**M. Elizabeth Barnes**

Assistant Professor

Department of Biology

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**APPOINTMENTS**

**Assistant Professor, Middle Tennessee State University, Department of Biology,** August 2020 – present

* Research focus: biology education

**Postdoctoral Scholar, Arizona State University, School of Life Sciences,** June 2018 – July 2020

* Research focus: biology education

**EDUCATION**

**Arizona State University, School of Life Sciences, 2010-2018**

* Ph.D. in Biological Sciences, May 2018
  + Concentration: Biology Education Research
  + Advisor: Sara E. Brownell
* M.S. in Biological Sciences, June 2014
  + Concentrations: Biology Education Research, History & Philosophy of Biology
  + Advisors: Sara E. Brownell and Sarah K. Brem
* B.S. in Biological Sciences, May 2013
  + Concentrations: Biology & Society, History & Philosophy of Biology
  + Advisor: Sarah K. Brem
  + *magna cum laude*

**FUNDING**

Middle Tennessee State University Faculty Research and Creative Activity Committee (FRCAC) Award. *PI*. “Perceived Conflict Between Religion and Evolution among Undergraduate Biology Students”. $10,000 funded October 2020.

National Science Foundation (NSF) Research Coordination Network in Undergraduate Biology Education (RCN-UBE) *Co-PI* “Measuring Evolution Acceptance” $73,269 funded August 2020.

National Science Foundation (NSF) Improving Undergraduate STEM Education (IUSE) *Co-PI,* “A large-scale systematic exploration of the impact of culturally competent biology education.” $423,003 funded August 2018.

National Science Foundation Graduate Research Fellowship (NSF GRFP), $150,200 total stipend and tuition support awarded. 2015-2018.

Arizona State University Center for Evolution and Medicine Research Grant “Conceptions of acceptance of evolution among college biology students.” $1,600. Funded April 2016

**PUBLICATIONS**

1. **Barnes, M.E.**, \*Maas, S.A., \*Roberts, J.A. Brownell, S.E. (2021). Christianity as a Concealable Stigmatized Identity (CSI) among Biology Graduate Students. *CBE—Life Sciences Education*, *20*(1), ar9. https://doi.org/10.1187/cbe.20-09-0213
2. **Barnes, M.E.**, Supriya, K., \*Dunlop, H. M., \*Hendrix, T. M., Sinatra, G. M., Brownell, S.E. (2020)Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students. *CBE—Life Sciences Education*, 19(4), ar59*.* <https://doi.org/10.1187/cbe.19-10-0197>
3. **Barnes, M. E.**, \*Dunlop, H. M., Sinatra, G. M., \*Hendrix, T. M., Zheng, Y., & Brownell, S. E. (2020). “Accepting Evolution Means You Can’t Believe in God”: Atheistic Perceptions of Evolution among College Biology Students. *CBE—Life Sciences Education*, 19(2), ar21. <https://doi.org/10.1187/cbe.19-05-0106>
4. Cooper, K. M., Gin, L. E., **Barnes, M. E.**, & Brownell, S. E. (2020). An Exploratory Study of Students with Depression in Undergraduate Research Experiences. *CBE—Life Sciences Education*, 19(2), ar19. <https://doi.org/10.1187/cbe.19-11-0217>
5. **Barnes, M.E.**, **\***Truong, J.M., Grunspan, D.Z., Brownell, S.E.(2020).Are scientists biased against Christians? Exploring real and perceived bias against Christians in academic biology. *PloS one,* 15(1), e0226826. <https://doi.org/10.1371/journal.pone.0226826>
   * **Commentary:** chosen by PLOS ONE to be highlighted in their private press release to media outlets
   * **Commentary:** Picked up by Times Higher Education (<https://www.timeshighereducation.com/news/us-biologists-biased-against-evangelical-students-says-study>)
6. **Barnes, M. E.**, Werner, R., Brownell, S.E. (2020). Differential Impacts of Religious Cultural Competence on Students' Perceived Conflict with Evolution at an Evangelical University. *The American Biology Teacher*, 82(2), 93-101. <https://doi.org/10.1525/abt.2020.82.2.93>
7. Dunk, R. D., **Barnes, M. E.**, Reiss, M. J., Alters, B., Asghar, A., Carter, B. E., ... & Mead, L. S. (2019). Evolution education is a complex landscape. *Nature ecology & evolution*, *3*(3), 327. <https://doi.org/10.1038/s41559-019-0802-9>.
8. **Barnes, M.E.**, **\***Dunlop, H.M., Holt, E., Brownell, S.E., (2019). Different Instruments used to Measure Acceptance of Evolution Leads to Different Research Findings. *Evolution: Education and Outreach,* 12(1), 4. <https://doi.org/10.1186/s12052-019-0096-z>.
9. Cooper, K.M., \*Hendrix, T., Stephens, M.D., Cala, J.M., Mahrer, K., Krieg, A., Agloro, A.C.M., Badini, G.V., **Barnes, M.E**., Eledge, B., Jones, R., Lemon, E.C., Massimo, N.C., Martin, A., Ruberto, T., Simonson, K., Webb, E.A., Weaver, J., Zheng, Y., Brownell, S.E.(2018). To be funny or not to be funny: Gender differences in student perceptions of instructor humor in college science courses. *PLoS ONE* 13(8): e0201258. <https://doi.org/10.1371/journal.pone.0201258>.
10. **Barnes, M.E.**, & Brownell, S.E. (2018). A Call to Use Cultural Competence When Teaching Evolution to Religious College Students: Introducing Religious Cultural Competence in Evolution Education (ReCCEE). *CBE-Life Sciences Education*, 16 (4). <https://doi.org/10.1187/cbe.17-04-0062>.
11. **^Barnes, M.E.**, \*^Truong, J.M., Brownell, S.E (2018). Can Six Minutes of Culturally Competent Evolution Education Reduce Students’ Level of Perceived Conflict between Evolution and Religion? *The American Biology Teacher,* 80(2), 106-115. (^these authors contributed equally) <https://doi.org/10.1525/abt.2018.80.2.106>.
12. Grunspan, D. Z., Nesse, R. M., **Barnes, M. E.,** & Brownell, S.E. (2017). Core principles of evolutionary medicine: a Delphi study. *Evolution, Medicine, and Public Health*, 2018 (1), 13-23. <https://doi.org/10.1093/emph/eox025>.
13. **Barnes, M. E.**, & Brownell, S. E. (2017). Experiences and Practices of Evolution Instructors at Christian Universities that can Inform Culturally Competent Evolution Education. *Science Education*, 101(6), 1-24. <https://doi.org/10.1002/sce.21317>.
14. **Barnes, M. E.**, Evans, E. M., Hazel, A., Brownell, S. E., & Nesse, R. M. (2017). Teleological Reasoning, not Acceptance of Evolution, Impacts Students’ Ability to Learn Natural Selection. *Evolution: Education and Outreach*, 10(7). <https://doi.org/10.1186/s12052-017-0070-6>.
15. **Barnes, M. E.**,Elser, J., & Brownell, S. E. (2017). Impact of a Short Evolution Module on Students' Perceived Conflict between Religion and Evolution. *The American Biology Teacher*, 79(2), 104-111. <https://doi.org/10.1525/abt.2017.79.2.104>.

**Commentary: Highlighted in Scientific American magazine, February 2017.**

**Commentary: American Biology Teacher, most read article, February - July, 2017**

1. **Barnes, M. E.**, **\***Truong, J. M., & Brownell, S. E. (2017). Experiences of Judeo-Christian Students in Undergraduate Biology. *CBE-Life Sciences Education*, 16(1), 15**.** <https://doi.org/10.1187/cbe.16-04-0153>.

**Commentary: CBE Life Sciences Education: 2nd most read article, April 2017.**

1. **Barnes, M. E.**, & Brownell, S. E. (2016). Practices and Perspectives of College Instructors on Addressing Religious Beliefs When Teaching Evolution. *CBE-Life Sciences Education*, 15(2), 18. <https://doi.org/10.1187/cbe.15-11-0243>.

**Commentary: Highlighted in Scientific American magazine, August 2018**

**Refereed publications under review:**

1. **Barnes, M.E.**, \*Maas, S.A., \*Roberts, J.A. Brownell, S.E. Muslim Undergraduate Biology Students’ Evolution Acceptance in the United States. Under review for *Plos One*.
2. **Barnes, M.E.**, Supriya, K., Zheng, Y., Roberts, J.A., Brownell, S.E. Students’ Perceived Conflict between Evolution and their Religion is a Stronger Predictor of Evolution Acceptance than Religiosity, Religious Affiliation, or Understanding of Evolution. Under review for *CBE Life Sciences Education*.
3. Grunspan, D.Z., Dunk, R.P., **Barnes, M.E.**, Wiles, J., Brownell, S.E. Using human examples in an evolution lesson leads to differential impacts on student learning experiences in a large split-section introductory biology course. Under review, after revisions, for *Evolution: Education and Outreach.*

**Outreach Publications:**

1. **Barnes, M.E.** (2014). “Ernst Haeckel’s Biogenetic Law” *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/7825>
2. **Barnes, M.E.** (2014). “Karl Ernst von Baer’s laws of Embryology”. *Embryo Project Encyclopedia*. ISSN: 1940-5030. [http://embryo.asu.edu/handle/10776/7821](http://embryo.asu.edu/handle/10776/7821%20)
3. **Barnes, M.E.** (2014). “The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme (1979), by Stephen J. Gould and Richard C. Lewontin”. *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/8239>
4. **Barnes, M.E.** (2014). “Embryology in Origin of Species”. *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/8033>
5. **Barnes, M.E.** (2014). “Stephen Jay Gould”. *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/7559>.
6. **Barnes, M.E.** (2014). “Ontogeny and Phylogeny (1977), by Stephen Jay Gould” *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/8226>
7. **Barnes, M.E.** (2014). “Neural Crest”. *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/8197>
8. **Barnes, M.E.** (2014). “Neurocristopathies”. *Embryo Project Encyclopedia*. ISSN: 1940-5030 <http://embryo.asu.edu/handle/10776/8202>
9. **Barnes, M.E.** (2014). “Edward Drinker Cope’s Law of Acceleration of Growth”. *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/8067>
10. **Barnes, M.E.** (2014). “Franz Keibel” *Embryo Project Encyclopedia*. ISSN: 1940-5030. <http://embryo.asu.edu/handle/10776/7977>

**PRESENTATIONS**

**Invited seminars:**

1. Tulsa Community College seminar to biology faculty. Forthcoming: Spring 2021 \*Remote due to COVID 19.
2. Middle Tennessee State University Math and Science Education seminar series. Forthcoming: April 2021. \*Remote due to COVID 19.
3. Arizona State University Research for Inclusive Science Education (RISE) center seminar series, Forthcoming: March 2021. \*Remote due to COVID 19.
4. Rochester Institute of Technology (RIT), Thomas H. Gosnell School of Life Sciences, Georgia Gosnell seminar series. February 24th, 2021. \*Remote due to COVID 19.
5. Arizona State University Science, Ethics, and Religion Conference Lunch and Learn “Religious Cultural Competence in Evolution Education (ReCCEE). February 12th, 2021. \*Remote due to COVID 19.
6. University of Alabama Research on STEM Education (ROSE) seminar series, “Religious Cultural Competence in Evolution Education”. January 2021. \*Remote due to COVID 19.
7. University of Michigan SEISMIC Seminar Series, “Religious Cultural Competence in Evolution Education,” October 2020. \*Remote due to COVID19.
8. Middle Tennessee State University Biology Department Seminar Series, “Religious Cultural Competence in Evolution Education and Beyond,” February 2020.
9. University of Central Florida, Biology Department Seminar Series, “Religious Cultural Competence in Evolution Education,” March 2019.
10. California State University, Sacramento Biology Department Seminar Series, “Religious Cultural Competence in Evolution Education,” March 2019.
11. University of California, Merced Biology Department Seminar Series, “Religious Cultural Competence in Evolution Education,” February 2019.
12. Missouri Western State University Biology Department, “Studying the Science of Science Communication,” January 2019.
13. Fresno State University Biology Department Colloquium Series, “Religious Cultural Competence in Evolution Education,” October 2018.

**Peer reviewed oral presentations (seventeen in total. \*indicates undergraduate students I mentored):**

1. **Barnes, M.E.**, Supriya, K., \*Dunlop, H. M., \*Hendrix, T. M., Sinatra, G. M. (February 2021) “Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students.” Science Educators for Equity Diversity and Social Justice (SEEDS). \*Remote due to COVID19.
2. **Barnes, M.E.**, Supriya, K., \*Dunlop, H. M., \*Hendrix, T. M., Sinatra, G. M. (January 2021) “Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students.” Society for the Advancement of Biology Education Research (SABER) West. \*Remote due to COVID19.
3. **Barnes, M.E.**, Supriya, K., \*Dunlop, H. M., \*Hendrix, T. M., Sinatra, G. M. (January 2021) “Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students.” Tennessee STEM Education Research Conference. \*Remote due to COVID19.
4. **Barnes, M.E.**, Supriya, K., \*Dunlop, H. M., \*Hendrix, T. M., Sinatra, G. M. (November 2020) “Relationships between the Religious Backgrounds and Evolution Acceptance of Black and Hispanic Biology Students.” National Association for Biology Teachers (NABT) Biology Education Research Symposium. \*Remote due to COVID19.
5. **Barnes, M.E.**, \*Maas, S.A., Brownell, S.E. (July 2020) “Christianity as a Concealable Stigmatized Identity (CSI) in graduate biology programs” Society for the Advancement of Biology Education Research (SABER). \*Remote due to COVID 19.
6. **Barnes, M.E**., \*Dunlop H.M., \*Hendrix, T., Sinatra, G.M., Brownell, S.E. (June 2019) “Religious Students' Definitions of Evolution Predict their Acceptance.” International Research Network for the Study of Science and Belief in Society. Birmingham, United Kingdom.
7. **Barnes, M.E**., \*Dunlop H.M., \*Hendrix, T., Sinatra, G.M., Brownell, S.E. (January 2019) “Religious Students' Definitions of Evolution Predict their Acceptance.” Society for the Advancement of Biology Education Research West (SABER West). Irvine, California.
8. **Barnes, M.E.**, Sinatra, G.M., \*Hendrix, T., \*Dunlop, H., Brownell, S.E. (July 2018) “Explaining the Dearth of African Americans in Evolutionary Biology as a Function of Religiosity” Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota.
9. **Barnes, M.E**, Sinatra, G.M., Brownell, S.E. (April 2018) “Atheistic Definitions of Evolution Exacerbate Rejection of Evolution among Religious Students” American Educational Research Association (AERA). New York, New York.
10. **Barnes, M.E**, Sinatra, G.M., Brownell, S.E. (April 2018) “Religiosity and Acceptance of Evolution Predict Career Choices among College Biology Students” American Educational Research Association (AERA). New York, New York.
11. **Barnes, M.E** & Brownell, S.E. (February 2018) “Religious Cultural Competence in Evolution Education (ReCCEE)” Diversity and Inclusion Science Initiative (DISI). Tempe, AZ.
12. **Barnes, M.E.**, & Brownell, S.E. (July 2017) “Towards More Inclusive Evolution Education:  
     A Call to Use Cultural Competence when Teaching Evolution. Society for the Advancement of Biology Education Research (SABER). Minneapolis, MN.
13. **Barnes, M.E.** & Brownell, S.E. (April 2017) “A need for culturally sensitive evolution education: perspectives from college biology instructors and students” American Educational Research Association (AERA) meeting. San Antonio, TX.
14. Brownell, S.E, **Barnes, M.E.** (April 2017) “Instructional Practices of Evolution Instructors at Christian Universities,” National Association for Research in Science Teaching (NARST) San Antonio TX.
15. **Barnes, M.E.** & Brownell, S.E. (February 2017) “How to teach evolution to religious students who may be resistant.” The American Association for the Advancement of Science (AAAS). Boston, MA.
16. **Barnes, M.E**. & Brownell, S.E. (January 2017) “Reducing students' perceived conflict between religion and evolution.” Society for the Advancement of Biology Education Research West (SABER West) meeting. UC Irvine, CA.
17. **Barnes, M.E**. & Brownell, S.E. (November 2016) “Reducing students' perceived conflict between religion and evolution.” National Association of Biology Teachers (NABT) meeting. Denver, CO.
18. **Barnes, M.E.**, Brownell, S.E. (June 2016) “Reducing students' perceived conflict between religion and evolution.” Evolution Meeting. Austin, TX.

**Peer reviewed poster presentations (27 in total. \*indicates undergraduate students I mentored, +indicates graduate students I mentored):**

1. **Barnes, M.E.,** \*Maas, S.A., Brownell, S.E. (November 2020) “Christianity as a Concealable Stigmatized Identity (CSI) in graduate biology programs.” American Society for Cell Biology (ASCB). \*Remote due to COVID 19.
2. **Barnes, M.E.,** \*Maas, S.M., Brownell, S.E., (February 2020) “Christianity as a Concealable Stigmatized Identity among Biology Graduate Students.” Society for Personality and Social Psychology (SPSP). New Orleans, Louisiana.
3. **Barnes, M.E**., \*Edwards, B., \*Roberts, J.A., Brownell, S.E. (July 2020) “Undergraduate Perceptions of Bioethics Topics: A Pilot Study.” Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota. \*Remote due to COVID 19.
4. **Barnes, M.E., \***Roberts, J.A., Brownell, S.E. (July 2020) “Testing Religious Cultural Competence in Evolution Education Nationwide.”Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota. \*Remote due to COVID 19.
5. **Barnes, M.E.,** **\***Truong, J.M., Grunspan, D.Z., Brownell S.E. (February 2020) “Are Scientists Based Against Christians?” Society for Personality and Social Psychology (SPSP). New Orleans, Louisiana.
6. **Barnes, M.E.,** Maas, S.M., Brownell, S.E., (February 2020) “Christianity as a Concealable Stigmatized Identity among Biology Graduate Students.” Society for Personality and Social Psychology (SPSP). New Orleans, Louisiana.
7. **Barnes, M.E., \***Roberts, J.A., Brownell, S.E. (August 2019) “Testing Religious Cultural Competence in Evolution Education Nationwide: A Pilot Study.”Southwestern Association of Biological Anthropologists. Tempe, Arizona.
8. **Barnes, M.E.,** Brownell, S.E. (July 2019) “Testing Religious Cultural Competence in Evolution Education Nationwide: A Pilot Study.”Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota.
9. **Barnes, M.E**., **\***Truong, J.M., Grunspan, D., Brownell, S.E. (July 2019) “Exploring the impact of student religiosity on faculty perceptions of potential PhD students in biology.” Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota.
10. **Barnes, M.E.,** **\***Truong, J.M., Grunspan, D.Z., Brownell S.E. (January 2019) “Exploring the Impact of Student Religiosity on Faculty Perceptions of Competence, Hireability, and Likeability of Potential PhD Students in Biology.” Society for Personality and Social Psychology (SPSP). Portland, Oregon.
11. **Barnes, M.E.,** **\***Truong, J.M., Grunspan, D.Z., Brownell S.E. (January 2019) “Exploring the Impact of Student Religiosity on Faculty Perceptions of Competence, Hireability, and Likeability of Potential PhD Students in Biology” Society for the Advancement of Biology Education Research West (SABER West). Irvine, California.
12. **Barnes, M.E**. & Brownell, S.E. (August 2017) “A call to use cultural competence when teaching evolution to religious undergraduate students: Introducing Religious Cultural Competence in Evolution Education (ReCCEE)”. International Society for Evolution, Medicine, and Public Health (ISEMPH) meeting. Groningen, Netherlands.
13. **Barnes, M.E**. & Brownell, S.E. (April 2017) “Explaining the dearth of African Americans in evolutionary biology as a function of religiosity”. American Educational Research Association (AERA) meeting. San Antonio, TX.
14. **Barnes, M.E.** & Brownell, S.E. (February 2017) “The Impact of a Short Evolution Module on Students' Perceived Conflict with Evolution” The American Association for the Advancement of Science (AAAS). Boston, MA.
15. **Barnes, M.E**. & Brownell, S.E. (January 2017) “The Survey Matters: Instructors Using Different Surveys to Measure Acceptance of Evolution May Come to Different Conclusions about their Students” Society for the Advancement of Biology Education Research West (SABER West) meeting. UC Irvine, CA.
16. **Barnes, M.E.** & Brownell, S.E. (January 2017) “The Impact of a Short Evolution Module on Students' Perceived Conflict with Evolution” Institute for the Science of Teaching and Learning (ISTL). Tempe, AZ.
17. **Barnes, M.E**. & Brownell, S.E. (November 2016) “Instructors Using Different Surveys to Measure Acceptance of Evolution May Come to Different Conclusions about their Students”. National Association of Biology Teachers (NABT) meeting. Denver, CO.
18. **Barnes, M.E**., Brownell, S.E. (July 2016) “Addressing potential conflict between students’ religious beliefs and evolution: instructor attitudes, practices, and barriers” Evolution Meeting. Austin, TX.
19. **Barnes, M.E**., **\***Truong, J.M., Brownell, S.E. (July 2016) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, MN.
20. **Barnes, M.E**. & Brownell, S.E. (June 2016) “Reducing students' perceived conflict between religion and evolution.” Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, MN.
21. **Barnes, M.E.**, Brownell, S.E. (June 2016) “Addressing potential conflict between students’ religious beliefs and evolution: instructor attitudes, practices, and barriers” Evolution Meeting. Austin, TX.
22. **Barnes, M.E.** & Brownell, S.E. (June 2016) “Reducing students' perceived conflict between religion and evolution.” Human Behavior and Evolution Society (HBES) meeting. Vancouver, Canada.
23. **Barnes, M.E.**, Brem, S.K., Brownell, S.E.(February 2015).Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges. The American Association for the Advancement of Science (AAAS). San Jose, CA.
24. **Barnes, M.E.**, Brem, S.K., Brownell, S.E.(July 2015) Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges. Society for the Advancement of Biology Education Research Conference (SABER). Minneapolis, MN.
25. **Barnes, M.E.**,Brem, S.K., Brownell, S.E.(June 2015). Pedagogies of Professors Teaching Evolution at Secular versus Christian Colleges. International Society for Evolutionary Medicine Conference. Tempe, AZ.
26. **Barnes, M. E.** Husman, J., Brem, S.K. (February 2015). Politics, Morality, and Science: An extended Analysis. Society for Personality and Social Psychology Conference (SPSP). Long Beach, CA.
27. **Barnes, M. E.** Husman, J., Brem, S.K. (November 2013). Politics, Morality, and Science: An Analysis of the Social Factors Influencing Acceptance of Biological Evolution. Poster Presentation. Southwest Consortium for Innovative Psychology in Education Conference (SCIPIE). Tucson, AZ.

**MENTORSHIP**

**Trainees mentored in individual apprenticeships in biology education research**

1. Mariana de Araujo Bryan, MTSU undergraduate, spring 2021
2. Alexa Summersill, MTSU undergraduate, spring 2021
3. Aaron Gatewood, MTSU undergraduate, spring 2021
4. Madeline Aednes, MTSU undergraduate, spring 2021
5. Chloe Bowen, MTSU undergraduate, winter 2020 - present
6. Laine Elizabeth Matthews, MTSU undergraduate, winter 2020 - present
7. Thipphaphone Niravong, MTSU undergraduate, winter 2020 - present
8. Lisa Hanson, MTSU Ph.D. student, fall 2020 - present
9. Baylee Edwards, ASU undergraduate, spring 2020 – present
10. Taya Misheva, ASU Ph.D. student, fall 2019 – present
11. Joudi Alkallaa, high school student, fall 2020
12. Julie Roberts, ASU undergraduate, spring 2019 – fall 2020
13. Samantha Maas, ASU undergraduate, spring 2019 – fall 2020
14. Hayley Dunlop, ASU undergraduate, 2016-2019

Commentary: Won Arizona State University’s Edward and Linda Birge Scholarship Award for her research in biology education. Hayley was accepted to 6 medical schools and chose to complete a Master’s in Public Health at Edinburgh before starting medical school.

1. Taijia Hendrix, ASU undergraduate, 2016-2018

Commentary: Won Arizona State University’s True Grit award in recognition of impressive academic achievements and unusual path in the School of Life Sciences at ASU. Taija is now a middle school science teacher.

1. Jasmine Truong, ASU undergraduate, 2015-2018

Commentary: Won the Arizona State University Dean's Medal Award.  This is the highest undergraduate award that one can receive in the College of Liberal Arts and Sciences at ASU. Jasmine is now a graduate student in the Johns Hopkins Global Health program.

1. Aditya Ponnapalli, ASU undergraduate, 2016
2. Samantha Belcher, ASU undergraduate, 2015
3. Monro Obenauer, ASU undergraduate, 2015

**Mentee oral presentations (3 in total. +indicates a graduate student presentation, \*indicates undergraduate)**

1. **+ Misheva, T.,** Barnes, M.E., Brownell, S.E (October 2020) “Uncovering Validity Issues with the Measure of Acceptance of the Theory of Evolution (MATE)” Southwestern Association of Biological Anthropologists. \*Remote due to COVID 19.
2. Barnes, M.E., \***Dunlop H.M.,** Hendrix, T., Sinatra, G.M., Brownell, S.E. (January 2019) “Religious Students' Definitions of Evolution Predict their Acceptance.” Society for the Advancement of Biology Education Research West (SABER West). Irvine, California.
3. **\*Truong, J.M.,**Barnes, M.E., Brownell, S.E. (January 2018) “Using Cultural Competence to Improve the Experiences of Religious Students in Biology Classes” Society for the Advancement of Biology Education Research West (SABER West) meeting. Irvine, CA.

**Mentee poster presentations (29 in total. +indicates a graduate student presentation, \*indicates undergraduate)**

1. **\*Roberts, J.,** Barnes, M.E., Brownell, S.E. (January 2021). “Perceptions of Evolution among Muslim Undergraduate Biology Students in the United States.” American Association for the Advancement of Science (AAAS). Virtual due to COVID19.
   1. Commentary: placed top three in the poster presentation competition for the science and society section.
2. **+ Misheva, T.,** Barnes, M.E., Brownell, S.E (Forthcoming: February 2021) “Uncovering Validity Issues with the Measure of Acceptance of the Theory of Evolution (MATE)” American Association for the Advancement of Science (AAAS). \*Remote due to COVID 19.
3. **\*Roberts, J.,** Barnes, M.E., Brownell, S.E. (December 2020). “Perceptions of Evolution among Muslim Undergraduate Biology Students in the United States.” American Society for Cell Biology (ASCB). Virtual due to COVID19.
4. **\*Edwards, B**., Barnes, M.E., Roberts, J., Brownell, S.E. (November 2020) “Undergraduate Perceptions of Bioethics Topics: A Pilot Study.” National Association of Biology Teachers (NABT). \*Remote due to COVID 19.
5. **\*Edwards, B**., Barnes, M.E., Roberts, J., Brownell, S.E. (July 2020) “Undergraduate Perceptions of Bioethics Topics: A Pilot Study. Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota. \*Remote due to COVID 19.
6. **\*Roberts, J.,** Barnes, M.E., Brownell, S.E. (July 2020). “Perceptions of Evolution among Muslim Undergraduate Biology Students in the United States.” Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota.
7. **+ Misheva, T.,** Barnes, M.E., Brownell, S.E (July 2020) “Uncovering Validity Issues with the Measure of Acceptance of the Theory of Evolution (MATE)” Society for the Advancement of Biology Education Research (SABER). \*Remote due to COVID 19.
8. **\*Maas, S.M,** Barnes, M.E., Brownell, S.E. (July 2020). “Exploring the Christian “Leaky Pipeline” in Academic Biology.” Society for the Advancement of Biology Education Research (SABER). Minneapolis, Minnesota.
9. Barnes, M.E., \***Maas, S.M.**, Brownell, S.E., (February 2020). “Christianity as a Concealable Stigmatized Identity among Biology Graduate Students.” American Association for the Advancement of Science (AAAS) meeting. Seattle Washington.
10. Barnes, M.E., \***Maas, S.M.**, Brownell, S.E., (January 2020). “Exploring Christianity as a Concealable Stigmatized Identity (CSI) among Biology Graduate Students.” Society for the Advancement of Biology Education Research (SABER) West meeting. Irvine, California.
11. Barnes, M.E., \***Maas, S.M.**, Brownell, S.E., (November 2019). “Exploring Christianity as a Concealable Stigmatized Identity (CSI) among Science Graduate Students.” Southwestern Association of Biological Anthropologists 7th Annual Conference. Tempe, AZ.
12. Barnes, M.E., \***Dunlop, H.M**., Holt, E., Brownell, S.E., (July 2019). “Different Instruments used to Measure Acceptance of Evolution Leads to Different Research Findings.” Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, MN.
13. Barnes, M.E., \***Dunlop, H.M**., Holt, E., Brownell, S.E., (March 2019). “Different Instruments used to Measure Acceptance of Evolution Leads to Different Research Findings.” Arizona State University School of Life Sciences Undergraduate Research (SOLUR) Symposium. Tempe, Arizona.
14. Barnes, M.E., \***Dunlop, H.M**., Holt, E., Brownell, S.E., (February 2019). “Different Instruments used to Measure Acceptance of Evolution Leads to Different Research Findings.” American Association for the Advancement of Science (AAAS) meeting. Washington D.C.
15. Barnes, M.E., \***Dunlop, H.M**., Holt, E., Brownell, S.E., (January 2019). “Different Instruments used to Measure Acceptance of Evolution Leads to Different Research Findings.” Society for the Advancement of Biology Education Research (SABER) West meeting. Irvine, California.
16. Barnes, M.E., Sinatra, G.M., \***Dunlop, H.**, Hendrix, T., Brownell, S.E. (July 2018) **“**Atheistic definitions of acceptance of evolution exacerbate rejection of evolution among religious students.”Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, Minnesota.
17. Barnes, M.E., Sinatra, G.M., \***Dunlop, H.**, Hendrix, T., Brownell, S.E. (January 2018) **“**Atheistic definitions of acceptance of evolution exacerbate rejection of evolution among religious students.”Society for the Advancement of Biology Education Research (SABER) West meeting. Irvine, California.
18. Barnes, M.E., Sinatra, G.M., \***Dunlop, H.**, Hendrix, T., Brownell, S.E. (July 2017) **“**The survey matters: instructors using different surveys to measure acceptance of evolution may reach different conclusions about their students.”Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, Minnesota.
19. **\*Truong, J.M.,** Barnes, M.E., Brownell, S.E. (July 2017) “Can a five-minute introduction to an evolution module reduce students’ level of perceived conflict between evolution and religion?” Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, MN.
20. Barnes, M.E., Sinatra, G.M., \***Dunlop, H.**, Hendrix, T., Brownell, S.E. (April 2017) **“**The survey matters: instructors using different surveys to measure acceptance of evolution may reach different conclusions about their students.”Arizona State University School of Life Sciences Undergraduate Research (SOLUR) Symposium. Tempe, Arizona.
21. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (April 2017) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” School of Life Sciences Faculty Septennial Review. Tempe, AZ.
22. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (March 2017) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” School of Life Sciences Undergraduate Research (SOLUR) Symposium. Tempe, AZ.
23. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (February 2017) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” The Association for the Advancement of Science (AAAS). Boston, MA.
24. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (January 2017) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” Society for the Advancement of Biology Education Research West (SABER West) meeting. Irvine, CA.
25. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (January 2017) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” Institute for the Science of Teaching and Learning (ISTL). Tempe, AZ.
26. Barnes, M.E., Sinatra, G.M., \***Dunlop, H.**, Hendrix, T., Brownell, S.E. (January 2017) **“**The survey matters: instructors using different surveys to measure acceptance of evolution may reach different conclusions about their students.”Society for the Advancement of Biology Education Research (SABER) West meeting. Irvine, California.
27. Barnes, M.E., \***Hendrix, T.**, Brownell, S.E. (January 2017) **“**Do Christian Biology Students Experience Stereotype Threat?”Society for the Advancement of Biology Education Research (SABER) West meeting. Irvine, California.
28. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (July 2016) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” Society for the Advancement of Biology Education Research (SABER) meeting. Minneapolis, MN.
29. Barnes, M.E., \***Truong, J.M.,** Brownell, S.E. (March 2016) “How identity, biology content, and instructional practices impact religious students’ sense of belonging in the biology classroom” School of Life Sciences Undergraduate Research (SOLUR) Symposium. Tempe, AZ.

**AWARDS**

**National Science Foundation Graduate Research Fellowship Award (NSF GRFP)**, 2015 – 2020

**Graduate Excellence Award, Arizona State University,** 2015, 2017, and 2018

**ASU Faculty Women’s Association Distinguished Graduate Student Award**, 2018

**ASU Graduate & Professional Student Association Outstanding Mentor Award**, 2017

**American Association for the Advancement of Science (AAAS) research poster competition in education**. 2nd place, 2017

**National Association for Biology Teacher (NABT) research poster competition on the scholarship of teaching and learning.** 2nd place, 2016.

**Travel Awards:**

**Society for Science and Belief in Society**

* Awarded $1,200 and hotel accommodations to travel and give a talk at an international conference in South Africa for researchers studying perceptions of science and religion. Awarded July 2020. \*cancelled due to COVID 19

**Society for Science and Belief in Society**

* Awarded $1,200 and hotel accommodations to travel and give a talk at an international conference in London for researchers studying perceptions of science and religion. Awarded July 2019.

**American Anthropological Association Travel Award**

* Awarded $600 to cover airfare, hotel, and registration to present an invited talk at the American Anthropological Association (AAPA) meeting. Awarded April 2018.

**ASU School of Life Sciences Travel Grant**

* Awarded $400 to cover registration, travel, and hotel costs to present at the American Educational Research Association (AERA) meeting. Awarded April 2018.

**ASU Graduate College Travel Grant**

* Awarded $450 to cover Airfare and Registration costs to present at the Society for the Advancement of Biology Education Research (SABER) meeting. Awarded July 2017.

**ASU Graduate and Professional Student Association (GPSA) Travel Grant**

* Awarded $950 to cover lodging and transportation to present at the Society for Advancement of Biology Education Research (SABER) meeting. Awarded July 2017.

**ASU School of Life Sciences Travel Grant**

* Awarded $400 to cover registration, travel, and hotel costs to present at the National Association of Biology Teachers (NABT) meeting. Awarded September 2016.

**ASU School of Life Sciences Travel Grant**

* Awarded $400 to cover registration, travel, and hotel costs to present at the Society for the Advancement of Biology Education Research. Awarded June 2016.

**ASU Graduate Education Travel Grant**

* Awarded $500 to cover registration, travel, and hotel costs to present at the Human Behavior and Evolution Society (HBES) conference. Awarded March 2016.

**ASU Biology and Society Travel Grant**

* Awarded $1600 to cover registration, travel, and hotel costs to present at the American Association for Advancement of Science (AAAS) 2015 conference. Awarded October 2014.

**ASU School of Life Sciences Travel Grant**

* Awarded $400 to cover registration, travel, and hotel costs to present at the Southwest Consortium for Innovative Psychology in Education (SCIPIE) 2013 conference. Awarded November 2013.

**SERVICE**

* Ad-hoc reviewer for *Evolution: Education and Outreach (6)*, 2018 - 2021.
* Ad-hoc reviewer for *BioScience* *(1),* 2020
* Ad-hoc reviewer for *Journal of Research in Science Teaching* *(1),* 2020
* Ad-hoc reviewer for *School Science and Mathematics (1)*, 2019
* Ad-hoc reviewer for *CBE Life Sciences Education (2)*, 2018 - 2019
* Ad-hoc reviewer for *The Journal of Education Research (1)*, 2017.
* Ad-hoc reviewer for *The American Biology Teacher (5)*, 2016 - 2020.
* Invited scientist speaker at the Templeton Foundation program “Science and Faith Roundtable”, 2017.
* Mentor in an NSF-GRFP semester long workshop for graduate students applying to the NSF GRFP, 2015.

**Professional Associations:**

* *American Association for the Advancement of Science (AAAS)*
* *Society for the Study of Evolution (SSE)*
* *Society for the Advancement of Biology Education Research (SABER)*
* *National Association of Biology Teachers (NABT)*
* *National Association for Research in Science Teaching (NARST)*
* *American Educational Research Association (AERA)*

**PRESS**

* **Profile highlighted on American Association for the Advancement of Science website (2021):** <https://www.aaas.org/sites/default/files/2021-02/Barnes.pdf>
* **Nashville News5 segment “Issues of Faith” interview on reducing tension between religion and Evolution (2021):** <https://www.newschannel5.com/plus/issues-of-faith-relationship-between-science-and-religion>
* **Sciencenewsnet (2020):** “MTSU researcher-led study: Instructors need to address compatibility of religion, science while teaching evolution. Teaching gap could hurt interest among minority biology students”<https://sciencenewsnet.in/mtsu-researcher-led-study-instructors-need-to-address-compatibility-of-religion-science-while-teaching-evolution/>. **Also in:**
  + **WGNS news radio (2020):** <https://www.wgnsradio.com/article/64840/mtsu-researcher-led-study-instructors-need-to-address-compatibility-of-religion-science-while-teaching-evolution>.
  + **MTSU News (2020):** <https://mtsunews.com/researcher-led-evolution-study-results-published/>
  + **News wise (2020)**:<https://www.newswise.com/articles/mtsu-researcher-led-study-instructors-need-to-address-compatibility-of-religion-science-while-teaching-evolution>
* **WGNS radio interview on research on reducing tension between religion and evolution (2020)** <https://www.wgnsradio.com/article/64026/focus-on-mtsu>
* **Times Higher Education (2020)** “US biologists ‘biased’ against evangelical students, says study”: <https://www.timeshighereducation.com/news/us-biologists-biased-against-evangelical-students-says-study>
* **Scientific American (2018**) “Teachers Help One Another Bring Evolution Back to the Classroom”**:** <https://www.scientificamerican.com/article/teachers-help-one-another-bring-evolution-back-to-the-classroom/>
* **Smithsonian (2018)** “How to talk with Evangelicals about Evolution”:[https://www.smithsonianmag.com/science-nature/how-to-talk-evangelicals-evolution-180968839/](https://www.smithsonianmag.com/science-nature/how-to-talk-evangelicals-evolution-180968839/%20)
* **Skeptic Magazine (2018) “**How to Teach Evolution to Religious Students**”**
* **Undark (2018)** <https://undark.org/article/evolution-smithsonian-traveling-exhibit/>
* **AZ State Press (2018)** <http://www.statepress.com/article/2018/02/spscience-research-roundup-and-the-week-in-science-and-technology>
* **Scientific American (2017)** “Dissent with modification: soothing evolution-religion tensions in the classroom**:** <https://www.scientificamerican.com/article/dissent-with-modification-soothing-evolution-religion-tensions-in-the-classroom1/>
* **BBC “Science in Action” podcast interview on evolution education research (2017):** <https://www.youtube.com/watch?v=4hoK7UCRbbM>
* **NPR Phoenix interview on evolution education research (2017):** <https://www.youtube.com/watch?v=5ca91PRYwa0>
* **Tonic, Vice magazine’s science vertical, interview on persuading climate change skeptics (2017)** “There's a Strategy to Persuade Climate Change Deniers”**:** <https://tonic.vice.com/en_us/article/a3d35a/how-to-sway-a-climate-change-skeptic>
* **Science 2.0 (2017)** “Evolution And Religion: New Insight Into Instructor Attitudes In Arizona”**:** <http://www.science20.com/news_articles/evolution_and_religion_new_insight_into_instructor_attitudes_in_arizona-173150> .**Also in:**
  + **Phys.org (2017)** <http://phys.org/news/2016-05-evolution-religion-insight-instructor-attitudes.html>
  + **News United (2017)** <http://www.newsunited.com/evolution-and-religion-new-insight-news/29623704/>
  + **Atheism on Trendolizer (2017):** <http://atheism.trendolizer.com/2016/05/evolution-and-religion-new-insight-into-instructor-attitudes-in-arizona.html>
* **Featured on SOLS ASU News site (2017):** <https://asunow.asu.edu/20170327-evolution-and-religion-finding-middle-ground-biology-classroom>
* **AAAS talk 2017:** <https://undark.org/2017/02/23/scientists-work-trust-issues/>
* **Jersey Tribune (2016):** <http://jerseytribune.com/2016/05/19/evolution-and-religion-new-insight-into-instructor-attitudes-in-arizona/>
* **Arizona Google News (2016):** <https://news.google.com.ph/news/section?cf=all&hl=en&pz=1&ned=en_ph&q=Arizona&ict=clu_top>
* **Science Daily (2016):** <https://www.sciencedaily.com/releases/2016/05/160519144858.htm>
* **CEH (2016):** <http://crev.info/2016/05/teachers-squeamish-about-evolution/>
* **ASU Now (2106):** <https://asunow.asu.edu/20160518-evolution-and-religion-new-insight-instructor-attitudes-arizona>
* **Lutheran Alliance for Faith Science and Technology (2016):** <http://luthscitech.org/arizona-state-researchers-study-instructors-handle-perceived-conflicts-evolution-religion/>
* **E-learning feeds (2016):** <http://elearningfeeds.com/beyond-teaching-the-facts-how-to-teach-evolution-to-religious-students-who-dont-believe/>

**BLOGS:**

1. **Small Pond Science** (2020) “Using Religious Cultural Competence to Talk to Students and the Public about Evolution: <https://smallpondscience.com/2020/10/14/using-religious-cultural-competence-to-talk-to-students-and-the-public-about-evolution/>
2. **Science and Belief in Society** (2020) “Half of college biology students in the United States think evolution is atheistic”: <https://scienceandbeliefinsociety.org/2020/11/17/half-of-college-biology-students-in-the-united-states-think-evolution-is-atheistic/>
3. **Biologos** (2020)“Evolution Education on the Rise”: <https://biologos.org/post/evolution-education-on-the-rise/>
4. **Most read TeachTech blog of 2016:** <http://asutechwebs.blogspot.com/2016/05/beyond-teaching-facts-how-to-teach.html>

**Teaching Experience:**

* **Instructor, Department of Biology, MTSU, BIOL1110: General Biology I, 2020 – present** 
  + I am the sole instructor of a first semester course in the general biology series that majors are required to take for their degree.
* **Instructor, School of Life Sciences, ASU, BIO 194: Biology Early Start Program, 2015-2019**
  + Developed and taught an introductory biology curriculum, for five consecutive years, in a bridge program for incoming freshmen biology majors. These lessons focused on the nature of science, evolution, genetics, and cellular biology and were meant to immerse students in biology content before they started their introductory biology courses.
* **Instructor, School of Life Sciences, BIO 591: Papers in Inclusive Teaching in College science, 2019 – 2020**
  + Guided students in a weekly seminar class on current readings in science education related to how to become more inclusive science teachers.
* **Graduate Teaching Assistant, School of Life Sciences, spring 2017**
  + Helped design and teach a Biology Education Research course for undergraduate and graduate students. This course was designed and implemented as a Course-Based Undergraduate Research Experience (CURE) and led to a co-authored publication with 16 undergraduate and graduate students.
    - BIO 498/598: Biology Education Research
* **Instructor, School of Life Sciences, fall 2015 & 2016**
  + Developed and taught lessons on evolutionary science.
    - BIO 189 Life Sciences Career paths
* **Teacher, Graduate Partners in Science Education (GPSE), 2013-2017**
  + In collaboration with middle school teachers, I designed and taught an afterschool STEM program for 6th-8th graders as well as mentored students who are working on individual research projects. In 2015, my students won 2nd place and in 2016 my students won 1st place at the annual ASU GPSE research science fair competitions for their research.
* **Graduate Teaching Assistant, fall 2014**
  + Under Dr. James Elser, I helped teach a course for aspiring biology majors who scored low on their math placement exams. This was a survey course with ~100 students that covered all major introductory topics in biology including molecular biology, genetics, ecology, evolution, and nature of science. I ran a fraction of lectures and facilitated active learning sessions as well as graded exams and assignments.
    - BIO 151: Principles of Biology