

Kelsey M. Gray, PhD

Instructional Assistant Professor, Biological Sciences
 Assistant Director, Grand Challenges Initiative

Chapman University
 One University Drive
 Orange, CA 92866

EDUCATION

PhD Genetics and Molecular Biology 2012-2018
 University of North Carolina, Chapel Hill, North Carolina
 Research Advisor: A. Gregory Matera, PhD
BS Biomedical Science, minor in Philosophy 2008-2012
 The Ohio State University, Columbus, Ohio
 Research Advisor: Amanda Toland, PhD

PROFESSIONAL EXPERIENCE

Chapman University, Orange, California 2020-Present
 Instructional Assistant Professor and Grand Challenges Initiative Assistant Director
Drepung Loseling Monastic University, Mundgod, India 2019-2020
 Fulbright-Nehru biology instructor and education research fellow
Morehouse College, Atlanta, Georgia 2018
 Men's Health lab instructor with FIRST postdoctoral program
Emory University, Atlanta, Georgia 2018-2019
 Postdoctoral science pedagogy instructor and education researcher
Durham Technical Community College, Durham, North Carolina 2017
 Introduction to Biology adjunct instructor
University of North Carolina, Chapel Hill, North Carolina 2012-2018
 Genetics and Molecular Biology graduate research assistant and education researcher
University of Texas Southwestern Medical Center, Dallas, Texas 2011
 Molecular Biology undergraduate research assistant
The Ohio State University, Columbus, Ohio 2009-2012
 Genetics undergraduate research assistant

TEACHING AND MENTORING

Inquiry Science for English Language Learners
 Drepung Monastic University, Mundgod, India 2019

- Instructor, Tibetan Buddhist monks
- Leverage visual, concrete, and hands-on cues to contextualize English language instruction for Tibetan monks interested in advanced science education

Genes and Cells, Drepung Monastic University, Mundgod, India 2019

- Instructor, Tibetan Buddhist monks
- Lead semester course that actively engages students in small group work, class discussions, group projects and presentations, and experimentation

Development and Physiology, Drepung Monastic University, Mundgod, India 2019

- Instructor, Tibetan Buddhist monks
- Explore topics including cell differentiation and organ systems through small group work, class discussions, group projects and presentations, and experimentation

- Biological Foundations**, Kent State University at Stark, North Canton, OH 2019
- Guest instructor, first-year undergraduates
 - Engage students in the topic of diversity in science using “Scientist Spotlight” assignment and facilitate group mini-projects on organelles
- Genes and Cells**, Drepung Monastic University, Mundgod, India 2019
- Instructor, Tibetan Buddhist nuns
 - Lead eight-day intensive summer science courses that engage students in small group work, class discussions, and group projects and presentations
- Immunology and Disease**, Gaden Monastic University, Mundgod, India 2019
- Instructor, Tibetan Buddhist monks
 - Lead eight-day intensive summer science courses that engage students in small group work, class discussions, and group projects and presentations
- Science Pedagogy**, Emory University, Atlanta, GA 2018-2019
- Instructor, Tibetan Buddhist monks and nuns
 - Design active-learning projects to practice use of teaching techniques in a class of six Tibetan Buddhist monks and nuns who will teach science at their monasteries in India
- Men’s Health**, Morehouse College, Atlanta, GA 2018
- Lab Instructor, First Year Experience Course
 - Guide freshman students in laboratory activities, presentations, and writing assignments relating course topics to their everyday lives
- Foundations of Modern Biology**, Emory University, Atlanta, GA 2018
- Guest Instructor, undergraduates
 - Promote group discussion following clicker questions and use POGIL assignment as formative assessment
- Evolution and Ecology**, Gaden and Drepung Monastic Universities, Mundgod, India 2018
- Instructor, Tibetan Buddhist monks and nuns
 - Lead eight-day intensive summer science courses that engage students in small group work, class discussions, and group projects and presentations
- Neuroscience and Behavioral Biology**, Emory University, Atlanta, GA 2018
- Guest Instructor, undergraduates
 - Design in-class activities and formative assessments including small-group discussions and experimental predictions rooted in published research for approximately 50 students
- Introduction to General Biology**, Durham Technical Community College, Durham, NC 2017
- Instructor, undergraduates
 - Design active-learning activities to engage a class of 40 students in a semester-long course including topics such as cellular metabolism, genetics, and evolution
- Laboratory training mentor**, University of North Carolina, Chapel Hill, NC 2013-2017
- Guide laboratory skills development and critical thinking skills related to experiments for high school, undergraduate, and graduate students
- Laboratory Techniques**, University of North Carolina, Chapel Hill, NC 2015-2016
- Create and lead three-day workshops on immunoblotting for 10 students in the Postbaccalaureate Research Education Program
 - Provide pre-class learning and assessment materials, in-class worksheets, and hands-on experience with immunoblotting
- Developmental Biology**, University of North Carolina, Chapel Hill, NC 2016
- Guest Instructor, undergraduates
 - Design in-class activities and formative assessments including small-group discussions and experimental predictions for two class meetings with approximately 25 students

- Introductory Biology**, North Carolina A&T State University, Greensboro, NC 2016
- Guest Instructor, undergraduates
 - Organize in-class activities including using simple models of chromosomes to explain inheritance patterns with approximately 40 students
- Advanced Molecular Biology**, University of North Carolina, Chapel Hill, NC 2016
- Learning Coach, first-year graduate students
 - Plan weekly activities that encourage a group of eight students in the Initiative for Maximizing Student Development program to think critically about primary literature, design experiments, and interpret data
- Introduction to Biological Chemistry**, University of North Carolina, Chapel Hill, NC 2015
- Guest Instructor, undergraduates
 - Organize primary literature reading with guided questions and in-class activities including experimental predictions for approximately 40 students
- Macromolecular Structure**, University of North Carolina, Chapel Hill, NC 2014
- Guest Instructor, undergraduates
 - Design pre-class reading and assignments, in-class activities, and learning assessments for an upper-level biochemistry course with approximately 40 students
- Human Genetics**, University of North Carolina, Chapel Hill, NC 2013
- Teaching Assistant, undergraduates
 - Prepare and deliver recitation sections, deliver two guest lectures, and aid in student-led development of research projects/presentations with approximately 40 students

REFEREED PUBLICATIONS

- Gray K**, Achat-Mendes C, Kruger AC, et al. Boundary exchange: Introduction of biosciences in Tibetan Buddhist monastic education. *In Review*.
- Gray K**, Namgyal D, Purcell J, Samphel T, Sonam, T, Tenzin K, Tsering D, Worthman CM, Eisen, A. (2020) Found in Translation: Collaborative contemplations of Tibetan Buddhism and Western science. *Front Commun.* 4:76. doi:10.3389/fcomm.
- Gray K** and Eisen A. (2019) The Emory-Tibet Science Initiative: Rethinking cross-cultural science and teaching. *JMBE*, doi:10.1128/jmbe.v20i1.1618
- Matera AG, Raimer AC, Schmidt C, Kelly J, Droby G, Baillat D, ten Have S, Lamond A, Wagner E, **Gray KM**. (2019) Composition of the Survival Motor Neuron (SMN) Complex in *Drosophila melanogaster*. *G3: Genes, Genomes, Genetics*, doi.org/10.1534/g3.118.200874
- Gray KM**, Kaifer KA, Baillat D, Wen Y, et al. (2018) Self-oligomerization regulates stability of Survival Motor Neuron (SMN) protein isoforms by sequestering an SCF^{Simb} degron. *MBoC*, doi:10.1091/mbc.E17-11-0627.
- Raimer AC*, **Gray KM***, Matera AG. (2016) SMN – A chaperone for nuclear RNP social occasions? *RNA Biology*, doi:10.1080/15476286.2016.1236168.
- *These authors contributed equally
- Praveen K, Wen Y, **Gray KM**, et al. (2014) SMA-causing missense mutations in survival motor neuron (Smn) display a wide range of phenotypes when modeled in *Drosophila*. *PLoS Genetics*, doi.org/10.1371/journal.pgen.1004489.

PUBLIC SCHOLARSHIP PUBLICATIONS

- Wangyal R and **Gray K**. (29 Apr 2020) Hygiene of Hand and Mind during the Pandemic. *Scientific American Blog*, Scientific American, blogs.scientificamerican.com/observations/hygiene-of-hand-and-mind-during-the-pandemic/

SELECT PRESENTATIONS

- Gray KM, Shreckengost J, Worthman C, Eisen A. (2019)** Modeling Global Citizenship Education in the Tibetan Buddhist monastic science classroom. Poster presentation at Society for the Advancement of Biology Education Research Annual Conference. Minneapolis, MN.
- Gray KM, Shreckengost J, Worthman C, Eisen A. (2018)** Culturally responsive curricula: Tibetan Buddhist monastic attitudes toward and perceptions of science education. Poster presentation at the American Society for Cell Biology Conference. San Diego, CA.
- Gray KM, Shreckengost J, Worthman C, Eisen A. (2018)** Student buy-in across cultures: Tibetan Buddhist monastic attitudes toward science education. Podium presentation at AAC&U Transforming STEM Higher Education Conference. Atlanta, GA.
- Gray KM, Shreckengost J, Worthman C, Eisen A. (2018)** Teaching science across cultures: Tibetan Buddhist monastic experiences, attitudes, and beliefs related to biology education. Roundtable presentation at Society for the Advancement of Biology Education Research Annual Conference. Minneapolis, MN.
- Gray KM, Shreckengost J, Worthman C, Eisen A. (2018)** Culturally responsive science education: Teaching Tibetan Buddhist monastics and beyond. Invited roundtable presentation at IRACDA Annual Conference. Atlanta, GA.
- Gray KM, Shreckengost J, Worthman C, Eisen A. (2018)** Cross-cultural science and teaching: What can we learn from Tibetan Buddhist monastics? Poster presentation at IRACDA Annual Conference. Atlanta, GA.
- Gray KM. et al. (2017)** SCF^{Stmb} mediates degradation of survival motor neuron (SMN) monomers. Poster presentation at the American Society for Cell Biology Conference. Philadelphia, PA.
- Gray KM. et al. (2014)** Modeling SMA-causing point mutations in the fruitfly. Podium presentation at the Annual Spinal Muscular Atrophy Conference. National Harbor, MD.

GRANTS AND FELLOWSHIPS

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| Fulbright-Nehru Academic and Professional Excellence Fellowship | 2019-2020 |
| Source: United States-India Educational Foundation | |
| Role: Principal Investigator | |
| (\$37,000) | |
| National Science Foundation Graduate Research Fellowship | 2013-2016 |
| Source: National Science Foundation | |
| Role: Doctoral Researcher | |
| (\$96,000) | |
| Ohio State University School of Allied Medical Professions Research Scholarship | 2011 |
| Source: OSU School of Allied Medical Professions | |
| Role: Undergraduate Researcher | |
| (\$6,000) | |
| Ohio State University Cancer Center Undergraduate Research Fellowship | 2010 |
| Source: OSU Comprehensive Cancer Center | |
| Role: Undergraduate Researcher | |
| (\$6,000) | |

HONORS AND AWARDS

ASCB/EMBO Annual Conference Travel Award, 2018
 American Society for Microbiology Science Teaching Fellow, 2017
 UNC Department of Genetics Outstanding Poster Award, 2017
 UNC Graduate and Professional Student Federation Travel Award to attend SABER, 2017
 Future Science Educators at UNC Travel Award to attend SABER, 2016
 Bruce Biagi Biomedical Science Award, 2012
 AACR Thomas J. Bardos Science Education Award, 2011

SCIENCE PEDAGOGY TRAINING

Emory FIRST Seminar in College Teaching, 2018
 UNC SPIRE Seminar in College Teaching, 2017
 UNC College Science Teaching Course, 2015
 UNC Summer Series: Teaching Science, 2015

SERVICE AND OUTREACH

SABER Graduate Student/Postdoc Professional Development, *committee member*, 2018-2020
 Atlanta Science Festival Imagining the Future, *instructor*, 2018
 North Carolina DNA Day CONNECT Blog, *writer and editor*, 2016-2017
 Future Science Educators at UNC, *executive board member*, 2015-2017
 Developmental and Stem Cell Biology Club, *co-chair*, 2014-2017
 North Carolina DNA Day, *instructor*, 2013-2017
 Training Initiatives in Biological and Biomedical Science, *board member*, 2013-2017
 Camp Kesem at the Ohio State University, *co-founder and co-chair*, 2011-2012

INTERNATIONAL EDUCATION

Classroom inquiry-based undergraduate research, Columbus, Ohio	2010
<ul style="list-style-type: none"> Designed and led a group research project with students from Pune, Chennai, and Hyderabad, India to study nuclear localization signals (NLS) using online databases in a distance learning class 	
Global Health Initiative at Ohio State University, Hyderabad, India	2010
<ul style="list-style-type: none"> Shadowed physicians in radiology, medical intensive care, and clinical lab 	
Foundation for the International Medical Relief of Children, Huancayo, Peru	2009
<ul style="list-style-type: none"> Shadowed physicians in surgery, pediatrics, and general medicine 	