciences Inclusion Summit poster, “Christian student experiences during peer interactions in undergraduate biology courses,” Baylee Edwards, Tempe AZ, November 2022.
- 2022 ASU Natural Sciences Inclusion Summit poster, “Coming out in academia: Factors that influence instructor decisions to reveal their LGBTQ+ identities to undergraduates,” Carly Busch, Tempe AZ, November 2022.
- 2022 ASU Natural Sciences Inclusion Summit talk, “Inclusion is not about just gender and race: The diversity of identities that are important to consider,” Carly Busch, Tempe AZ, November 2022.
- 2022 Research on STEM Education (ROSE) Network Seminar Series invited virtual seminar, “Disclosure decisions: Exploring the concealable stigmatized identities of science instructors,” Carly Busch, October 2022.
- 2022 SACNAS oral presentation, “Using course-based undergraduate research experiences to diversify STEM,” Emma Goodwin, San Juan Puerto Rico, October 2022
- 2022 Arizona State University Research, Reflect, and RISE workshop, “How can we make undergraduate science spaces more inclusive for students with disabilities?,” Emma Goodwin, Tempe AZ, October 2022

- 2022 Middle Tennessee State University - Mathematics and Science Education Research Seminar Series invited talk, “Challenges and opportunities for students with disabilities in evolving STEM learning environments: active learning, online instruction, and undergraduate research,” Logan Gin, Murfreesboro TN, October 2022.
- 2022 National Science Foundation S-STEM meeting poster, “The dual benefits of a science education CURE: Developing research skills for community college transfer students while advancing the research on undergraduate research experiences,” Emma Goodwin, Washington DC, September 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) short talk, “Exploring the Validity of Evolution Acceptance Measures Using Cognitive Interviews,” Taya Misheva, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Are high-impact practices accessible for all? Exploring the factors impacting engagement in beneficial educational experiences for students with disabilities,” Emma Goodwin, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Is education with religious cultural competence delivered online as effective as when it is delivered in-person?,” Alexa Summerstill, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Patterns for managing conflict between religion and evolution among Muslim undergraduate biology students,” Rahmi Aini, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “The scientific rules, roles, and values that life sciences graduate students want to see upheld by undergraduate researchers,” Carly Busch, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Navigating academic biology as an LGBTQ+ Ph.D. student: learning, teaching, doing research,” Emma Goodwin, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Who is represented in the research on undergraduate research experiences? A review of literature on research apprenticeships and CUREs in the natural sciences,” Emma Goodwin, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Can I write about my mental health on my medical school application? Medical school admissions committees’ potential biases towards mental health conditions,” Anna Abraham, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Christian student experiences during peer interactions in undergraduate biology courses,” Minneapolis MN, Baylee Edwards July 2022.

- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Students are reluctant to label depression as a disability despite experiencing limitations in college science courses,” Tala Araghi, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) poster, “Measuring Student Acceptance of Evolution – Findings from an RCN-UBE Meeting,” Taya Misheva, Minneapolis MN, July 2022.
- 2022 Society for the Advancement in Biology Education Research (SABER) short talk, “Disclosure decisions: Exploring the concealable stigmatized identities of science and engineering instructors,” Carly Busch, Minneapolis MN, July 2022.
- 2022 American Society for Microbiology Conference for Undergraduate Educators (ASM CUE) virtual talk, “Teaching About Research through a Biology Education Course-based Undergraduate Research Experience,” Emma Goodwin, July 2022.
- 2022 American Society for Microbiology Conference for Undergraduate Educators (ASM CUE) virtual poster, “Exploring Engagement in High-Impact Educational Practices for Students with Disabilities,” Emma Goodwin, July 2022.
- 2022 University of British Columbia Skylight Speaker Series virtual talk: Teaching and learning in science through the lens of indigeneity, equity, diversity, and inclusion, “Challenges and opportunities for students with disabilities in evolving learning environments: active learning, online instruction, and undergraduate research,” Logan Gin, June 2022.
- 2022 ASU Barrett Honors Research Symposium poster, “Medical school admissions committee members’ potential biases towards mental health conditions,” Anna Abraham, Tempe AZ, April 2022.
- 2022 ASU Barrett Honors Research Symposium poster, “Are high impact practices accessible for students with disabilities,” Danielle Pais, Tempe AZ, April 2022.
- 2022 University of Washington Biology Education Research Group virtual talk, “Disclosure decisions: Exploring the concealable stigmatized identities of science and engineering instructors,” Carly Busch, April 2022.
- 2022 Experimental Biology poster, “Instructor perceptions of student incivility in the online undergraduate science classroom,” Anna Abraham, Philadelphia PA, April 2022.
- 2022 ASU School of Life Sciences Graduate Symposia talk, “Coming out to the class: Students benefit from an instructor revealing her LGBTQ+ identity in a large-enrollment biology course,” Carly Busch, Tempe AZ, March 2022.
- 2022 American Association for the Advancement of Science (AAAS) virtual poster, “Coming Out To The Class: Students Benefit When Instructor Reveals Her LGBTQ+ Identity,” Carly Busch, February 2022.
- 2022 American Association for the Advancement of Science (AAAS) virtual poster, “Instructor perceptions of undergraduate incivility in online science courses,” Anna Abraham, February 2022.

- 2022 American Association for the Advancement of Science (AAAS) virtual poster, “Undergraduate perceptions of bioethics,” Baylee Edwards, February 2022.
- 2022 American Association for the Advancement of Science (AAAS) virtual poster, “Navigating academic biology as a LGBTQ+ graduate student: Learning, teaching, and doing research,” Sam Maas, February 2022.
- 2022 Research on STEM Education (ROSE) Network Seminar Series invited virtual seminar, “Challenges and opportunities for students with disabilities in evolving STEM learning environments: active learning, online instruction, and undergraduate research,” Logan Gin, February 2022.
- 2022 East Carolina University Department of Biology Seminar series virtual seminar, “Challenges and opportunities for students with disabilities in evolving learning environments: active learning, online instruction, and undergraduate research,” Logan Gin, February 2022.
- 2022 Northern Arizona University Department of Chemistry and Biochemistry invited virtual seminar, “Challenges and opportunities for students with disabilities in evolving STEM learning environments: active learning, online instruction, and undergraduate research,” Logan Gin, January 2022.
- 2022 Society for Integrative and Comparative Biology (SICB) virtual talk, “At-home dissections improve the anatomical self-efficacy of undergraduate students in a fully online biology course,” Jacob Youngblood and Emily Webb, January 2022.
- 2022 Society for Integrative and Comparative Biology (SICB) talk, “Challenges and opportunities for students with disabilities in life science undergraduate research experiences,” Logan Gin, Phoenix AZ, January 2022.
- 2022 Society for Integrative and Comparative Biology (SICB) talk, “Coming out to the class: Students benefit from an instructor revealing her LGBTQ+ identity in a large-enrollment biology course,” Carly Busch, Phoenix AZ, Phoenix AZ, January 2022.
- 2021 Brown University Sheridan Center for Teaching and Learning virtual workshop, “Creating inclusive STEM learning environments for undergraduates with disabilities: From teaching to research,” Logan Gin, December 2021.
- 2021 American Society for Cell Biology (ASCB) virtual talk, “Challenges and opportunities for students with disabilities in undergraduate research,” Logan Gin, December 2021
- 2021 American Society for Cell Biology (ASCB) virtual poster, “Coming Out to the Class: Students Benefit from an Instructor Revealing her LGBTQ+ Identity in a Large-enrollment Biology Course,” Busch CA, December 2021.
- 2021 University of California San Diego Science of Teaching Seminar series invited virtual talk, “Challenges and opportunities for students with disabilities in evolving learning environments: active learning, online instruction, and undergraduate research,” Logan Gin, November 2021.
- 2021 National Association of Biology Teachers national meeting poster, “The impacts of using personalized emails from the instructor in an online upper-level physiology course,” Erika Nadile, Atlanta GA, November 2021

- 2021 Southwest BioSci conference poster, “Instructor perceptions of student incivility in the online undergraduate science classroom,” Anna Abraham, October 2021.
- 2021 Southwest BioSci conference poster, “New online accommodations are not enough: Mismatch between student needs and support for students with disabilities,” Danielle Pais, October 2021.
- 2021 Southwest BioSci conference poster, “Student perceptions of personalized emails with their names in an upper-level online biology course,” Erika Nadile, October 2021.
- 2021 Louis Stokes Midwest Regional Center of Excellence conference virtual talk and poster, “New online accommodations are not enough: Mismatch between student needs and support for students with disabilities during COVID-19,” Danielle Pais, October 2021.
- 2021 Out in Science, Technology, Engineering, and Mathematics (oSTEM) virtual talk, “Navigating academic biology as an LGBTQ+ Ph.D. student: learning, teaching, and doing research,” Nick Wiesenthal, October 2021.
- 2021 Out in Science, Technology, Engineering, and Mathematics (oSTEM) virtual talk, “Coming Out to the Class: Students Benefit from an Instructor Revealing her LGBTQ+ Identity in a Large-enrollment Biology Course,” Carly Busch, October 2021.
- 2021 Online with Life Sciences Education (LSE) virtual discussion speaker, “Challenges and opportunities for students with disabilities resulting from the rapid transition to online course delivery during COVID-19,” Logan Gin, September 2021.
- 2021 Inclusion in Science Learning a New Direction (ISLANDS) virtual talk, “Students with disabilities in undergraduate research: Challenges and opportunities,” Logan Gin, September 2021.
- 2021 American Association of Physics Teachers (AAPT) virtual summer meeting talk, “Challenges and opportunities for students with disabilities resulting from the rapid transition to online course delivery during COVID-19,” Logan Gin, August 2021.
- 2021 American Chemical Society (ACS) virtual talk, “Coming out to the class: Students benefit from an instructor revealing LGBTQ+ identity in a large-enrollment biology course,” Carly Busch, August 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual plenary long talk, “Why we need to consider religious identity and build religious cultural competence in biology education,” Liz Barnes, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual poster, “Instructor perceptions of student incivility in the online undergraduate science classroom during the COVID-19 pandemic,” Anna Abraham, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual poster, “An exploration across institution types of undergraduate life sciences student decisions to stay in or leave an academic-year research experience,” Logan Gin, July 2021.

- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual poster, “To what extent do science and engineering instructors reveal or conceal potentially invisible identities to students?,” Carly Busch, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual poster, “Student perceptions of personalized emails with their names in an upper-level online biology course,” Erika Nadile, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual talk, “Coming Out to the Class: Students Benefit from Instructor Revealing LGBTQ+ Identity in a Large-enrollment Biology Course,” Carly Busch, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual talk, “Introducing the Measure of Acceptance of the Theory of Evolution 2.0 (MATE 2.0),” Taya Mischeva, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual talk, “Challenges and opportunities for students with disabilities in life science undergraduate research experiences,” Logan Gin, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual talk, “High stakes exams exacerbate disparities in scores between students across the lines of gender, race/ethnicity, and socioeconomic class in introductory biology courses,” K. Supriya, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual talk, “Professors' Professionalization Networks: A Systems-level Roadmap for Change,” Dan Grunspan, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual poster, “Undergraduate Perceptions of Bioethics,” Baylee Edwards, July 2021.
- 2021 Society for the Advancement in Biology Education Research (SABER) national meeting virtual poster, “Christianity as a Concealable Stigmatized Identity (CSI) among Biology Graduate Students,” Samantha Maas, July 2021.
- 2021 Networks 2021 virtual talk, “Studying Professors Professionalization Networks for Pedagogical Change,” Dan Grunspan, July 2021.
- 2021 American Society for Microbiology Conference for Undergraduate Educators (ASM-CUE) virtual talk, “Creating more inclusive biology learning environments for LGBTQ+ individuals,” Carly Busch, June 2021.
- 2021 American Society for Microbiology Conference for Undergraduate Educators (ASM-CUE) virtual poster, “Student Perceptions of Personalized Emails With Their Names in an Upper-Level Online Biology Course,” Erika Nadile, June 2021.
- 2021 Evolution 2021 virtual talk, “The Evolution Perceptions and Religious Backgrounds of Black and Hispanic Students Nationwide,” Liz Barnes, June 2021.

- 2021 Scientific Queeries University of Alberta, Edmonton, Canada virtual talk, “Coming Out to the Class: Students Benefit from an Instructor Revealing her LGBTQ+ Identity in a Large-enrollment Biology Course,” Carly Busch, June 2021
- 2021 Experimental Biology virtual talk and poster, “Students Benefit from Instructor Revealing LGBTQ+ Identity in an Upper-level Physiology Course,” Carly Busch, April 2021.
- 2021 Arizona State University School of Life Sciences Undergraduate Research Symposium virtual talk, “Factors that influence life sciences student persistence in undergraduate research across institution types,” Rachel Campos, April 2021.
- 2021 Arizona State University School of Life Sciences Undergraduate Research Symposium virtual talk, “Instructor perceptions of student incivility in the online undergraduate science classroom,” Anna Abraham, April 2021.
- 2021 Duke University Biology Department's Inclusion, Diversity, Equity, and Anti-Racism (IDEA) Graduate Committee invited virtual seminar, “Challenges for students with disabilities in active learning, undergraduate research, and the transition to online instruction,” Logan Gin, April 2021.
- 2021 University of Washington Biology Teaching and Learning group invited virtual seminar, “Challenges for students with disabilities in active learning and the transition to online,” Logan Gin, February 2021.
- 2021 American Association for the Advancement in Science annual meeting (AAAS) virtual poster, “Perceptions of Evolution Among Muslim Undergraduate Biology Students in the United States,” Julie Roberts, February 2021.
- 2021 American Association for the Advancement in Science annual meeting (AAAS) virtual poster, “Where do instructors come from? An analysis of influential institutions on current and future faculty,” Anna Abrahams, February 2021.
- 2021 American Association for the Advancement in Science annual meeting (AAAS) virtual poster, “Call on me! Undergraduates’ perceptions of voluntarily asking questions in front of large-enrollment science classes,” Erika Nadile, February 2021.
- 2021 American Association for the Advancement in Science annual meeting (AAAS) virtual poster, “Examining the effect of variation in features of exam questions from introductory biology instructors,” Puja Chetri, February 2021.
- 2021 American Association for the Advancement in Science annual meeting (AAAS) virtual poster, “Uncovering Validity Issues with the Measure of Acceptance of the Theory of Evolution (MATE) using Student Voices,” Taya Mischeva, February 2021.
- 2021 Washington State University School of Molecular Biosciences invited virtual seminar, “Challenges for students with disabilities in active learning, undergraduate research, and the transition to online,” Logan Gin, January 2021.
- 2021 SABER West virtual talk, “The effect of optional exam retakes on student performance in introductory biology,” K. Supriya, January 2021.



- 2021 SABER West virtual talk, “Disability and COVID-19: Challenges and opportunities as a result of the rapid transition to online course delivery for students with disabilities,” Logan Gin, January 2021.
- 2021 SABER West virtual talk, “Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students,” Liz Barnes, January 2021.
- 2020 American Society for Cell Biology annual meeting (ASCB) virtual poster, “Perceptions of Evolution Among Muslim Undergraduate Biology Students in the United States,” Julie Roberts, December 2020.
- 2020 American Society for Cell Biology annual meeting (ASCB) virtual poster, “Exploring Christianity as a Concealable Stigmatized Identity (CSI) in graduate biology programs,” Liz Barnes, December 2020.
- 2020 National Association of Biology Teachers (NABT) virtual talk, “A nationwide study exploring the religious backgrounds and evolution perceptions of Black and Hispanic biology students,” Liz Barnes, November 2020.
- 2020 National Association of Biology Teachers (NABT) virtual poster, “Undergraduate Perceptions of Bioethics Topics: A Pilot Study,” Baylee Edwards, November 2020.
- 2020 National Association of Biology Teachers (NABT) virtual poster, “The effect of optional exam retakes on student performance in introductory biology,” K. Supriya, November 2020.
- 2020 National Association of Biology Teachers (NABT) virtual poster, “Where do instructors come from? An analysis of influential institutions on current and future faculty,” Anna Abrahams, November 2020.
- 2020 National Association of Biology Teachers (NABT) virtual poster, “Call on me! Undergraduates’ perceptions of voluntarily asking questions in front of large-enrollment science classes,” Erika Nadile, November 2020.
- 2020 ASU BioSci conference virtual poster, “Call on me! Undergraduates’ perceptions of voluntarily asking questions in front of large-enrollment science classes,” Erika Nadile, October 2020.
- 2020 ASU BioSci conference virtual talk, “Accessible active learning: To what extent is active learning inclusive for science undergraduates with disabilities?,” Logan Gin, October 2020.
- 2020 ASU BioSci conference virtual talk, “Uncovering Validity Issues with the Measure of Acceptance of the Theory of Evolution (MATE) using Student Voices,” Taya Mischeva, October 2020.
- 2020 ASU Institute for Social Science Research virtual poster, “Factors that predict life sciences student persistence in undergraduate research experiences across institution types,” Logan Gin, October 2020.
- 2020 Geological Society of America national meeting virtual talk, “Accessible active learning: To what extent is active learning inclusive for science undergraduates with disabilities?,” Logan Gin, October 2020.

- 2020 Society for the Advancement of Biology Education Research virtual poster, “Where do instructors come from? An analysis of influential institutions on current and future faculty,” Anna Abraham, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Beyond common misconceptions: naive ideas about human evolution and diet among nutrition students,” Sara Etebari, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Uncovering Validity Issues with the Measure of Acceptance of the Theory of Evolution,” Taya Mischeva, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Factors that predict life sciences student persistence in undergraduate research experiences across institution types,” Logan Gin, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “The effect of optional exam retakes on student performance in introductory biology,” K. Supriya, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Evidence-Based Resources for Evolutionary Medicine Education,” Dan Grunspan, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Testing Religious Cultural Competence in Evolution Education Nationwide,” Liz Barnes, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Perceptions of Evolution among Muslim Undergraduate Biology Students in the United States,” Julie Roberts, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Exploring the Leaky Christian Pipeline in Academic Biology,” Sam Maas, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Comparing item features of exams from introductory biology instructors,” Kaela Villegas, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Fear of negative evaluation and student anxiety in community college active learning science courses,” Virginia Downing, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “It’s in the syllabus... or is it? How syllabi can serve as tools for creating inclusive classrooms,” Rachel Scott, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual talk, “Christianity as a Concealable Stigmatized Identity (CSI) in graduate biology programs,” Liz Barnes, Virtual conference, July 2020.

- 2020 Society for the Advancement of Biology Education Research virtual talk, “Accessible active learning: To what extent is active learning inclusive for science undergraduates with disabilities?,” Logan Gin, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Call on me! Undergraduates’ perceptions of voluntarily asking questions in front of large-enrollment science classes,” Erika Nadile, Virtual conference, July 2020.
- 2020 Society for the Advancement of Biology Education Research virtual poster, “Exploring student depression in undergraduate research experiences,” Katey Cooper, Virtual conference, July 2020.
- 2020 Australasian Science Education Research Association (ASERA) virtual poster, “Call on me! Undergraduates’ perceptions of voluntarily asking questions in front of large-enrollment science classes,” Erika Nadile, Virtual conference, June 2020.
- 2020 ASU Undergraduate Research Symposium virtual talk, “Comparing item features of exams from introductory biology instructors,” Kaela Villegas and Brittany Rolfe, Tempe AZ, April 2020.
- 2020 ASU Undergraduate Research Symposium virtual talk, “Where do instructors come from? An analysis of influential institutions on current and future faculty,” Anna Abraham, Tempe AZ, April 2020.
- 2020 American Educational Research Association (AERA) virtual talk, “Fear of negative evaluation and student anxiety in community college active learning science courses.” Virginia Downing, San Francisco CA, April 2020.
- 2020 University of Alabama Birmingham invited talk, “Factors that predict student persistence in research: From lab environment to mental health,” Katelyn Cooper, Birmingham, AL, March 2020.
- 2020 American Association for the Advancement in Science (AAAS) national meeting poster, “Christianity as a concealable stigmatized identity among biology graduate students,” Samantha Maas, Washington DC, February 2020.
- 2020 Middle Tennessee State University invited talk, “Religious cultural competence in evolution education (ReCCEE),” Liz Barnes, Murfreesboro TN, February 2020.
- 2020 University of California San Diego Division of Biological Sciences invited talk, “Toward more inclusive active learning classrooms: Identifying inequities and possible underlying mechanisms,” Katelyn Cooper, San Diego CA, February 2020.
- 2020 Building The Next Generation of Academic Physicians Conference poster, “Diagnosing differences in preparing for med school between students in online and in-person biology degree programs” Logan Gin, Phoenix AZ, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, “Where do instructors come from? An analysis of influential institutions on current and future faculty.,” Dan Grunspan, Irvine CA, January 2020.

- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, "Assessing bias in instructor exams in introductory biology college courses," K. Supriya, Irvine CA, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, "To what extent have Disability Resource Centers evolved to accommodate the challenges of active learning in large enrollment STEM courses?," Frankie Guerrero, Irvine CA, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting talk, "Factors that predict life sciences student persistence in undergraduate research experiences," Logan Gin, Irvine CA, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, "Fear of negative evaluation and student anxiety in community college active learning science courses," Logan Gin, Irvine CA, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, "Don't joke about me: The impact of student identity on perception of instructor humor in college science courses," Erika Nadile, Irvine CA, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, "Evidence-Based Resources for Evolutionary Medicine Education," Taya Misheva, Irvine CA, January 2020.
- 2020 Society for the Advancement of Biology Education Research West coast meeting poster, "Exploring Christianity as a Concealable Stigmatized Identity (CSI) among Biology Graduate Students," Samantha Maas, Irvine CA, January 2020.
- 2019 American Association for Cell Biology (ASCB) national meeting poster, "The impact of student research anxiety on undergraduate intention to pursue scientific research," Katey Cooper, Washington DC, December 2019.
- 2019 Auburn University Department of Biological Sciences invited talk, "Toward more inclusive active learning classrooms: Identifying inequities and possible underlying mechanisms," Katelyn Cooper, Auburn, AL, November 2019.
- 2019 National Association for Biology Teachers national meeting poster, "The unwritten rules of undergraduate research," Jacquie Cala, Chicago IL, November 2019.
- 2019 National Association for Biology Teachers national meeting talk, "Fear of negative evaluation and student anxiety in community college active learning science courses," Jacquie Cala, Chicago IL, November 2019.
- 2019 American Association for Medical Colleges Annual Meeting poster, "Diagnosing differences in preparing for med school between students in online and in-person biology degree programs," Logan Gin, Phoenix AZ, November 2019.
- 2019 Southwestern Association of Biological Anthropologists poster, "A pilot study testing Religious Cultural Competence in Evolution Education Nationwide (ReCCEE)," Liz Barnes, Tempe AZ, November 2019.

- 2019 Southwestern Association of Biological Anthropologists poster, “A call to use Religious Cultural Competence in Evolution Education (ReCCEE),” Liz Barnes, Tempe AZ, November 2019.
- 2019 Southwestern Association of Biological Anthropologists poster, “Testing the Effect of Human Examples When Teaching Evolution,” Dan Grunspan, Tempe AZ, November 2019.
- 2019 Southwestern Association of Biological Anthropologists poster, “Evidence-Based Resources for Evolutionary Medicine Education,” Taya Misheva, Tempe AZ, November 2019.
- 2019 Southwestern Association of Biological Anthropologists poster, “Exploring Christianity as a Concealable Stigmatized Identity (CSI) among Science Graduate Students,” Samantha Maas, Tempe AZ, November 2019.
- 2019 BioSci Southwest Symposium poster, “Factors that predict biological sciences student persistence in undergraduate research experiences,” Rachel Scott and Diana Ramirez, Tempe AZ, November 2019.
- 2019 BioSci Southwest Symposium poster, “Don’t joke about me: The impact of student identity on perception of instructor humor in college science courses,” Erika Nadile, Tempe AZ, November 2019.
- 2019 BioSci Southwest Symposium talk, “Diagnosing differences in what undergraduates in ASU’s fully online and an in-person biology degree program know and do regarding medical school admission,” Logan Gin, Tempe AZ, November 2019.
- 2019 University of Central Florida Department of Chemistry invited talk, “Factors that Predict Student Persistence in Research: From Lab Environment to Mental Health,” Katelyn Cooper, Orlando FL, October 2019.
- 2019 Geological Society of America national meeting talk, “Leaving research: Factors that influence science student persistence in undergraduate research,” Logan Gin, Phoenix AZ, September 2019.
- 2019 Geological Society of America national meeting talk, “Using institutional analysis of grades to assess equity of outcomes in online and in-person science courses,” Chris Mead, Phoenix AZ, September 2019.
- 2019 National Science Foundation S-STEM meeting poster, “Arizona State University’s LEAP Scholars program,” Carolyn Clark, Washington DC, September 2019.
- 2019 International Society for Evolution, Medicine, and Public Health talk, “The need for a learning framework for education about evolution and medicine,” Dan Grunspan, Zurich Switzerland, August 2019.
- 2019 Society for the Advancement of Biology Education Research talk, “The impact of student research anxiety on undergraduate biology students’ intentions to pursue a scientific research career,” Katey Cooper, Minneapolis MN, July 2019.

- 2019 Society for the Advancement of Biology Education Research poster, “Fear of negative evaluation: A novel construct underlying student anxiety in active learning college science courses,” Katey Cooper, Minneapolis MN, July 2019.
- 2019 Society for the Advancement of Biology Education Research talk, “Diagnosing differences in what undergraduates in a fully online and in an in-person biology degree program know and do regarding medical school admission,” Logan Gin, Minneapolis MN, July 2019.
- 2019 Society for the Advancement of Biology Education Research poster, “Leaving Research: Factors that impact a student leaving an academic year research experience,” Logan Gin, Minneapolis MN, July 2019.
- 2019 Society for the Advancement of Biology Education Research talk, “Testing the Effect of Human Examples When Teaching Evolution,” Dan Grunspan, Minneapolis MN, July 2019.
- 2019 Society for the Advancement of Biology Education Research poster, “Developing Conceptual Frameworks in Evolutionary Medicine,” Dan Grunspan, Minneapolis MN, July 2019.
- 2019 Society for the Advancement of Biology Education Research poster, “Different evolution acceptance instruments lead to different research findings,” Hayley Dunlop, Minneapolis MN, July 2019.
- 2019 International Research Network for the Study of Science and Belief in Society talk, “Religious Students' Definitions of Evolution Predict their Acceptance,” Liz Barnes, Birmingham England, July 2019.
- 2019 Undergraduate Biology Education Research Gordon Research Conference poster, “Fear of negative evaluation: A novel construct underlying student anxiety in active learning college science courses,” Katey Cooper, Lewiston ME, June 2019.
- 2019 Undergraduate Biology Education Research Gordon Research Conference poster, “Leaving Research: Factors that impact a student leaving an academic year research experience,” Logan Gin, Lewiston ME, June 2019.
- 2019 Undergraduate Biology Education Research Gordon Research Seminar talk, “Learning from a Discipline-Based Education Research Course-based Research Experience: The impact of research anxiety on biology undergraduates' intentions to pursue a science research career,” Katey Cooper, Lewiston ME, June 2019.
- 2019 Undergraduate Biology Education Research Gordon Research Seminar poster, “Diagnosing differences in what undergraduates in a fully online and in an in-person biology degree program know and do regarding medical school admission,” Logan Gin, Lewiston ME, June 2019.
- 2019 Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) summer conference poster, “Towards Inclusive Excellence: Comparative analysis of In-person and Online STEM course grades,” Chris Mead, Ann Arbor MI, June 2019.
- 2019 Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) summer conference poster, “Leaving Research: Factors that impact a student leaving an academic year research experience,” Logan Gin, Ann Arbor MI, June 2019.

- 2019 Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) summer conference poster, “To what extent have Disability Resources Centers evolved to accommodate the challenges of active learning?,” Logan Gin, Ann Arbor MI, June 2019.
- 2019 Sloan Equity and Inclusion in STEM Introductory Courses (SEISMIC) summer conference poster, “Fear of negative evaluation: A novel construct underlying student anxiety in active learning college science courses,” Logan Gin, Ann Arbor MI, June 2019.
- 2019 International conference on underpinnings, requirements, and effects of undergraduate research experiences poster, “Leaving Research: Factors that impact a student leaving an academic year research experience”, Katey Cooper, Stuttgart Germany, June 2019.
- 2019 ASU Undergraduate Research Symposium poster, “Different evolution acceptance instruments lead to different research findings,” Hayley Dunlop, Tempe AZ, March 2019.
- 2019 University of Central Florida Department of Biology invited presentation talk, “Religious cultural competence in evolution education (ReCCEE),” Liz Barnes, Orlando FL, March 2019.
- 2019 University of Central Florida Department of Biology invited presentation talk, “Gender differences in student perception of intelligence and cultural evolutionary perspectives on faculty pedagogical practice,” Dan Grunspan, Orlando FL, March 2019.
- 2019 University of Central Florida Department of Biology invited presentation talk, “Creating more inclusive large-enrollment active learning undergraduate biology classrooms,” Katey Cooper, Orlando FL, March 2019.
- 2019 California State University, Sacramento invited presentation talk, Religious cultural competence in evolution education (ReCCEE),” Liz Barnes, Sacramento CA, March 2019.
- 2019 University of Guelph invited presentation talk, Gender differences in student perception of intelligence and cultural evolutionary perspectives on faculty pedagogical practice,” Dan Grunspan, Guelph Ontario Canada, March 2019.
- 2019 American Association for the Advancement in Science (AAAS) national meeting poster, “Different Instruments Measuring Evolution Acceptance Lead to Varied Research Results,” Hayley Dunlop, Washington DC, February 2019.
- 2019 ASU Teacher’s College Education Research Conference poster, “Online with Career Goals? Exploring student decisions to enroll in online biology degree programs and lab courses,” Logan Gin, Tempe AZ, February 2019.
- 2019 UC Merced invited presentation talk, “Religious cultural competence in evolution education (ReCCEE),” Liz Barnes, Merced CA, February 2019.
- 2019 ASU Diversity and Inclusion Science Initiative (DISI) talk, “Maximizing inclusion and questioning excellence: Are online biology degree programs a way to promote inclusive excellence in undergraduate education?,” Logan Gin, Tempe AZ, February 2019.
- 2019 Society for Personality and Social Psychology (SPSP) national meeting poster, “Exploring the impact of student religiosity on faculty perceptions of competence, hireability, and likeability of potential Ph.D. students in Biology,” Liz Barnes, Portland OR, February 2019.

- 2019 Society for the Advancement of Biology Education Research West coast meeting talk, "Religious students' definitions of evolution predict their acceptance," Hayley Dunlop and Liz Barnes, Irvine CA, January 2019.
- 2019 Society for the Advancement of Biology Education Research West coast meeting poster, "Exploring the impact of student religiosity on faculty perceptions of competence, hireability, and likeability of potential Ph.D. students in Biology," Liz Barnes, Irvine CA, January 2019.
- 2019 Society for the Advancement of Biology Education Research West coast meeting poster, "Leaving research: factors that impact a student learning an academic year research experience," Katey Cooper, Irvine CA, January 2019.
- 2019 Society for the Advancement of Biology Education Research West coast meeting poster, "Factors influencing instructor preferences for how they want students to address them," Jacquie Cala, Irvine CA, January 2019.
- 2019 Society for the Advancement of Biology Education Research West coast meeting talk, "Documenting the unwritten rules of undergraduate research in biology at a large, public research-intensive university," Jacquie Cala and Katey Cooper, Irvine CA, January 2019.
- 2019 Society for the Advancement of Biology Education Research West coast meeting poster, "Different Evolution Acceptance Instruments Lead to Different Research Results," Hayley Dunlop, Irvine CA, January 2019.
- 2019 Western Michigan University invited presentation talk, "Toward more inclusive undergraduate active learning classrooms", Katelyn Cooper, Kalamazoo MI, January 2019
- 2019 Idaho State University invited presentation talk, "Gender differences in student perception of intelligence and cultural evolutionary perspectives on faculty pedagogical practice", Dan Grunspan, Pocatello ID, January 2019.
- 2018 American Society for Cell Biology poster, "The influence of active learning practices on student anxiety in large-enrollment college science classrooms," Katey Cooper, San Diego CA, December 2018.
- 2018 American Society for Cell Biology poster, "Gender differences in student perceptions of instructor humor in college science courses," Katey Cooper, San Diego CA, December 2018.
- 2018 Cultural Evolution Society Conference talk, "The Lecture Machine: A cultural evolutionary model of pedagogy in higher education," Dan Grunspan, Tempe AZ, October 2018.
- 2018 Fresno State University invited presentation talk, "Religious Cultural Competence in Evolution Education, Liz Barnes, Fresno CA, October 2018.
- 2018 Joint Conference on Evolutionary Biology poster, "Core principles of evolutionary medicine," Dan Grunspan, Montpellier France, August 2018.
- 2018 International Society for Evolution, Medicine, and Public Health talk, "The state of evolutionary medicine in undergraduate education at American universities," Dan Grunspan, Park City Utah, August 2018.



- 2018 Society for the Advancement of Biology Education Research poster, “How should I be addressed? Factors influencing instructor preferences for how they want students to address them,” Jacquie Cala, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research talk, “Explaining the dearth of African American students in evolutionary biology as a function of religiosity,” Liz Barnes, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “A course-embedded comparison of instructor-generated videos of either an instructor alone or an instructor and a student,” Katey Cooper, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “To be funny or not to be funny: Gender differences in student perceptions of instructor humor in college science courses,” Katey Cooper, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “Core Principles of Evolutionary Medicine,” Dan Grunspan, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “Coming out to the class: Identifying factors that influence college biology instructor decisions about whether to reveal their LGBTQIA identity in class,” Katey Cooper, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “Exploring the impact of student religiosity on faculty perceptions of competence, hireability, and likeability of potential PhD students in biology,” Liz Barnes, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “Atheistic definitions of acceptance of evolution exacerbate rejection of evolution among religious students,” Hayley Dunlop, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “Pedagogical change in academia: A cultural evolutionary model,” Dan Grunspan, Minneapolis MN, July 2018.
- 2018 Society for the Advancement of Biology Education Research poster, “Online with career goals? Exploring student decisions to enroll in online biology degree programs and online lab courses,” Logan Gin and Evan Brus, Minneapolis MN, July 2018.
- 2018 Pixel International Future of Education meeting talk, “Comparison of an immunology cookbook lab course and a course-based undergraduate research experience,” Katey Cooper, Florence, Italy, June 2018.
- 2018 Experimental Biology poster, “How do astrophysicists organize a party? Their wives planet: Gender differences in student perceptions of instructor humor in college science classrooms,” Taija Hendrix, San Diego CA, April 2018.
- 2018 Experimental Biology poster, “LEAP into Research: A program to help transfer students get involved in research,” Katey Cooper, San Diego CA, April 2018.
- 2018 Experimental Biology poster, “Evidence-based resources for evolutionary medicine,” Michelle Stephens, San Diego CA, April 2018.

- 2018 Experimental Biology poster, “Who perceives they’re smarter? Exploring the influence of gender, transfer student status, and native English speaking on student academic self-concept in physiology,” Katey Cooper, San Diego CA, April 2018.
- 2018 ASU Undergraduate Research Symposium poster, “How do astrophysicists organize a party? Their wives planet: Gender differences in student perceptions of instructor humor in college science classrooms,” Taija Hendrix, Tempe AZ, April 2018.
- 2018 ASU Undergraduate Research Symposium poster, “Can a six-minute introduction to an evolution module reduce students’ level of perceived conflict between evolution and religion?,” Jasmine Truong, Tempe AZ, April 2018.
- 2018 ASU Undergraduate Research Symposium poster, “The survey matters: instructors using different surveys to measure acceptance of evolution may be reaching different conclusions about their students,” Hayley Dunlop, Tempe AZ, April 2018.
- 2018 American Educational Research Association (AERA) talk, “Atheistic definitions of evolution exacerbate rejection of evolution among religious students,” Liz Barnes, New York NY, April 2018.
- 2018 ASU Diversity and Inclusion Science Initiative talk, “From conflict to common ground: A call to use cultural competence in evolution education,” Liz Barnes, Tempe, AZ, February 2018.
- 2018 ASU Diversity and Inclusion Science Initiative talk, “Student characteristics that influence academic self-concept,” Katey Cooper, Tempe, AZ, February 2018.
- 2018 ASU Diversity and Inclusion Science Initiative talk, “To be funny or not to be funny: Student perceptions of instructor use of humor in college science classrooms,” Katey Cooper and Taija Hendrix, Tempe, AZ, February 2018.
- 2018 ASU Diversity and Inclusion Science Initiative talk, “Learning anxiously: How to make active learning less anxiety-inducing,” Katey Cooper and Virginia Downing, Tempe, AZ, February 2018.
- 2018 ASU Diversity and Inclusion Science Initiative poster, “The unwritten rules of undergraduate research,” Katey Cooper, Tempe, AZ, February 2018.
- 2018 Society for the Advancement of Biology Education Research West coast meeting talk, “To be funny or not to be funny: Student perceptions of instructor use of humor in college science classrooms,” Katey Cooper and Taija Hendrix, Irvine CA, January 2018.
- 2018 Society for the Advancement of Biology Education Research West coast meeting talk, “Using Cultural Competence to Improve the Experiences of Religious Students in Biology Classes,” Jasmine Truong, Irvine CA, January 2018.
- 2018 Society for the Advancement of Biology Education Research West coast meeting talk, “Cultural Evolution of Pedagogy: a Conceptual Model,” Dan Grunspan, Irvine CA, January 2018.

- 2018 Society for the Advancement of Biology Education Research West coast meeting poster, "Same curriculum, different mice, different outcomes: A reductionist approach to probing the impact of working on broadly relevant novel research," Katey Cooper and Taija Hendrix, Irvine CA, January 2018.
- 2018 Society for the Advancement of Biology Education Research West coast meeting poster, "Atheistic Definitions of Acceptance of Evolution Exacerbate Rejection of Evolution among Religious Students," Hayley Dunlop, Irvine CA, January 2018.
- 2018 Society for the Advancement of Biology Education Research West coast meeting poster, "Learning anxiously: Alleviating and exacerbating student anxiety in active learning classrooms," Katey Cooper, Irvine CA, January 2018.
- 2018 Society for the Advancement of Biology Education Research West coast meeting poster, "Have Disability Resources Centers Evolved to Accommodate Active Learning?," Logan Gin, Irvine CA, January 2018.
- 2017 International Society for Evolution, Medicine, & Public Health meeting poster, "A call to use cultural competence when teaching evolution to religious undergraduate students: Introducing Religious Cultural Competence in Evolution Education (ReCCEE)," Liz Barnes, Groningen Netherlands, August 2017.
- 2017 International Society for Evolution, Medicine, & Public Health meeting talk, "Identifying Evolutionary Medicine Core Principles," Dan Grunspan, Groningen Netherlands, August 2017.
- 2017 Society for the Advancement of Biology Education Research talk, "Towards more inclusive evolution education: a call to use cultural competence when teaching evolution," Liz Barnes, Minneapolis MN, July 2017.
- 2017 Society for the Advancement of Biology Education Research talk, "GenBio-MAPS: A programmatic assessment designed to measure student's conceptual understanding of core biology concepts across a curriculum," Christian Wright, Minneapolis MN, July 2017.
- 2017 Society for the Advancement of Biology Education Research poster, "Exploring instructor rationale for designing classroom assessments," Christian Wright, Minneapolis MN, July 2017.
- 2017 Society for the Advancement of Biology Education Research poster, "Can a five-minute introduction to an evolution module reduce students' level of perceived conflict between evolution and religion?," Jasmine Truong, Minneapolis MN, July 2017.
- 2017 Society for the Advancement of Biology Education Research poster, "The survey matters: instructors using different surveys to measure acceptance of evolution may be reaching different conclusions about their students," Liz Barnes and Hayley Dunlop, Minneapolis MN, July 2017.
- 2017 Society for the Advancement of Biology Education Research poster, "Identifying the unwritten rules of obtaining undergraduate research experiences," Jacquie Cala, Minneapolis MN, July 2017.
- 2017 Society for the Advancement of Biology Education Research poster, "To be funny or not to be funny: Student perceptions of instructor use of humor in college science classrooms," Katey Cooper and Taija Hendrix, Minneapolis MN, July 2017.

- 2017 Undergraduate Biology Education Research Gordon conference poster, “Learning anxiously: The opportunities and challenges of science active learning classrooms for college students with anxiety,” Katey Cooper, Eaton MA, July 2017.
- 2017 Undergraduate Biology Education Research Gordon conference poster, “Who perceives they’re smarter? Exploring the influence of student characteristics on student academic self-concept in physiology,” Katey Cooper, Eaton MA, July 2017.
- 2017 National Association for Research in Science Teaching (NARST) national meeting poster, “Capital gains: A bridge program influences social, cultural, and human capital,” Katelyn Cooper, San Antonio TX, April 2017.
- 2017 American Educational Research Association (AERA) national meeting talk, “A need for culturally sensitive evolution education: perspectives from college biology instructors and students,” Liz Barnes, San Antonio TX, April 2017.
- 2017 American Educational Research Association (AERA) national meeting poster, “Explaining the dearth of African Americans in evolutionary biology as a function of religiosity,” Liz Barnes, San Antonio TX, April 2017.
- 2017 ASU School of Life Sciences Septennial Review Student Poster Session poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Tempe AZ, April 2017.
- 2017 ASU Undergraduate Research Symposium poster, “The survey matters: instructors using different surveys to measure acceptance of evolution may be reaching different conclusions about their students,” Hayley Dunlop, Tempe AZ, March 2017.
- 2017 ASU Undergraduate Research Symposium poster, “Do Christian biology students experience stereotype threat?,” Taija Hendrix, Tempe AZ, March 2017.
- 2017 ASU Undergraduate Research Symposium poster, “Will this be on the test? Depends on the instructor! Exploring differences in instructor exam decisions in introductory biology,” Austin Huang, Tempe AZ, March 2017.
- 2017 ASU Undergraduate Research Symposium poster, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Anna Krieg, Tempe AZ, March 2017.
- 2017 ASU Undergraduate Research Symposium poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Tempe AZ, March 2017.
- 2017 ASU School of Human Evolution and Social Change Departmental Meeting workshop, “Building inclusive and fair classrooms: Spotting sources of bias in biology classrooms,” Katelyn Cooper, Tempe AZ, March 2017.
- 2017 American Association for the Advancement in Science (AAAS) national meeting talk, “How to teach evolution to religious students who may be resistant,” Liz Barnes, Boston MA, February 2017.

- 2017 American Association for the Advancement in Science (AAAS) national meeting poster, “The impact of a short evolution module on students’ perceived conflict with evolution,” Liz Barnes, Boston MA, February 2017.
- 2017 American Association for the Advancement in Science (AAAS) national meeting poster, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Anna Krieg, Boston MA, February 2017.
- 2017 American Association for the Advancement in Science (AAAS) national meeting poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Boston MA, February 2017.
- 2017 Biology Leadership Conference (BLC) poster, “A summer bridge program helps students to maximize active learning experiences and the active learning experiences of others,” Katelyn Cooper, Tucson AZ, February 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting talk, “Coming out in class: The influence of covert identities on student experiences in active learning classrooms,” Katelyn Cooper, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting talk, “Reducing students’ perceived conflict between religion and evolution,” Liz Barnes, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “Learning Anxiously: The challenges and benefits of active learning for students with anxiety,” Virginia Downing, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “Defining Core Principles in Evolutionary Medicine: A Delphi Study,” Dan Grunspan, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “Capital Gains: The influence of a summer bridge program on first year students’ social capital,” Michael Ashley, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Anna Krieg, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “The survey matters: instructors using different surveys to measure acceptance of evolution may be reaching different conclusions about their students,” Hayley Dunlop, Irvine CA, January 2017.

- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “Do Christian biology students experience stereotype threat?,” Taija Hendrix, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “Pedagogies of Professors Teaching evolution at secular versus Christian colleges,” Liz Barnes, Irvine CA, January 2017.
- 2017 Society for the Advancement of Biology Education Research West coast regional meeting poster, “Who perceives they’re smarter? Males have a higher academic self-concept in a large-enrollment physiology course,” Katelyn Cooper, Irvine CA, January 2017.
- 2017 ASU ISTL Learning Innovation Showcase poster, “The impact of a short evolution module on students’ perceived conflict with evolution,” Liz Barnes, Tempe AZ, January 2017.
- 2017 ASU ISTL Learning Innovation Showcase poster, “Capital Gains: The influence of a summer bridge program on first year students’ social capital,” Michael Ashley, Tempe AZ, January 2017.
- 2017 ASU ISTL Learning Innovation Showcase poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Tempe AZ, January 2017.
- 2017 ASU ISTL Learning Innovation Showcase poster, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Anna Krieg, Tempe AZ, January 2017.
- 2016 American Society of Cell Biology (ASCB) talk, “A summer bridge program helps students to maximize active learning experiences and the active learning experiences of others,” Katelyn Cooper, San Francisco CA, December 2016.
- 2016 American Society of Cell Biology (ASCB) poster, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Katelyn Cooper, San Francisco CA, December 2016.
- 2016 ASU School of Life Sciences Honors Event poster, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Anna Krieg, Tempe AZ, December 2016.
- 2016 ASU’s Diversity and Inclusion Education Conference workshop, “Building inclusive and fair classrooms: Spotting sources of bias in biology classrooms,” Katelyn Cooper, Tempe AZ, November 2016.
- 2016 National Association of Biology Teaching (NABT) national meeting talk, “Reducing students’ perceived conflict between religion and evolution,” Liz Barnes, Denver CO, October 2016.
- 2016 National Association of Biology Teaching (NABT) national meeting poster, “The survey matters: instructors using different surveys to measure acceptance of evolution may be reaching different conclusions about their students,” Liz Barnes, Denver CO, October 2016.

- 2016 Ecology Society of America national meeting talk, “Why you should teach course-based undergraduate research experiences,” Erin Shortlidge, Fort Lauderdale FL, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting poster, “Exploring instructor rationale for designing classroom assessment,” Austin Huang, Minneapolis MN, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Minneapolis MN, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting poster, “GenBio-MAPS: A programmatic assessment to measure student understanding of core biology concepts across a general biology curriculum,” Christian Wright, Minneapolis MN, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting poster, “Using a lens of Expectancy Value Theory to explore student resistance to active learning,” Michael Ashley, Minneapolis MN, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting poster, “Reducing students' perceived conflict between religion and evolution,” Liz Barnes, Minneapolis MN, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting talk, “What’s in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology course,” Katelyn Cooper, Minneapolis MN, July 2016.
- 2016 Society for the Advancement of Biology Education Research national meeting talk, “A bridge to active learning: A summer bridge program helps students to maximize active learning experiences and the active learning experiences of others,” Katelyn Cooper, Minneapolis MN, July 2016.
- 2016 Human Behavior and Evolution national meeting poster, “Reducing students' perceived conflict between religion and evolution,” Liz Barnes, Vancouver BC Canada, June 2016.
- 2016 Evolution national meeting poster, “Addressing potential conflict between students’ religious beliefs and evolution: instructor attitudes, practices, and barriers,” Liz Barnes, Austin TX, June 2016.
- 2016 Evolution national meeting talk, “Reducing students' perceived conflict between religion and evolution,” Liz Barnes, Austin TX, June 2016.
- 2016 Council for Undergraduate Research (CUR) meeting poster, “An exploratory interview study of what factors impact student participation in undergraduate research,” Katelyn Cooper, Tampa FL, May 2016.
- 2016 Council for Undergraduate Research (CUR) meeting poster, “A high enrollment course-based undergraduate research experience improves student conceptions of scientific thinking,” Katelyn Cooper, Tampa FL, May 2016.

- 2016 ASU SOLS Undergraduate Research Symposium poster, “A bridge to active learning: A summer bridge program helps students to maximize their active learning experiences and think about equity in groupwork,” Michael Ashley, Tempe AZ, April 2016.
- 2016 ASU SOLS Undergraduate Research Symposium poster, “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom,” Jasmine Truong, Tempe AZ, April 2016.
- 2016 ASU LGBT Showcase talk, “Coming out in class: The challenges and opportunities of active learning for LGBTQIA students in an undergraduate biology class,” Katelyn Cooper, Tempe AZ, April 2016.
- 2016 Experimental Biology meeting poster, “Design elements of a high enrollment course based undergraduate research experience may lead to inaccurate student conceptions about scientific research,” Katelyn Cooper, San Diego CA, April 2016.
- 2016 Freshman Research Initiative (FRI) Biennial Conference poster, “Design elements of a high enrollment course-based undergraduate research experience may lead to inaccurate student conceptions about scientific research,” Katelyn Cooper, Austin, TX, March 2016.
- 2016 Biology Leadership Community poster, “Cognitive difficulty and format of exams predicts gender and socioeconomic gaps in exam performance of students in introductory biology courses,” Christian Wright, New Orleans LA, February 2016.
- 2016 ASU ISTL Learning Innovation Showcase poster, “A two-week intensely active learning biology program has a positive impact on incoming first year students,” Katelyn Cooper and Michael Ashley, Tempe AZ, January 2016.
- 2016 ASU ISTL Learning Innovation Showcase poster, “Cognitive difficulty and format of exams predicts gender and socioeconomic gaps in exam performance of students in introductory biology courses,” Christian Wright, Tempe AZ, January 2016.
- 2016 ASU Jumpstarting STEM Careers conference poster, “A high enrollment course-based undergraduate research experience improves student conceptions of scientific thinking,” Katelyn Cooper, Tempe AZ, January 2016.
- 2015 American Society for Cell Biology national meeting poster, “A high enrollment course-based undergraduate research experience improves student conceptions of scientific thinking,” Katelyn Cooper, San Diego CA, December 2015.
- 2015 Association for American Colleges and Universities national STEM Education meeting poster, “Faculty perspectives on course-based undergraduate research experiences,” Erin Shortlidge, Seattle WA, November 2015.
- 2015 Society for the Advancement in Biology Education Research (SABER) national meeting poster, “GenBio-MAPS: A programmatic assessment to measure students understanding of core biology concepts across a general biology curriculum,” Christian Wright, Minneapolis MN, July 2015.



- 2015 Society for the Advancement in Biology Education Research (SABER) national meeting poster, “Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges,” Liz Barnes, Minneapolis MN, July 2015.
- 2015 Society for the Advancement in Biology Education Research (SABER) national meeting poster, “A high enrollment course-based undergraduate research experience improves student conceptions of scientific thinking and ability to interpret data,” Katelyn Cooper, Minneapolis MN, July 2015.
- 2015 Society for the Advancement in Biology Education Research (SABER) national meeting talk, “Faculty perceptions on course-based undergraduate research experiences,” Erin Shortlidge, Minneapolis MN, July 2015.
- 2015 Society for the Advancement in Biology Education Research (SABER) national meeting talk, “Exam characteristics exacerbate performance gaps between male and female students,” Christian Wright, Minneapolis MN, July 2015.
- 2015 BioLogos: Evolution and Christian Faith national meeting poster, “Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges,” Liz Barnes, Grand Rapids MI, May 2015.
- 2015 International Society for Evolution, Medicine, and Public Health national meeting poster, “Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges,” Liz Barnes, Tempe AZ, March 2015.
- 2015 American Association for the Advancement of Science (AAAS) national meeting poster, “Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges,” Liz Barnes, San Francisco CA, February 2015.
- 2014 Society for the Advancement in Biology Education Research (SABER) national meeting poster, “Examining introductory and advanced undergraduates’ understanding of systems biology concepts using the BioCore Guide,” Christian Wright, Minneapolis MN, July 2014.

### Teaching Experience:

- **Instructor, School of Life Sciences, Arizona State University, 2014- current**
  - Developed and taught a large-enrollment active learning undergraduate animal physiology course to ~150-300 students
    - BIO 360 Animal Physiology, Fall 2014, Fall 2015, Fall 2016, Fall 2017, Fall 2019, Fall 2020, Fall 2022
  - Developed and taught a biology education research course to undergraduate and graduate students in the context of a course-based undergraduate research experience (CURE) to ~5-15 students
    - BIO 598 Biology Education Research, Spring 2014, Spring 2015, Spring 2017
  - Developed and taught a science education research course focused on teaching transfer students about undergraduate research to ~10-20 students
    - BIO/BCH/SES 494 Learning about Research, Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021
    - BIO/BCH/SES 494 Engaging in Research, Spring 2018, Spring 2019, Spring 2020, Spring 2021
    - BIO/BCH/SES 494 Advising research, Fall 2018, Fall 2019, Fall 2020, Fall 2021, Fall 2022

- BIO/BCH/SES 494 Producing research, Spring 2019, Spring 2020, Spring 2021
  - Developed and taught an active learning evolutionary medicine course to ~25 students
    - BIO/ASB294 Introduction to Evolutionary Medicine, Spring 2019
  - Developed and taught a journal club focused on recent papers in discipline-based education research to ~10-15 students
    - BIO 591 Papers in Discipline-based Education Research, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2022
  - Developed and taught a college success course to freshman biology majors to ~20 students
    - BIO 189 Big Topics in Biology, Fall 2014
    - BIO 189 Extension of Summer Bridge Program, Fall 2015, Fall 2016
  - Developed and coordinated a seminar course on improving teaching for undergraduates and graduate students to ~15 students
    - BIO 494/598 Evidence-based Teaching in STEM, Fall 2015, Spring 2016, Fall 2016, Spring 2017
  - Mentored undergraduates in biology education research
    - BIO 495 Undergraduate Research, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021
- **Lecturer, Department of Biology, Stanford University, 2011-2012**
  - Developed and taught two upper-level writing-intensive courses to ~15 students in each course
    - BIO 199W Senior Honors Thesis: How to communicate scientific research, Fall 2011, Fall 2012
    - BIO 197WB Communicating neuroscience to non-scientists, Spring 2012
  - Developed and taught an introductory course-based undergraduate research experience to 250 students as part of a collaborative four-person instructional team
    - BIO 44X Core Molecular Biology Laboratory: Investigating p53 mutants, Winter 2012, Fall 2012
- **Graduate Student Course Developer and Instructor, Stanford University, 2009-2011**
  - Brain and Immune System, Winter 2009, Winter 2010, Winter 2011
    - Co-developed and co-taught an upper-level undergraduate and graduate student neuroimmunology course that emphasized science communication to a layperson audience. Course was offered for three consecutive years to ~20 students per year.
- **Graduate Teaching Assistant, Stanford University, 2007-2008**
  - Human Behavioral Biology, Spring 2008
    - TA for this 500-student course. Lectured once to the whole class, led weekly discussion sections for two sections of ~20 students each, held review sessions, and wrote/graded exams.
  - Cell Biology and Animal Physiology, Winter 2008
    - TA for this 250-student course. Led weekly discussion sessions for two sections of ~20 students each, held office hours, held review sessions, and wrote/graded exams.
  - Neural Systems and Behavior, Fall 2007
    - TA for this 100-student course. Led weekly discussion sections for two sections of ~12 students each and wrote/graded exams.

### **Trainees Mentored in Individual Apprenticeships:**

- **Postdoctoral scholars in biology education research, Arizona State University**
  - Emma Goodwin, August 2021- present
  - K. Supriya, August 2019- March 2021

- Current position: Associate director for data science supporting student success, Center for Education Innovation and Learning in the Sciences, University of California Los Angeles
  - M. Elizabeth Barnes, June 2018- July 2020
    - Current position: Tenure-track Assistant Professor in Biology Education, Department of Biology, Middle Tennessee State University
  - Dan Grunspan, August 2016- June 2020 (co-advised with Randy Nesse)
    - Current position: Tenure-track Assistant Professor in Biology Education, Department of Biology, University of Guelph
  - Katelyn Cooper, June 2018-July 2019
    - Current position: Tenure-track Assistant Professor in Biology Education, School of Life Sciences, Arizona State University; Previous position: Tenure-track Assistant Professor in Biology Education at University of Central Florida, 2019-2020
  - Christian Wright, June 2014- June 2015
    - Current position: Associate Director, EdPlus, Arizona State University
  - Erin Shortlidge, September 2014- September 2015
    - Current position: Tenured Associate Professor in Biology Education, Department of Biology, Portland State University
- **Graduate students in biology education research, Arizona State University**
  - Baylee Edwards, Ph.D. student in Biology and Society (advisor)
  - Carly Busch, Ph.D. student in Biology and Society and NSF Graduate Fellow in STEM Education, 2020-present (co-advisor with Katelyn Cooper)
  - Taya Misheva, Ph.D. student in Biology and Society, 2019-present (advisor)
  - Joseph Gazing Wolf, Ph.D. student in Biology, 2021- present (advisor on education project)
  - Baylee Edwards, M.S. student in Biology and Society, 2021- 2022 (advisor)
    - Next position: Ph.D. student in Biology and Society
  - Jacob Youngblood, Ph.D. student in Biology, 2019- 2021 (advisor on education project)
    - Next position: Tenure-track assistant professor, Southern Oregon University
  - Logan Gin, Ph.D. student in Biology and Society and NSF Graduate Fellow in STEM Education, 2017-2022 (co-advisor with Katelyn Cooper)
    - Next position: Assistant director of STEM education, Sheridan Center of Teaching and Learning, Brown University
  - Evan Brus, Ph.D. student in Biology, 2014- 2017 (advisor on education projects)
  - Erika Nadile, Ph.D. student in Biology and Society, 2019-2021 (advisor on education projects)
    - Next position: Assistant Director, Interdisciplinary Connections, Searle Center for Advancing Teaching and Learning, Northwestern University
  - Virginia Downing, Academic advisor, 2016-2019 (advisor on education project)
    - Next position: Ph.D. student in Education at University of Wisconsin Madison
  - Jacqueline Cala, non-degree completing graduate student in Biology, 2017-2018 (advisor)
    - Next position: Tenure-track faculty, Chandler-Gilbert Community College
  - M. Elizabeth Barnes, M.S. student in Biology and Society, 2013-2014 (advisor), Ph.D. student in Biology and Society and NSF Graduate Fellow in STEM Education, 2014-2018 (advisor)
    - Next position: NSF-funded biology education postdoc, ASU
  - Katelyn Cooper, Ph.D. student in Biology, 2015-2018 (advisor)
    - Next position: NSF-funded biology education postdoc, ASU
  - Brian Haney, Ph.D. student in Animal Behavior, 2015- 2016 (advisor on education project)
    - Next position: Teaching postdoc, Stonehill College
    - Current position: Tenure-track faculty at College of Mount St. Vincent
  - Nevada Wagoner, M.S. student in Biology and Society, 2014-2015 (advisor)

- Next position: Freshmen Academic Advisor, Embry Riddle Aeronautical University
  - Katie Fenton, M.A. student in Science Teaching at Northern Arizona University, 2014-2015 (co-advisor)
    - Stay-at-home mom
- **Undergraduate students in biology education research, Arizona State University**
  - Danielle Pais, ASU undergraduate, 2021- 2022 (advisor)
    - Next position: Masters in Sociology at University of Ghent, Belgium
  - Nina Kolath, ASU undergraduate, 2020- 2022 (advisor)
  - Jingyi He, ASU undergraduate, 2020- 2022 (advisor)
  - Anna Abraham, ASU undergraduate, 2019-2022 (advisor)
  - Samantha Maas, ASU undergraduate, 2019-2020 (advisor)
    - Next position: RISE Center program coordinator
  - Tala Araghi, ASU undergraduate, 2020-2021 (co-advisor)
  - Baylee Edwards, ASU undergraduate, 2020-2021 (advisor)
    - Next position: Masters program in Biology and Society
  - Yareli Reyes, ASU undergraduate, 2020-2021 (advisor)
  - Elonna Okuagu, ASU undergraduate, 2020- 2021 (advisor)
  - Puja Chhetri, ASU undergraduate, 2019-2021 (advisor)
  - Kaela Villegas, ASU undergraduate, 2019- 2021 (advisor)
  - Brian Cruz, ASU undergraduate, 2019- 2021 (advisor)
  - Sara Etebari, ASU undergraduate, 2019-2020 (advisor)
  - Julie Roberts, ASU undergraduate, 2019- 2020 (advisor)
    - Next position: Professional Masters program at Northwestern University
  - Brittany Rolfe, ASU undergraduate, 2019- 2020 (advisor)
    - Next position: Teaching K-12
  - Frankie Guerrero, ASU undergraduate, 2019 – 2020 (advisor)
    - Next position: Research assistant in Biology Education Research Lab
  - Rachel Scott, ASU undergraduate, 2019 (advisor)
    - Next position: Lab manager in Biology Education Research Lab
  - Hayley Dunlop, ASU undergraduate and SOLUR researcher, 2016-2019 (advisor)
    - Next position: Pursuing a MPH at University of Edinburgh and then medical school at The Ohio State University
  - Leilani Pfeiffer, ASU undergraduate, 2019 (advisor)
  - Jasmine Truong, ASU undergraduate and SOLUR researcher and fellow, 2015- 2018 (advisor)
    - Next position: Pursuing a MPH at Johns Hopkins University
  - Taija Hendrix, ASU undergraduate, 2016-2018 (advisor)
    - Next position: Elementary science teacher
  - Michelle Stephens, ASU undergraduate, 2017- 2018 (advisor)
    - Next position: Research technician at University of Wisconsin Madison
  - Kali Mahrer, ASU undergraduate, 2017 (advisor)
  - Austin Huang, ASU undergraduate and SOLUR researcher, 2014-2017 (advisor)
    - Next position: Elementary math and science teacher
  - Michael Ashley, ASU undergraduate and then research assistant, 2015- 2017 (advisor)
    - Next position: Medical student at Creighton
  - Anna Krieg, ASU undergraduate and Honors thesis student, 2016- 2017 (advisor)
    - Next position: Masters student in teaching program and teaching high school biology
  - Kayla Campbell, ASU undergraduate, 2016- 2017 (advisor)
    - Next position: Medical student in the Navy Medical School

- Dalia Aguilar, ASU undergraduate, 2016- 2017(advisor)
- Cyril Wassef, ASU undergraduate, SRE researcher, and Honors thesis student, 2015-2016 (advisor)
- Aditya Ponnappalli, ASU undergraduate, 2016 (advisor)
- Samantha Belcher, ASU undergraduate, 2015 (advisor)
- Monro Obenauer, ASU undergraduate, 2015 (advisor)
- Kate Bergovoy, ASU undergraduate, 2015 (advisor)
- Sailesh Tummala, ASU Honors thesis student, 2014-2015 (co-advisor)
- Anika Larson, ASU Honors thesis student, 2014-2015 (thesis committee member)
- Bethany Vu, ASU Honors thesis student, 2013-2014 (co-advisor)
- **Committee member for theses, Arizona State University**
  - Tom Roberto, M.A. student in Geosciences Education, 2017-2018 (committee member)
  - Nicholas Massimo, Ph.D. student in Biology, 2017-2018 (committee member)
  - Evan Brus, Ph.D. student in Biology, 2014- 2019 (committee member)
  - Lishan Zheng, Ph.D. student in Computer Science, 2015 (committee member)
  - Anika Larson, ASU Honors thesis student, 2014-2015 (committee member)
- **Undergraduate students in neuroimmunology research, Stanford University, 2008-2011**
  - Rachel Becker, Stanford undergraduate, awarded the Shuer Award for Excellence in Neuroscience Research award for her honors thesis, and was awarded a NSF Pre-doctoral Graduate Fellowship.
  - Aleena Syed, Stanford undergraduate who went on to medical school at Texas A&M
  - Ryan Medlock, high school student who went on to be a Vanderbilt undergraduate
  - David Praharaaj, high school student who went on to be a Stanford undergraduate
  - Sriya Subramani, University of Iowa undergraduate who went on to medical school at Univ of Iowa
  - Kyle Duff, Stanford undergraduate who went on to medical school at University of Pittsburgh
  - Juliet Idiga, Stanford undergraduate who went on to medical school at Columbia University
  - Tyler Berbert, high school student who went on to be a Stanford undergraduate

### Awards for trainees:

#### 2022

Selected as one of 49 invited scholars for the European Science Education Research Association (ESERA) Summer School, Carly Busch

AAAS 1<sup>st</sup> prize for graduate student E-poster competition in social sciences, Carly Busch

AAAS 1<sup>st</sup> prize for undergraduate student E-poster competition in science and society, Sam Maas

American Physiology Society 2022 Barbara A. Horwitz and John M. Horowitz Outstanding Undergraduate Abstract Award, Anna Abraham

American Physiology Society Undergraduate Research Excellence Award, Anna Abraham

American Physiology Society Teaching of Physiology Section New Investigator Award, Katelyn Cooper

ASU School of Life Sciences Student of the Year in Biomedical Sciences, Anna Abraham

ASU Graduate College Travel Award, Carly Busch

ASU College of Liberal Arts and Sciences, Graduate Excellence Award, Carly Busch

National Science Foundation STEM Education Postdoctoral Research Fellowship, \$300,000 for 2 years, Emma Goodwin

#### 2021

ASU College of Liberal Arts and Sciences Outstanding Graduate, Logan Gin

AAAS 1<sup>st</sup> prize for undergraduate poster session in science and society, Julie Roberts

AAAS 1<sup>st</sup> prize for graduate student poster session in social sciences, Erika Nadile

AAAS 2<sup>nd</sup> prize for undergraduate student poster session in social sciences, Puja Chhetri  
American Physiology Society Teaching Section Research Recognition Award, Carly Busch  
ASU Graduate College Fellowship, Erika Nadile  
ASU School of Life Sciences Travel Award, Erika Nadile  
ASU Graduate College Travel Award, Carly Busch

#### 2020

ASU School of Life Sciences Student of the Year in Biomedical Sciences, Frankie Guerrero  
ASU Moeur Award, Frankie Guerrero  
NABT 1<sup>st</sup> prize for undergraduate student poster session, Anna Abrahams  
NABT 1<sup>st</sup> prize for graduate student poster session, Erika Nadile  
NABT 3<sup>rd</sup> prize for mentored student poster session, Baylee Edwards  
ASU Committee for Campus Inclusion Catalyst Award for Staff, Supriya

#### 2019

ASU Undergraduate Student Government travel award, Hayley Dunlop  
ASU Barrett travel award, Hayley Dunlop  
Gordon research conference travel award, Katelyn Cooper  
Gordon conference discussion leader, Katelyn Cooper  
Gordon research conference travel award, Logan Gin  
ASU Graduate College travel grant, Logan Gin  
ASU GPSA travel grant, Logan Gin  
Science and Religion conference travel award, Liz Barnes  
Fully funded Masters in Public Health at University of Edinburgh, Hayley Dunlop  
ASU GPSA travel award, Logan Gin

#### 2018

ASU Faculty Women's Association (FWA) Distinguished Graduate Student Award, Katey Cooper  
ASU Faculty Women's Association (FWA) Distinguished Graduate Student Award, Liz Barnes  
ASU CLAS Dean's medalist award for top student in the School of Life Sciences, Jasmine Truong  
ASU School of Life Sciences True Grit award for student with the most growth, Taija Hendrix  
ASU School of Life Sciences Innovative TA award, Katey Cooper  
ASU School of Life Sciences Innovative TA award, Evan Brus  
ASU School of Life Sciences Scholarship award winner, Hayley Dunlop  
ASU School of Life Sciences Faculty Excellence in Teaching award, Christian Wright  
ASU School of Life Sciences (SOLS) Graduate Student Travel Award, \$400, Logan Gin  
American Society for Cell Biology LGBTQ+ Travel Award, \$600, Katelyn Cooper  
ASU School of Life Sciences (SOLS) Graduate Student Travel Award, \$400, Katelyn Cooper  
CourseSource travel award to meeting, Dan Grunspan  
ASU Undergraduate Student Government travel award, Hayley Dunlop

#### 2017

ASU Graduate and Professional Student Association Teaching Excellence Award, Katey Cooper  
ASU Graduate and Professional Student Association Mentorship Award, Liz Barnes  
Inclusive Environments and Metrics for Biology Education Research (iEMBER) lightning talk award, Katey Cooper  
National Science Foundation (NSF) Graduate Fellowship, Logan Gin  
ASU College of Liberal Arts and Sciences (CLAS) Graduate Excellence Award, Liz Barnes  
AAAS 2<sup>nd</sup> place student poster competition, Liz Barnes  
ASU SOLUR Researcher, Hayley Dunlop  
ASU SOLUR Researcher, Taija Hendrix

ASU SOLUR Fellow, Jasmine Truong  
ASU School of Life Sciences Undergraduate Programs Travel Stipend, \$500, Katey Cooper  
ASU Graduate & Professional Student Association (GPSA) Travel Grant, \$950, Katey Cooper  
ASU School of Life Sciences (SOLS) Graduate Student Travel Award, \$400, Katey Cooper  
ASU Graduate College Travel Award, \$500, Katey Cooper  
Environment and Metrics in Biology Education and Research (EMBER) Grant, \$500, Katey Cooper  
Undergraduate Biology Education Gordon Research Conference Travel Award, \$500, Katey Cooper  
SOLUR Program Travel Grant, \$300, Taija Hendrix  
ASU Graduate & Professional Student Association (GPSA) Travel Grant, \$950, Liz Barnes  
ASU Graduate College Travel Award, \$450, Liz Barnes  
Portland State Teaching award, Erin Shortlidge

#### 2016

ASU College of Liberal Arts and Sciences (CLAS) Graduate Excellence Award, Katelyn Cooper  
ASU SOLUR Researcher, Jasmine Truong  
ASU CLAS Undergraduate Summer Enrichment Scholarship, Jasmine Truong  
ASU SOLS Student of the Year for Genetics, Cell, and Developmental Biology, Michael Ashley  
American Society for Biochemistry and Molecular Biology Graduate Travel Award, Katelyn Cooper, \$1000  
ASU School of Life Sciences (SOLS) Graduate Student Travel Award, Katelyn Cooper, \$400  
ASU Graduate & Professional Student Association (GPSA) Travel Grant, Katelyn Cooper, \$450  
ASU School of Life Sciences Graduate Student Travel Grant, Liz Barnes, \$400  
ASU School of Life Sciences Graduate Student Travel Grant, Liz Barnes, \$400  
ASU Graduate Education Travel Grant, Liz Barnes, \$500  
ASU SOLS travel funds, Austin Huang, \$250  
Nominated for ASU Faculty Women's Association Graduate Student Award, Liz Barnes and Katelyn Cooper

#### 2015

National Science Foundation (NSF) Graduate Fellowship, Liz Barnes  
ASU SOLS SOLUR Researcher, Austin Huang  
ASU SOLS SOLUR Summer Research Experience program, Cyril Wassef  
ASU SOLS Joyce Foster Larson Scholarship, Samantha Belcher  
ASU Graduate & Professional Student Association (GPSA) Travel Grant, Katelyn Cooper, \$632  
ASU SOLS Graduate Student Travel Award, Katelyn Cooper, \$400  
BioLogos Travel grant, Liz Barnes, \$500  
ASU College of Liberal Arts and Sciences (CLAS) Graduate Excellence Award, Liz Barnes

#### 2014 and earlier

National Academies Summer Institute on Scientific Teaching Fellow, Christian Wright  
ASU Biology and Society Travel Grant, Liz Barnes, \$1600  
National Science Foundation (NSF) Graduate Fellowship for undergraduate trainee, Rachel Becker  
Stanford Shuer Award for Excellence in Neuroscience Research award for honors thesis, Rachel Becker

### **General press about the lab research and people:**

ASU featured graduates – featuring Logan Gin. <https://news.asu.edu/20211202-inspired-personal-experiences-phd-grad-advocates-inclusive-science-education>

Skeptic Magazine. How to teach evolution to religious students.  
[http://docs.wixstatic.com/ugd/98a1a0\\_b701d0c4872a48cd868d2175499ca0ff.pdf](http://docs.wixstatic.com/ugd/98a1a0_b701d0c4872a48cd868d2175499ca0ff.pdf)

BioLogos blog. Teaching evolution to students of faith: An interview with Sara Brownell and Elizabeth Barnes. <https://biologos.org/blogs/kathryn-applegate-endless-forms-most-beautiful/teaching-evolution-to-students-of-faith-an-interview-with-sara-brownell-and-elizabeth-barnes>

Scientific American. Teachers Help One Another Bring Evolution Back to the Classroom. [http://docs.wixstatic.com/ugd/98a1a0\\_673f8891051243dcb2c5afe37dec2132.pdf](http://docs.wixstatic.com/ugd/98a1a0_673f8891051243dcb2c5afe37dec2132.pdf)

ASU featured graduates – featuring Katey Cooper. <https://asunow.asu.edu/20180429-biology-phd-grad-gains-international-recognition-her-research-final-week-school>

ASU featured graduates – featuring Liz Barnes. <https://asunow.asu.edu/20180429-overcoming-odds-graduate-earns-doctorate-real-life-cinderella-story>

ASU SOLS news Student Spotlight- featured undergraduate Taija Hendrix. <https://sols.asu.edu/student-spotlight/taija-hendrix>

Center for Biology and Society Website “The Biology Education Research Lab’s Eye on Equity” – featured the lab research <https://cbs.asu.edu/news/biology-education-research-lab%E2%80%99s-eye-equity>

Center for Biology and Society Website “Liz Barnes, CBS PhD Student is Making Her Mark” – featured Ph.D. student Liz Barnes <https://cbs.asu.edu/news/liz-barnes-cbs-phd-student-making-her-mark>

ASU SOLS news. “Finding a community within School of Life Sciences” – featured undergraduate Michael Ashley <https://sols.asu.edu/news-events/news/finding-community-within-school-life-sciences>

ASU SOLS news. “BioBridge program gives ASU freshmen the tools to succeed” – featured the bridge program co-directed by myself <https://asunow.asu.edu/content/biobridge-program-gives-asu-freshmen-tools-succeed>

NY Times OpEd “Are college lectures unfair?” – featured lab research on gender gaps <http://anniemurphypaul.com/2015/09/are-college-lectures-unfair/>

Center for Biology and Society website “Sara Brownell blazes her way through her first semesters at ASU” <https://cbs.asu.edu/news/sara-brownell-blazes-her-way-through-her-first-semesters-asu>

ASU’s College of Liberal Arts and Sciences magazine, Spring 2015 issue, featured Ph.D. student Liz Barnes

Current Biology “Breathing fresh life into life science education” – featured lab research on professional identity and the BioCore Guide <http://www.sciencedirect.com.ezproxy1.lib.asu.edu/science/article/pii/S0960982214015528>

ASU Cronkite news “Education gender gaps” – featured lab research on gender gaps <https://www.youtube.com/watch?v=PjWPxqUncgo&list=UUO8tHWm0LQy3QWFcnZeV4CQ>

### **Program-level Mentoring, Curriculum Development, and Informal Teaching Experience:**

- *Undergraduate Biology Honors Program Director, Stanford University, 2011-2012*  
Mentored students, coordinated logistics, and provided extensive writing feedback on student honors proposals and drafts of honors theses for 65 Biology majors.



- *Bing Honors College Faculty Mentor, Human Biology, Stanford University, 2011-2012*  
Mentored ~12 senior human biology majors as the natural sciences faculty mentor in an undergraduate honors thesis bootcamp. Led workshops and gave presentations on skills and tools necessary to write a good honors thesis, as well as individual mentoring.
- *Explorations Program Founder and Director, Stanford University, 2008-2012*  
Founded and directed a program in the introductory Biology curriculum where grad students and postdocs taught single session hands-on, interactive specialized classes on topics in biology that undergraduate students would not have gotten exposure to in intro biology. Over 100 graduate students and postdocs participated and over 600 undergraduates attended classes during these years and the program is ongoing. Published two papers on program evaluation.
- *Center for Teaching and Learning (CTL) Consultant, Stanford University, 2010-2011*  
Served as a teaching consultant for university-wide departments. Led videotaped microteaching sessions, small group evaluations, and TA training.
- *Biology Department TA Orientation Founder and Coordinator, Stanford University, 2010-2012*  
Initiated the first-ever Biology department-specific TA orientation for incoming graduate students. Orientation focused on departmental TA mentoring opportunities and support services, teaching goals, and small group discussions about teaching challenges.
- *Mentors in Teaching (MinT) Fellow, Stanford University, 2009-2011*  
Selected as a fellow for a university-wide TA mentorship program that worked with multiple departments to improve graduate student teaching through workshops, videotaped teaching sessions, and the development of new mentoring programs.
- *Biocore Advisors Founder and Director, Stanford University, 2008-2011*  
Founded and directed a TA training program for teaching assistants in the introductory Biology core classes that paired new TAs with previously successful TAs that have taught the same course. 18 mentors worked with over 54 TAs while I directed the program and program is now a mandatory part of TA training for graduate students in Biology.
- *HHMI EXROP Summer Research Coordinator, Stanford University, 2011*  
Coordinated a 10-week HHMI-funded summer undergraduate research program to six first generation students doing biological research.
- *High School Outreach Program Coordinator and Instructor, Scripps Research, 2004-2007*  
Program coordinator for 2006-2007; taught high school students and teachers specialized topics in biology and chemistry and organized the summer research internship and mentoring program.
- *Scientific Volunteer, Ruben H. Fleet Science Museum, San Diego, 2005*  
Performed hands-on demonstrations in an informal science education setting.
- *Biology Student Advisor, Cornell University, 2003-2004*  
Mentored freshman biology majors, helped plan freshman schedules, held advising office hours, and tutored introductory biology and chemistry.

## **Professional Service:**

### **Institution-level service at ASU:**

- Founding Director for Research in Inclusive STEM Education (RISE) Center, 2020- present  
Established a new research center focused on improving equity and inclusion in college STEM
- Dean's Advisory Council for Equity, Diversity, and Inclusion, 2020-present
- School of Life Sciences Committee for Justice, Equity, Diversity, and Inclusion, 2020-present
- Animal Physiology learning goals committee, 2018-2021  
Served on a committee of other instructors of Bio360 Animal Physiology to come to consensus about learning goals for the course
- School of Life Sciences Academic Integrity working group, 2020
- College-level search committee to select a dean of natural sciences, 2020
- School of Life Sciences Strategic Planning committee, 2018- 2020  
Committee to plan goals in teaching and research for the School of Life Sciences

- Faculty co-director for Early Start BioBridge Program, 2014-2019  
Co-led two week intensive early start bridge program for ~30-50 incoming first year students majoring in biology for 6 years. Focus of the program was on helping students do well in their first-year courses, helping them navigate college, and building community.
- University-level General Studies Task Force, 2018  
Identified a new plan for general studies across the four different campuses of the university
- Active Learning Steering Committee, 2016- 2019  
Served on committee dedicated to exploring technological and structural needs of classroom spaces for active learning
- Guest lecturer/presenter, 2014- 2018  
Biology and Society Conversation series, Can institutions be elite and inclusive? Fall 2018  
DCI 791: Transdisciplinary Seminar II, Spring 2017  
ELS 501 Grand Challenges in Environmental Life Sciences, Fall 2016, Fall 2017  
Biology and Society Lab, Spring 2016  
IGERT Alliance for Person Centered Accessible Technologies, Spring 2016  
School of Life Sciences Graduate Student Orientation, Fall 2014
- Participant in panel for new Assistant Professors “Teaching at ASU,” 2017, 2019
- Faculty co-director for Seminar Series Evidence-based Teaching in STEM, 2015 – 2018  
Served as a co-director for seminar series that focuses on evidence-based teaching in college STEM and aims to create a learning community of faculty, staff, and students interested in teaching. We hosted 10 outside speakers over three years.
- Faculty participant in Camp Ignite, 2014-2016  
Attended 2-day summer program for all incoming biology majors that was aimed at building community
- College of Liberal Arts and Sciences Inclusion Campus Climate Committee, 2016- 2017  
Served on a college-level committee focused on diversity and inclusion
- Workshop facilitator, Global Health & Human Biology SOLS/SHESC Workshop, 2016  
Facilitated a half-day discussion on competencies and curriculum for ~40 faculty members who teach classes or do research related to global health.
- Faculty co-director for Graduate Certificate in Scientific Teaching in Higher Education, 2014-2015  
Helped design program of study and get institutional approval. Program is intended to provide interested graduate students with a suite of courses, mentored teaching opportunities, and the opportunity to engage in biology education research.
- First Year Forward Committee, 2014 - 2015  
Served on committee dedicated to addressing how *all* students experience their first year at college.
- School of Life Sciences Director Search Committee, ASU, 2014- 2015  
Served on departmental committee to conduct a target hire for high level Director position.
- School of Life Sciences Instructional Professional Search Committee, ASU, 2014- 2015  
Served on departmental committee to hire two active learning specialists in biology.
- Institution-wide STEM Education Group, 2014  
Served on committee dedicated to STEM education across the ASU campus that participated in STEM education discussions and collaborative grant writing.
- Curriculum Reform Committee, School of Life Sciences, 2014  
Served on departmental committee to help biology instructors improve their courses by engaging in more student-centered instruction.

**National-level:**

- Co-lead of Society for the Advancement in Biology Education Research (SABER) LGBTQ+ affinity group, 2019-present

- Lead for Society for the Advancement in Biology Education Research (SABER) Diversity and Inclusion Virtual seminar series, 2020-2022
- Review committee for LGBTQ+ Educator of the Year, 2021
- Co-chair of Society for the Advancement in Biology Education Research (SABER) Diversity and Inclusion committee, 2018-2021
- Member of Society for the Advancement in Biology Education Research (SABER) Diversity and Inclusion committee, 2018-2021
- Member of Society for the Advancement in Biology Education Research (SABER) abstract committee, 2018-2020
- Online with Life Sciences Education (LSE) moderator, 2021
- Co-lead for SABER Action Group for Racial Justice, 2020
- Member of Executive Committee for the Society for the Advancement in Biology Education Research (SABER), 2018-2019
- Member of Society for the Advancement in Biology Education Research (SABER) Bill Wood Graduate Award committee, 2018-2019
- Member of Steering Committee for the Society for the Advancement in Biology Education Research (SABER), 2017-2018
- Ad hoc reviewer for CBE-Life Sciences Education, Science Advances, BioScience, Evolution Education and Outreach, Journal of Engineering Education, Physics Review, Journal of Geosciences Education, Science and Education, Learning and Instruction, Journal of Accounting Education, F1000 Research, FEMS Microbiology Letters, International Journal of STEM Education, eLife, Frontiers Education – STEM Education, and PloS One, 2013-present
- Conference Abstract reviewer for Society for Biology Education Research (SABER) national meeting and AAAS national meeting, 2014-present
- Organizer for professional development sessions at national SABER meeting and Gordon meeting on “Is there the need for interdisciplinary graduate training programs in biology education,” 2015
- Invited to participate in the Partnership for Undergraduate Life Sciences Education (PULSE) community as a Northwest PULSE Workshop facilitator and Southwest PULSE Circle member, 2014-2016
- Panel organizer for national SABER meeting for “Getting your first job as a Science Faculty with Education Specialty” and “Getting tenure as a Discipline-based education researcher”, 2014

### **Public and community outreach:**

- **Arizona State University Teaching Innovation Blog posts from members of the lab**
  1. Who are you teaching to? <http://asutechwebs.blogspot.com/2014/11/who-are-you-teaching-to.html>
  2. Understanding CUREs: Course-based Undergraduate Research Experiences <http://asutechwebs.blogspot.com/2015/04/understanding-cures-course-based.html>
  3. Transforming undergraduate biology education: What resources are available to faculty and departments? <http://asutechwebs.blogspot.com/2015/04/transforming-undergraduate-biology.html>
  4. The Hidden Economic Costs of Active Learning <http://asutechwebs.blogspot.com/2015/09/the-hidden-economic-costs-of-active.html>
  5. The Impact of Active Learning on Different Genders <http://asutechwebs.blogspot.com/2015/12/the-impact-of-active-learning-on.html>
  6. Beyond “Teaching the Facts”: How to Teach Evolution to Religious Students Who Don’t “Believe” <http://asutechwebs.blogspot.com/2016/05/beyond-teaching-facts-how-to-teach.html>
  7. How Instructors Can Make Their Active Learning Classrooms More Inclusive to Members of the LGBTQIA Community <http://asutechwebs.blogspot.com/2016/09/how-instructors-can-make-their-active.html>

8. What's the Point of Using Student Names in Large Courses?  
<http://asutechwebs.blogspot.com/2017/02/whats-point-of-using-student-names-in.html>
9. Should science instructors try to be funny? Yes, depending on what they joke about!  
<http://asutechwebs.blogspot.com/2018/08/should-science-instructors-try-to-be.html>
10. Considering Clickers & Anxiety: Implementing Clicker Technology So that it Decreases Student Anxiety in the Classroom  
<http://asutechwebs.blogspot.com/2018/08/considering-clickers-anxiety.html>
11. Building STEM Bridges: Reflecting on five years of ASU's BioBridge Program  
<http://asutechwebs.blogspot.com/2018/10/building-stem-bridges-reflecting-on.html>
12. Online biology program admits premed students, but are they prepared for medical school?  
<http://asutechwebs.blogspot.com/2019/09/online-biology-program-admits-premed.html>
13. Not All Undergraduate Research Experiences Are Good  
<http://asutechwebs.blogspot.com/2019/11/not-all-undergraduate-research.html>
14. Evolutionary Medicine: Teaching Resources for Science Courses  
<http://asutechwebs.blogspot.com/2020/05/evolutionary-medicine-teaching.html>
15. The Importance of Using Cultural Competence When Teaching Evolution  
<http://asutechwebs.blogspot.com/2020/04/the-importance-of-using-cultural.html>
16. Instructors, Be Careful About Joking Around: Science Students Find Topics About Own Identity Offensive  
<http://asutechwebs.blogspot.com/2020/05/instructors-be-careful-about-joking.html>
17. How to Make Undergraduate Research Experiences More Inclusive for Students with Depression  
<http://asutechwebs.blogspot.com/2020/06/how-to-make-undergraduate-research.html>
18. Tips to Make Your Classroom More Inclusive for LGBTQ+ Students  
<http://asutechwebs.blogspot.com/2020/07/tips-to-make-your-classroom-more.html>
19. Can Someone Believe in God and Accept Evolution? Atheistic Perceptions of Evolution Decrease Acceptance of Evolution  
<http://asutechwebs.blogspot.com/2020/07/can-someone-believe-in-god-and-accept.html>
20. Helping to Support Science Undergraduates with Disabilities in an Active Learning Setting  
<http://asutechwebs.blogspot.com/2020/10/helping-to-support-science.html>
21. How Can We Create More Inclusive Undergraduate Research Experiences for People Excluded Because of Their Ethnicity or Race (PEERs)?  
<http://asutechwebs.blogspot.com/2020/11/how-can-we-create-more-inclusive.html>
22. What have we learned from student perceptions of voluntary participation: are we being equitable?  
<http://asutechwebs.blogspot.com/2021/02/what-have-we-learned-from-student.html>
23. Is an online biology degree program more accessible and inclusive?  
<http://asutechwebs.blogspot.com/2020/12/is-online-biology-degree-program-more.html>
24. Religious cultural competence in evolution education could address the underrepresentation of people of color in evolutionary biology  
<http://asutechwebs.blogspot.com/2020/11/religious-cultural-competence-in.html>
25. Students' Knowledge of Finding and Securing Research Positions: How Can We Make Undergraduate Research Experiences Accessible?  
<http://asutechwebs.blogspot.com/2021/03/students-knowledge-of-finding-and.html>
26. How Christians May Feel Stigmatized in the Biology Community  
<http://asutechwebs.blogspot.com/2021/03/how-christians-may-feel-stigmatized-in.html>
27. Decisions, decisions, decisions... how active learning is implemented matters!  
<http://asutechwebs.blogspot.com/2021/06/decision-decisions-decisions-how-active.html>
28. Experiences of STEM students with Disabilities During the Transition to Emergency Remote Instruction  
<http://asutechwebs.blogspot.com/2021/08/experiences-of-stem-students-with.html>

29. How Does Institution Type Impact Students' Experiences in Undergraduate Research? <http://asutechwebs.blogspot.com/2022/02/how-does-institution-type-impact.html>
30. How Can We Make Undergraduate Research More Inclusive For Students With Disabilities? <http://asutechwebs.blogspot.com/2022/06/how-can-we-make-undergraduate-research.html>
31. How Can We Make Online Undergraduate Science Courses More Inclusive for Students with Depression? <http://asutechwebs.blogspot.com/2022/08/how-can-we-make-online-undergraduate.html>
32. How Can We Maximize Student Comfort When Teaching Controversial Topics in Bioethics? <http://asutechwebs.blogspot.com/2022/09/how-can-we-maximize-student-comfort.html>
33. Should premed students discuss their mental health conditions on their medical school applications? <http://asutechwebs.blogspot.com/2022/10/should-premedical-students-discuss.html>

### **Professional Development:**

- **Membership in Professional Societies**
  - Society for the Advancement of Biology Education Research (SABER)
  - National Science Teacher's Association (NSTA)
  - American Society for Cell Biology (ASCB)
  - American Association for the Advancement in Science (AAAS)
  - Association for Women in Science
  
- **Attended Teaching-related Classes/Workshops/Learning Communities**
  - Science Course Design, Speaking about Science, Professional and Leadership Development, Intro to Teaching, Directed Reading on Undergraduate Biology Labs, The Science Curriculum, Assessment and Accountability in Higher Education, Research in Science Education: Assessment and Evaluation, Mentors in Teaching (MinT) training, Community College Biology Faculty Enhancement through Scientific Teaching (CCB FEST), University of Washington Biology Education Research Group (BERG), ASU Science Education Research Group, Culturally Aware Mentoring