TEXAS STATE VITA

Eleanor W. Close
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I. ACADEMIC/PROFESSIONAL BACKGROUND

A. NAME: Eleanor W. Close **TITLE:** Professor

B. EDUCATIONAL BACKGROUND

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
Ed.D.	2009	Seattle Pacific University Seattle, WA	Curriculum & Instruction	Teacher Characteristics and Student Learning in Secondary Science
M.S.	2003	University of Washington Seattle, WA	Physics	
B.A.	1996	Bryn Mawr College Bryn Mawr, PA	Physics, Mathematics minor	

C. UNIVERSITY EXPERIENCE

Position	*University*	*Dates*
Professor, Department of Physics	Texas State University	(Sept. 2024 – present)
Associate Professor, Department of Physics	Texas State University	(Sept. 2018 – Aug. 2024)
Assistant Professor, Department of Physics	Texas State University	(Sept. 2014 – Aug. 2018)
Senior Lecturer, Department of Physics	Texas State University	(Sept. 2011 – Aug. 2014)
Assistant Professor, Physics & Science Ed. *Joint appointment in Department of Physics and School of Education* *Promoted to Associate Professor in March 2011, effective September 2011*	Seattle Pacific Univ.	(Sept. 2006 – June 2011)
Visiting Asst. Professor, Physics & Science Ed. *Joint appointment in Department of Physics and School of Education*	Seattle Pacific Univ.	(Sept. 2005 – Aug. 2006)
Visiting Instructor, Department of Physics	Seattle Pacific Univ.	(Sept. 2004 – Aug. 2005)
Adjunct Instructor, Department of Physics	Seattle Pacific Univ.	(Sept. 2003 – Aug. 2004)
Research / Teaching Assistant	Univ. of Washington	(Sept. 2000 – Aug. 2003)

D. RELEVANT PROFESSIONAL EXPERIENCE

Position	*Entity*	*Dates*
Science Department Chair	Louisburg High School, Louisburg, NC	(Jan. 1997 – June 1999)
Physics Teacher	Louisburg High School, Louisburg, NC	(Sept. 1996 – June 1999)

E. OTHER PROFESSIONAL CREDENTIALS (LICENSURE, CERTIFICATION, ETC.)

Teacher Certification, Secondary Science, 1999 (East Carolina University, Greenville, NC)

II. TEACHING

A. TEACHING HONORS AND AWARDS:

College Achievement Award for Excellence in Teaching, College of Science and Engineering, Texas State University, 2017

Alpha Chi Favorite Professor, 2015, 2018 – Named as Favorite Professor by a student being inducted into the Texas State chapter of the Alpha Chi National Honor Society (a new member is a junior or senior with a minimum Texas State GPA of 3.50).

B. COURSES TAUGHT:

At Texas State University:

- Biology 3210: Biology Pedagogy and Learning
- Chemistry 3210: Chemistry Pedagogy and Learning
- Honors 3210: STEM Cognition and Pedagogy
- Honors 3480C: Teaching Physical Science to Children
- Physics 1310: Elementary Physics
- Physics 1430: Mechanics
- Physics 3210: Physics Cognition and Pedagogy
- Physics 3312: Modern Physics
- Physics 4150C: Intersectionality, Imposterism, and Structural Bias in STEM
- US 1100: University Seminar–Honors
- Physics 4321/4221/4121: Undergraduate Research
- Physics 5395: Fundamentals of Research

At Seattle Pacific University (Seattle, WA):

- General Physics I (PHY 1101)
- General Physics II (PHY 1102)
- General Physics III (PHY 1103)
- Physics of Sound (PHY 1140)
- Intermediate Physics (PHY 2321)
- Development of Concepts in Physical Science I (PHY 2567)
- Physics as a Process of Inquiry (PHY 4501)
- Preparation for Teaching Physical Science (PHY 4510)
- Preparation for Teaching Undergraduate Mechanics (PHY 4511)
- Preparation for Teaching Undergraduate Electromagnetism (PHY 4512)
- Preparation for Teaching Undergraduate Waves & Optics (PHY 4513)
- Environmental Science for Elementary Teachers (EDSC 2566)
- Teaching Secondary Science (EDSC 3359)

- Social Studies/Science/Health Methods II (Elementary) (EDSC 4200)
- Science Methods (Elementary) (EDSC 4250)
- Teaching Secondary Science (MAT) (EDSC 6359)

C. GRADUATE THESES/DISSERTATIONS OR EXIT COMMITTEES:

Dissertation Committee, Ph.D., Math: Joni (Schneider) Lindsey. (2015-2018). *Developing Mathematical Identity in Post-Secondary Students.*

Dissertation Committee, Ph.D., Biology: Zachary Nolen. (2015-2017). *Biology Student Sense of Belonging.*

Dissertation Committee, Ph.D., Developmental Education (Curriculum & Instruction): Erin Scanlon. (2015-2017). *Introductory Physics Students' Physics and Mathematics Epistemologies.*

Master's Thesis Committee, M.S., Physics: Olivia Saunders. (2025-present). *Experiences of alumni who worked in the TXST Learning Assistant Program* (working title).

Master's Thesis Advisor, M.S., Physics: Shahrzad Hesaaraki. (2016-2021). *Collaborative Mechanistic Reasoning: A proposed mechanism for learning in interactive instruction.*

Master's Thesis Committee, M.S., Physics: Egla Ochoa-Madrid. (2019-2020). *Analyzing Physics Students' Ethical Reasoning During a Unit on the Development of the Atomic Bomb: A Call for Macro-Ethical Discussions in Physics Classrooms.*

Master's Thesis Advisor, M.S., Physics: Jessica Conn. (2018-2019). *Learning Assistant Preparation Sessions as Locus of Identity Reconciliation* (working title). (Student on hiatus)

Master's Thesis Committee, M.A., Secondary Teaching (Curriculum & Instruction): Stuart Ray. (2015). *The Effects of Project-Based Science on Students' Attitudes and Understanding of High School Chemistry.*

Honors Thesis (Undergraduate): Rebecca Lewis. (2014-2015). *Female Science Anxiety: Causes and Concerns for Elementary Educators.*

Honors Thesis (Undergraduate): Sierra Berry. (2014-2015). *"Our River" Project: Exploring the efficacy of field trips to positively influence children's attitudes toward science and conservation.*

D. COURSES PREPARED AND CURRICULUM DEVELOPMENT:

At Texas State University:

- Physics 1360 and 1370 / Physics 1365: Development of Concepts in Physics 1 and 2. Studio-style courses, using research-based curriculum designed for future teachers and integrating research on physics learning. Course development funded by PhysTEC project; collaboratively developed with Dr. Jennifer Palomino. Courses developed 2016-2017. Condensed to a single course in 2021 course proposal cycle by request of Curriculum & Instruction due to program changes for majors with teacher certification.
- Honors 3210: STEM Cognition and Pedagogy / Biology 3210: Biology Pedagogy and Learning / Chemistry 3210: Chemistry Pedagogy and Learning (stacked courses). An introduction to STEM pedagogy. Students learn key education theories and methods from STEM education research and cognitive science, evaluate the processes of teaching and learning, and examine structures and practices that facilitate and/or inhibit student learning. Students apply what they learn to the teaching of biology / chemistry / physics as they collaborate with faculty as Learning Assistants

for an undergraduate biology / chemistry / physics course and complete a final project. Course(s) developed 2021-2022.

- Physics 3210: Physics Cognition and Pedagogy. An introduction to physics-specific pedagogy and the methods and results of physics education research (PER). Students investigate relevant literature in PER and cognitive science, engage in in-depth discussions about the teaching and learning of physics, and reflect on their own teaching practice in the role of Physics Learning Assistants. Course developed 2013-2014.
- Physics 1430: Lead course reform effort to incorporate research-based curriculum *Tutorials in Introductory Physics* into both lecture and lab components (see details under Learning Assistant Program, Departmental Service). Course reformed 2012-2013.
- Honors 3480C: Teaching Physical Science to Children. New Honors course, taught for the first time in Spring 2013. I designed this course as a studio-style physics course for preservice K-8 teachers, substituting for PHYS 1310 and PHYS 1110. Course content includes both physics concepts and research findings on physics teaching and learning. Course activity is focused on developing deep understanding of fundamental concepts in physical science and how these concepts relate to making sense of our everyday experience. The course also includes a field component at Travis Elementary School, teaching inquiry-based physical science lessons to 5th grade students. Course developed 2012-2013.

At Seattle Pacific University (Seattle, WA):

- General Physics I, II, and III (PHY 1101-1103): implemented course reform in 2003-2004; worked with colleague Stamatis Vokos to re-structure the course and integrate existing research-based instructional materials (primarily *Tutorials in Introductory Physics* and *RealTime Physics*).
- Physics of Sound (PHY 1140): in 2004-2005, developed and taught a lab-based, inquiry-oriented course using *Physics by Inquiry* curriculum on sound and waves (unpublished, used with permission of the curriculum developers) modified for a large-enrollment setting. Taught in 2006, 2007, 2008, and 2011, with continued curriculum development.
- Development of Concepts in Physical Science I (PHY 2567): Course developed as part of new required major for elementary teacher certification candidates (Integrated Studies), using curriculum designed for pre-service and inservice teachers, drawing from *Physics by Inquiry* and *Physics and Everyday Thinking*.
- Social Studies/Science/Health Methods II (Elementary) (EDSC 4200): Course required of elementary teacher certification candidates during first quarter of their student-teaching. Replaced by EDSC 4250: Science Methods in 2009.
- Science Methods (Elementary) (EDSC 4250): Course developed in 2009; designed to include an intensive field experience at the start of the quarter in which students experience lessons from the *Project Learning Tree* curriculum, then select and modify lessons and teach them to groups of elementary students in a local park.
- Teaching Secondary Science (MAT) (EDSC 6359): Science methods for MAT students about to begin their student teaching. I re-designed the course to incorporate research on teaching and learning, using the *Reformed Teaching Observation Protocol* as a theme and introducing national science education standards and research on student ideas through use of *Science Curriculum Topic Study*.

E. FUNDED EXTERNAL TEACHING GRANTS AND CONTRACTS:

Principal Investigator, *Preparing Engaged STEM Teachers through Multi-level Peer Mentoring and Early Teaching Experiences* (NSF DUE-2243458). E. Close, PI; C. Luxford, S. Strickland, K. Collins, J. Van Overschelde, Co-PIs; $1.2M (06/2023-06/2028). (Teaching and research.)

Research component: Investigate the teaching performance of Scholars after employment using special expert access to a vast data lake on Texas students, teachers, and schools. **Teaching component**: Provide scholarship and stipend support to STEM majors who seek K-12 teacher certification. Continue the Learning Assistant initiative in the three-course calculus-based physics sequence. Support a cohort of 6-8 Noyce Scholars each year, resulting in the preparation of an additional 20-30 STEM teachers over the five-year life of the project, with a focus on recruiting physics, chemistry, and mathematics majors. Implement vertical peer mentoring networks including master mentors and Scholars who are student-teachers and in years 1-5 of classroom teaching.

Principal Investigator, *Responsive, Attentive, Dialogic, and InterActive Noyce Scholars (RADIANS)* (NSF DUE-1557405). E. Close, PI; L. Huling, H. Close, C. Luxford, A. Ortiz, Co-PIs; $1.25M (06/2016-05/2023). (Teaching and research.)

Research component: Physics identity development and its relationship to choice of K-12 physics teaching as a career; characterization of physics teacher identity. **Teaching component**: Provide scholarship and stipend support to STEM majors who seek K-12 teacher certification. Continue the Learning Assistant initiative in the three-course calculus-based physics sequence launched through the *Communities and Pathways* project. Support a cohort of 8-10 Noyce Scholars each year, resulting in the preparation of an additional 40-50 STEM teachers over the five-year life of the project, with a focus on recruiting physics, chemistry, and engineering majors.

Principal Investigator, *Fostering Excellence and Increasing Diversity through the Physics Help Center* (Halliburton Foundation Grant 2215). E. Close, PI; D. Donnelly, H. Close, Co-PIs; $15K (09/2013-08/2014). (Program development.)

Support excellent preparation of physics and engineering majors at Texas State University and promote ethnicity and gender diversity by providing a highly interactive environment for peer-to-peer interactions, staffed by Learning Assistants trained to facilitate collaboration among peers with a variety of backgrounds and perspectives.

Co-Principal Investigator, *Earth System Science Education in Western Washington* (IGES ESSEA grant). M. Witiw, PI; E. Close, E. Woo, Co-PIs; $40K (06/2007-10/2009). (Teaching.)

Implement and refine web-based professional development courses in Earth System Science for inservice secondary teachers.

SPU Representative, *Sustainability and Environmental Education for Pre-Service (SEEP)* (EPA grant received by TOTOS). L. Paznokas, PI; ~$100K (2008-2009). (Teaching.)

Design and incorporate environmental and sustainability education activities into content and methods courses for preservice teachers; share activities and outcomes with community of teacher educators.

Senior Personnel, *A Collaborative Preparation Model to Increase the Math and Science Competence of K-12 Preservice Teachers* (Boeing Co. grant). S. Vokos and F. Kline; $140K (2004-2007). (Teaching.)

Collaborate with Resident Master Teacher to design and implement course reforms in content and methods courses for preservice elementary and secondary teachers based on research and best practice.

Senior Personnel, *Adaptation and implementation of research-based curricula in introductory physics courses at Seattle Pacific University* (NSF grant DUE-0310583). S. Vokos, PI; B. Gill, J. Lindberg, L. Seeley, Co-PIs; $88K (09/2003-08/2006). (Teaching and research.)

Implement and assess course reforms in introductory algebra-based physics sequence.

F. SUBMITTED, BUT NOT FUNDED, EXTERNAL TEACHING GRANTS AND CONTRACTS:

Proposals not funded:

Co-Principal Investigator, *Responsive, Attentive, Dialogic, and InterActive Noyce Scholars with Vertical Peer Mentoring (RADIANS2)* (Submitted to NSF DUE-Noyce program, August 2021). H. Close, PI; **E. Close**, C. Luxford, S. Strickland, J. Van Overscheld, Co-PIs; $1.2M (08/2022-07/2027). (Teaching and research.)

Co-Principal Investigator, *Center of Excellence for STEM Scholarship at Texas State University* (Submitted to Department of Defense, May 2017). D. Garcia, PI; E. Close, H. Galloway, Co-PIs; $4.3M (09/2018-08/2023).

Principal Investigator, *Responsive, Attentive, Dialogic, and InterActive Noyce Scholars (RADIANS)* (Submitted to NSF Noyce program, March 2015). E. Close, PI; L. Huling, H. Close, D. Feakes, A. Ortiz, Co-PIs; $1.2M (09/2015-08/2020). (Teaching and research.)

Senior Personnel, *Teaching Residency for Urban and Suburban Schools in Texas (TRUSST)* (Submitted to U.S. Department of Education TQP program, July 2014). R. Harter, PI; P. Werner, R. Garza, S. Seidman, L. Huling, Co-PIs; $7.6M (10/2014-09/2019). (Teaching and program development.)

Co-Principal Investigator, *STEM Teacher Education Pathways Project* (Submitted to NSF Noyce program, March 2014). L. Huling, PI; E. Close, H. Close, D. Feakes, A. Ortiz, Co-PIs; $1.45M (09/2014-08/2018). (Teaching, research, and program development.)

Principal Investigator*, 2015 Halliburton Family Engineering Nights & STEM Teaching Opportunity for Pre-Service Elementary Teachers* (Submitted to the Halliburton Foundation, May 2014). E. Close, PI; A. Ortiz, Co-PI; $10K (09/2014-08/2015). (Teaching, research, and service.)

Co-Principal Investigator, *Texas State University / Halliburton Solving Challenges Pre-Engineering Summer Camp* (Submitted to the Halliburton Foundation, May 2014). A. Ortiz, PI; E. Close, Co-PI; $11K (09/2014-08/2015). (Teaching, research, and service.)

Principal Investigator, *Fostering Excellence and Increasing Diversity through the Physics Help Center* (renewal) (Submitted to the Halliburton Foundation, May 2014). E. Close, PI; D. Donnelly, H. Close, Co-PIs; $15K (09/2014-08/2015). (Teaching and service.)

Co-Principal Investigator, *Freescale and Texas State Physics: Improving STEM Learning and Workforce Preparation through Direct Mutual Engagement* (Freescale Foundation proposal, submitted 08/2013). H. Close, PI; E. Close, D. Donnelly, Co-PIs; $120K (01/2014-12/2016). (Teaching, research, and program development.)

G. FUNDED INTERNAL TEACHING GRANTS AND CONTRACTS:

"Our River" Project: Exploring the efficacy of field trips to positively influence children's attitudes toward science and conservation. With S. Berry; $995; funded April 2015. (Student Undergraduate Research Fund (S.U.R.F.) grant.)

Mentored Honors Thesis student Sierra Berry in obtaining human subjects research approval from both TXST IRB and San Marcos CISD Research Review Committee and completing the S.U.R.F Grant application process in order to fund elementary student transportation, volunteer lunches, and a research stipend in support of her honors thesis research project.

Female Science Anxiety: Causes and Concerns for Elementary Educators. With R. Lewis; $274; funded November 2014. (Student Undergraduate Research Fund (S.U.R.F.) grant.)

Mentored Honors Thesis student Rebecca Lewis in obtaining human subjects research approval from both TXST IRB and San Marcos CISD Research Review Committee and completing the S.U.R.F Grant application process in order to fund purchase of a research survey.

Computers for Physics class room RFM3223 and the Physics Advanced Student Lounge RFM3222 in support of the Physics curriculum. With W. Geertz & G. Spencer; $17.9K; funded Spring 2013 (ACC Student Computing Resources proposal).

Replace obsolete computers in RFM 3222 and RFM 3223 with new computers capable of running software packages relevant to upper-division physics coursework (software to be purchased by Physics Department); provide improved computing resources to upper-division physics students in courses taught in RFM 3223; support physics student community through access to powerful computing resources in the Physics Advanced Student Lounge.

Course Development: Introduction to STEM Education Research (Academic Renewal Grant through the Seattle Pacific University School of Education). $2.4K (approved 2/2011 for work 7/2011-8/2011; grant not actually implemented due to change of institutions).

Develop syllabus and curriculum for a new course, EDU 6978: Introduction to STEM Education Research, approved as part of the new Masters in Teaching Math and Science program; course to be taught for the first time in Summer 2012.

H. SUBMITTED, BUT NOT FUNDED, INTERNAL TEACHING GRANTS AND CONTRACTS:

Mobile Physics Teaching Laboratory. $7.6K; submitted January 2012 (ACC Student Computing Resources proposal).

Proposed the purchase of 8 laptop computers, matched by Physics Department purchase of Vernier Scientific LabPro computer interfaces and data-collection sensors, to be used as a mobile physics laboratory. Note: proposal rejected by committee, but funded through other means by IT Support.

I. MENTORING:

1. Undergraduate Research Mentoring:

Ian Anderson, Aug.-Dec. 2018

Chuo Asteria, Aug. 2020-Dec. 2022

Tyler Atkinson, Aug. 2023-May 2025

Emily Cappello, Jan.-May 2021

Hannah Castro, Jan. 2023-May 2025

Daniel Chonis, Jan.-May 2019

Jessica Conn, May 2013-Dec. 2017*

Elizabeth Czajka, Jan.-Dec. 2016

Chase Gammon, Sept. 2017-Dec. 2019

Serena Hall, Jan.-Dec. 2024

Gabrielle Harmon, Jan. 2016-May 2017

Kylie Hedge, Aug. 2023-May 2025

Joseph Hook, Oct. 2015-June 2016

Sara Hull, May-Aug. 2016

Alexis (Lexie) Kerr, Jan.-Aug. 2023*

Pluto LaCoss, Jan.-May 2026

Nichole Libby, Jan.-Aug. 2016

Jean-Michel Mailloux-Huberdeau, May 2016-May 2019

Austin McCauley, Aug. 2017-Aug. 2019*

Kimberly Moreland, Jan.-Aug. 2017

Rebel Nicholson, May 2016-Dec. 2017

Rahi Patel, Jan. 2024-May 2025

Xandria Quichocho, May 2018-Aug 2020

Korley Roesler, Aug. 2017-May 2018

Kaleigh Salty, Aug. 2020-Aug. 2021*

Erin Schipull, Aug. 2018-May 2020*

Miles Sweet, Oct.-Dec. 2022

Sean Tarter, Aug. 2017-May 2018

Lauren Trombley. Jan.-May 2019

Devin Williams, Jan. 2024-May 2025

Roslyn Young, Jan.-May 2016

Ryan Zamora, May 2016-Aug. 2017

2. Postdoctoral Scholar Mentoring:

Alicia Montecinos (primary mentor, 2022-2024)

Jieon Shim (co-mentor, 2022-2024)

Kizito Ndihokubwayo (primary mentor, 2023)

Charles Ramey II (primary mentor, 2021-2023)

Mollee Shultz (primary mentor, 2020-2022)

Jiwoo An Pierson (co-mentor, 2020-2022)

Mavreen Rose Tuvilla (primary mentor, 2020-2021)

Kushal Das (co-mentor, 2017-2019)

Jayson Nissen (co-mentor, 2017-2019)

Jada-Simone White (co-mentor, 2016)

III. SCHOLARLY/CREATIVE

A. WORKS IN PRINT

1. Chapters in Books:

Close, E. W. (contributor), et al. (EP3 Initiative). (2024). "Undergraduate Instructional Assistants." In S. McKagan, D. A. Craig, M. Jackson, and T. Hodapp (Eds.), *A Guide to Effective Practices for Physics Programs (EP3).* College Park, MD: American Physical Society. https://ep3guide.org/guide/undergraduate-instructional-assistants. (For a full list of contributors and reviewers to the EP3 Guide, see https://ep3guide.org/about/contributors-and-reviewers/)

Close, E. W., Seeley, L., Robertson, A. D., DeWater, L. S., & Close, H. G. (2015). Seattle Pacific University: Nurturing Physics Teachers at a Small Liberal-Arts School. In E. Brewe & C. Sandifer (Ed.s), *Recruiting and Educating Future Physics Teachers: Case Studies and Effective Practices,* pp. 37-51. College Park, MD: American Physical Society.

2. Articles (TXST students underlined)

a. Refereed Journal Articles:

Olmstead, A., Montecinos, A. M., Castro, H., Atkinson, T., **Close, E. W.**, Fitzgerald-Russell, M. L., Hedge, K., & Kerr, A. (2026.) Faculty and undergraduate Learning Assistants' perspectives on supports and barriers for student-centered instructional change in introductory biology. *CBE-Life Sciences Education, 25*(2). https://doi.org/10.1187/cbe.25-04-0066

Feng, L**., Close, E. W**., Luxford, C. J., An, J., Olmstead, A., Sowjanya Koka, V., & Galloway, H. C. (2025). Transforming Undergraduate STEM Education: The Learning Assistant Model and Student Retention and Graduation Rates. *Research in Higher Education, 66*(4). https://doi.org/10.1007/s11162-024-09823-5

Shultz, M., **Close, E. W.**, Nissen, J. M., & Van Dusen, B. (2023). Enacting culturally relevant pedagogy when "mathematics has no color": Epistemological contradictions. *International Journal of Research in Undergraduate Mathematics Education.* https://doi.org/10.1007/s40753-023-00219-x

Shultz, M., Nissen, J. M., **Close, E. W.**, & Van Dusen, B. (2022). The Role of Epistemological Beliefs in STEM Faculty's Decisions to use Culturally Relevant Pedagogy at Hispanic-Serving Institutions. *International Journal of STEM Education,* ***9***(32). DOI: https://doi.org/10.1186/s40594-022-00349-9

Nissen, J. M., Her Many Horses, I., Van Dusen, B., Jariwala, M., & **Close, E. W.** (2022). Providing context for identifying effective introductory physics courses. *The Physics Teacher,* ***60***(3), 179-182. DOI: https://doi.org/10.1119/5.0023763

Nissen, J. M., Her Many Horses, I., Van Dusen, B., Jariwala, M., & **Close, E. W.** (2021). Tools for identifying courses that support development of expertlike physics attitudes. *Physical Review Physics Education Research, 17,* 013103. DOI: https://doi.org/10.1103/PhysRevPhysEducRes.17.013103

Nissen, J. M., Jariwala, M., **Close, E. W.**, & Van Dusen, B. (2018). Participation and performance on paper and computer-based low-stakes assessments. *International Journal of STEM Education,* ***5***(21). DOI: https://doi.org/10.1186/s40594-018-0117-4

Close, E. W., Conn, J., & Close, H. G. (2016). Becoming Physics People: Development of Integrated Physics Identity through the Learning Assistant Experience. *Physical Review Physics Education Research,* ***12***(1), 010109. In the Focused Collection: Preparing and Supporting University Physics Educators (R. E. Scherr and M. Stetzer, editors). DOI: http://dx.doi.org/10.1103/PhysRevPhysEducRes.12.010109

Scherr, R. E., Close, H. G., **Close, E. W.**, Flood, V. J., McKagan, S. B., Robertson, A. D., Seeley, L., Wittmann, M. C., & Vokos, S. (2013). Negotiating energy dynamics through embodied action in a materially structured environment. *Physical Review Special Topics – Physics Education Research,* ***9***(2), 020105. DOI: DOI: http://dx.doi.org/10.1103/PhysRevSTPER.9.020105

Scherr, R. E., Close, H. G., **Close, E. W.**, & Vokos, S. (2012). Representing energy. II. Energy tracking representations. *Physical Review Special Topics – Physics Education Research, 8*(2), 020115. DOI: http://dx.doi.org/10.1103/PhysRevSTPER.8.020115

b. Non-refereed Articles:

Van Dusen, B., Shultz, M., Nissen, J., Wilcox, B., Holmes, N.G., Jariwala, M., **Close, E.**, Lewandowski, H.J., Pollock, S. (2021). Online administration of research-based assessments. *American Journal of Physics.* ***89***(7). (Guest Editorial). DOI: https://doi.org/10.1119/10.0002888

Close, E. W., & Quichocho, X. R. (2020). Cultivating an Inclusive Culture in the Physics Department through a Learning Assistant Program. Newsletter of the American Physical Society Forum on Education, Summer 2020. https://engage.aps.org/fed/resources/newsletters/summer-2020#Cultivating

Close, E. (2014). Community support and persistence: My story of grad school parenting. *Physics Education Research Consortium of Graduate Students (PERCoGS) Newsletter, 3,* October 2014, p.6. (https://sites.google.com/site/pergraduatestudents/newsletters). (Invited.)

Conn, J., **Close, E.**, & Close H. (2014). The Physics Learning Assistant Program at Texas State University: My Perspective as an LA and as a Researcher. *APS Forum on Education Newsletter,* Summer 2014, pp. 14-16 (http://www.aps.org/units/fed/newsletters/summer2014/upload/summer14.pdf). (Invited.)

Witiw, M., & **Close, E.** (2007). Earth System Science Courses for Teachers. *Washington Science Teachers' Journal,* 48 (3), 26-27. (Contributed.)

Close, E. (2007). Leveraging Corporate Support for Science Education Reform at Seattle Pacific University. *APS Forum on Education Newsletter,* Summer 2007, pp. 38-40 (http://units.aps.org/units/fed/newsletters/upload/summer07.pdf). (Invited.)

3. Conference Proceedings (TXST students underlined)

a. Refereed Conference Proceedings:

Quichocho, X. Q., Hyater-Adams, S., & **Close, E. W.** (2023). LA program as a driving force for identity development through access to ideational resources. In D. Jones, Q. Ryan, and A. Pawl (Ed.s), *2023 Physics Education Research Conference Proceedings*, 278-283. https://doi.org/10.1119/perc.2023.pr.Quichocho

Salty, K. I., Asteria, C. E., & **Close, E. W.** (2022). ADH… Disorder? Discoveries on ADHD and physics learning from collaborative autoethnography. In B. W. Frank, D. Jones, and Q. Ryan (Ed.s), *2022 Physics Education Research Conference Proceedings*, 407-412. https://doi.org/10.1119/perc.2022.pr.Salty

Shultz, M., Van Dusen, B., **Close, E.**, & Nissen, J. (2022). Epistemological Tensions in Applying Culturally Relevant Pedagogy to Undergraduate Mathematics. In S. S. Karunakaran & A. Higgins (Eds.), *Proceedings of the 24th Annual Conference on Research in Undergraduate Mathematics Education*, 571-579. http://sigmaa.maa.org/rume/RUME24.pdf

Shultz, M., **Close, E.**, Nissen, J., & Van Dusen, B. (2021). How do Mathematics Instructors at Hispanic Serving Institutions Justify their Instructional Decisions? In Karunakaran, S. S. & Higgins, A. (Ed.s), *2021 Research in Undergraduate Mathematics Education Reports*, 291-299. http://sigmaa.maa.org/rume/2021_RUME_Reports.pdf

Quichocho, X. R., Schipull, E. M., & **Close, E. W.** (2020). Understanding physics identity development through the identity performances of Black, Indigenous, and women of color and LGBTQ+ women in physics. In S. Wolf, M. B. Bennett, and B. W. Frank (Ed.s), *2020 Physics Education Research Conference Proceedings*, 412-417. https://doi.org/10.1119/perc.2020.pr.Quichocho

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2019). Who does physics? Understanding the composition of a physicists through the lens of women of color and female LGBTQ+ physicists. In A. Traxler, Y. Cao, and S. Wolf (Ed.s), *2019 Physics Education Research Conference Proceedings*, 488-493. doi: 10.1119/perc.2019.pr.Quichocho

Schipull, E. M., Quichocho, X. R., & **Close, E. W.** (2019). "Success Together": Physics departmental practices supporting LGBTQ+ women and women of color. In A. Traxler, Y. Cao, and S. Wolf (Ed.s), *2019 Physics Education Research Conference Proceedings*, 535-540. doi:10.1119/perc.2019.pr.Schipull

Close, E. W., Mailloux-Huberdeau, J.-M., Close, H. G., & Donnelly, D. (2018). Characterization of time scale for detecting impacts of reforms in an undergraduate physics program. In L. Ding, A. Traxler, & Y. Cao (Ed.s), *AIP Conference Proceedings: 2017 Physics Education Research Conference,* 88-91. doi:10.1119/perc.2017.pr.017

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Schiber, C. C., Close, H. G., **Close, E. W.,** & Donnelly, D. (2014). Student use of a material anchor for quantum wave functions. In P. V. Engelhardt, A. D. Churukian, and D. L. Jones (Eds.), *AIP Conference Proceedings: 2013 Physics Education Research Conference* (pp. 325-328). DOI: 10.1119/perc.2013.pr.069

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McKagan, S. B., Scherr, R. E., **Close, E. W.**, & Close, H. G. (2011). Criteria for creating and categorizing forms of energy. In C. Singh, M. Sabella, & P. Engelhardt (Eds.), *AIP Conference Proceedings 1413: 2011 Physics Education Research Conference* (pp. 279-282). Melville, NY: AIP Press. DOI: http://dx.doi.org/10.1063/1.3680049

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b. Non-refereed Conference Proceedings:

Close, E. W., Scherr, R. E., Close, H. G., & McKagan, S. B. (2011). Development of proximal formative assessment skills in video-based teacher professional development. Invited paper. In C. Singh, M. Sabella, & P. Engelhardt (Eds.), *AIP Conference Proceedings 1413: 2011 Physics Education Research Conference* (pp. 19-22). Melville, NY: AIP Press. DOI: http://dx.doi.org/10.1063/1.3679983

Close, H. G., DeWater, L. S., **Close, E. W.**, Scherr, R. E., & McKagan, S. B. (2010). Using the Algebra Project method to regiment discourse in an energy course for teachers. Invited paper. In C. Singh, M. Sabella, & S. Rebello (Eds.), *AIP Conference Proceedings 1289: 2010 Physics Education Research Conference* (pp. 9-12). Melville, NY: AIP Press. https://doi.org/10.1063/1.3515259

B. WORKS NOT IN PRINT

1. Presentations at Professional Meetings (contributed) (TXST students underlined)**:**

Nevarez, A., Slager, O., Close, E. W., Olmstead, A., Van Duzor, A., & Caspari-Gnann, I. (2026, July 26-30). *Authoritative-to-dialogic facilitation training for Learning Assistants: Training design and outcomes* [Conference presentation]. 2026 Biennial Conference on Chemical Education, Madison, WI.

Nevarez, A., Close, E. W., Olmstead, A., Van Duzor, A., & Caspari-Gnann, I. (2026, July 26-30). *Investigating Learning Assistant professional development: A contrasting case of two changes and two pathways to change.* [Poster session]. 2026 Biennial Conference on Chemical Education, Madison, WI.

Olmstead, A. R., Close, E. W., Luxford, C. J., Shim, J., Martinez, M. A., Feng, L., Castro, H., Atkinson, T., Montecinos, A., Toedtman, S., Ramirez-Mann, L., & Galloway, H. C. (2025, December 3). *Advancing Student Success through the STEM Communities Learning Assistant Program* [Conference presentation]. CoSE Symposium for Student Success, Texas StateUniversity, San Marcos, TX.

Toedtman, S., Hedge, K., Atkinson, T., Castro, H., Kerr, A., Olmstead, A. R., Close, E. W., International Learning Assistant Conference 2025, ""It's definitely a positive influence on everyone who's involved--students, faculty, us as LAs": Exploring Learning Assistants' perspectives on the outcomes of implementing the STEM Communities LA Program in foundational biology courses," CU Boulder, Boulder, CO. (November 8, 2025).

Luxford, C. J., Montes, E., Shim, J., Arboleda Martinez, M., Feng, L., Olmstead, A. R., Close, E. W., Galloway, H. C., Texas Conference on Student Success, "Measuring Impact of Learning Assistants in Transformed Courses," University of Texas Austin, Austin, TX. (October 30, 2025).

Quichocho, X. Q., Hyater-Adams, S., & **Close, E. W.** (2025). Characterizing identity-supportive aspects of the TXST Physics LA Program through the critical physics identity framework. Paper presented at the American Association of Physics Teachers Summer Meeting, Washington, DC, August 2025.

Castro, H. (Presenter), Atkinson, T. (Presenter), Montecinos, A. (Author), Close, E. W. (Author), Fitzgerald-Russell, M. (Author), Hedge, K. (Author), Kerr, A. (Author), Olmstead, A. R. (Presenter), 2025 Transforming Institutions Conference, "Empowering change: Exploring multiple perspectives on benefits and challenges of an instructional change initiative that engages faculty and undergraduate students in improving STEM courses together," Accelerating Systemic Change Network and Network of STEM Education Centers, St. Louis, MO, United States. (June 10, 2025).

Williams, D., Patel, R., & **Close, E. W.** (2025). Navigating Imposterism in STEM: Examining the Experiences of Racially Minoritized Students at Texas State University. Poster presented at the 2025 TXST STEM Conference, San Marcos, TX, March 2025.

Toedtman, S., Hedge, K., Atkinson, T., Castro, H., Kerr, A., Olmstead, A. R., Close, E. W., 2025 TXST STEM Conference, ""It's definitely a positive influence on everyone who's involved--students, faculty, us as LAs": Exploring Learning Assistants' perspectives on the outcomes of implementing the STEM Communities LA Program in foundational biology courses," TXST, San Marcos, TX. (March 28, 2025).

Quichocho, X. Q., Hyater-Adams, S., & **Close, E. W.** (2024). Analyzing Experiences of Multiply Marginalized Physics Students With the Critical Physics Identity Framework. Poster presented at the 2024 Physics Education Research Conference, Boston, MA, July 2024.

Quichocho, X. R., Hyater-Adams, S., & **Close, E. W.** (2024). Elements of a Physics Learning Assistant Program that Support Intersectional Physics Identity Development. Paper presented at the American Association of Physics Teachers Summer Meeting, Boston, MA, July 2024.

Perry, S., Merrell, D., Goodman, R., Zisk, R., Sheppard, K., & **Close, E. W.** (2024). Thriving and Rising Physics Teacher Preparation Programs: A Roundtable with Representatives from High-Production Teacher Preparation Programs. Round table panel discussion presented at the American Association of Physics Teachers Summer Meeting, Boston, MA, July 2024.

Shim, J., Feng, L., Arboleda, M., **Close, E. W.**, Olmstead, A. R., Luxford, C. J., & Galloway, H. C. (2024). The Impact of the Learning Assistant (LA) Model on STEM Gateway Course Failure, Retention, and College Completion. Poster presented at the TXST STEM Conference, San Marcos, TX, April 2024.

Shim, J., Feng, L., Arboleda, M., **Close, E. W.**, Luxford, C. J., Olmstead, A. R., & Galloway, H. C.. (2024). The Impact of the Learning Assistant (LA) Model on STEM Gateway Course Failure, Retention, and College Completion. Paper presented at the Association for Education Finance and Policy Conference, Baltimore, MD, March 2024.

Shim, J., Feng, L., Arboleda, M., **Close, E. W.**, Luxford, C. J., Olmstead, A. R., & Galloway, H. C.. (2024). The Impact of the Learning Assistant (LA) Model on STEM Gateway Course Failure, Retention, and College Completion. Poster presented at the TXST Health Scholar Showcase, San Marcos, TX, March 2024.

Castro, H., Kerr, A., Olmstead, A., & **Close, E.** (2023). Opportunities and challenges of student-centered instructional change efforts involving faculty-student teams: Learning Assistant perspectives. Poster presented at the 2023 International Learning Assistant Conference, Boulder, CO, October 2023.

Close, E. W., Quichocho, X. R., & Hyater-Adams, S. (2023). Access to ideational resources through LA Program elements supports Critical Physics (STEM) Identity development for marginalized students. Paper presented at the 2023 International Learning Assistant Conference, Boulder, CO, October 2023.

Quichocho, X. R., Hyater-Adams, S., & **Close, E. W.** (2023). LA program as a driving force for identity development through access to ideational resources. Poster presented at the 2023 Physics Education Research Conference, Sacramento, CA, July 2023.

Quichocho, X. R., Hyater-Adams, S., & **Close, E. W.** (2023). Access to Ideational Resources through LA Program Elements Supports Critical Physics Identity Development. Paper presented at the American Association of Physics Teachers Summer Meeting, Sacramento, CA, July 2023.

Quichocho, X. R., & **Close, E. W.** (2023). Sharing the Whole Self in Qualitative Research. Paper presented at the American Association of Physics Teachers Winter Meeting, Portland, OR, January 2023.

Salty, K. I., Asteria, C. E., & **Close, E. W.** (2022). ADH… Disorder? Discoveries on ADHD and physics learning from collaborative autoethnography. Paper presented at the 2022 Physics Education Research Conference, virtual conference, July 2022.

Quichocho, X. Q., & **Close, E. W.** (2022). The Texas State Physics LA Program helps multiply-marginalized students find "people like [them]" & build a supportive community. Poster presented at the Physics Teacher Education Coalition (PhysTEC) Conference, virtual conference, March 2022.

Feng, L., **Close, E. W.**, Luxford, C. J., Olmstead, A. R., & Galloway, H. C. (2022). Learning to Teach: The Impact of Learning Assistant Model on Retention Rates, College Completion Rates, and STEM Labor Market Outcomes. Paper presented at The Association for Education Finance and Policy (AEFP) conference: Assessing the Responses of Education Finance and Policy to the Dual Pandemic of COVID-19 and Racial Injustice, Denver, CO, March 2022.

Salty, K., & **Close, E. W.** (2021). Exploring learner variability and disability identity in STEM students with ADHD. Poster presented at the Physics Education Research Conference, virtual conference, July 2021.

Salty, K., & **Close, E. W.** (2021). Strength-based Analysis of Experiences of Physics Students with ADHD. Paper presented at the American Association of Physics Teachers Summer Meeting, virtual conference, July 2021.

Hesaaraki, S. A., McCauley, A. C., Conn, J., & **Close, E. W.** (2021). Collaborative Mechanistic Reasoning in a Learning Assistant Preparation Session. Paper presented at the American Association of Physics Teachers Summer Meeting, virtual conference, July 2021.

Nissen, J., Her Many Horses, I., Van Dusen, B., Jariwala, M., & **Close, E. W.** (2021). Tools for Identifying Effective Courses. Poster presented at the American Association of Physics Teachers Summer Meeting, virtual conference, July 2021.

An, J., Tuvilla, M., Olmstead, A. R., Luxford, C. J., **Close, E. W.**, Feng, L., Koka, V. S. S., Turpen, C., Galloway, H. C. (2021). Creating culturally responsive STEM learning environments through community building at an HSI. Paper presented at the Transforming Institutions 2021 Virtual Conference, ASCN, virtual conference, June 2021.

Shultz, M., **Close, E. W.**, Van Dusen, B., & Talbot, R. (2021). How Faculty Justify Instructional Decisions at Hispanic-Serving Institutions. Paper presented at the American Education Research Association Annual Meeting, virtual conference, April 2021.

An, J., Tuvilla, M., Olmstead, A. R., Luxford, C. J., **Close, E. W.**, Feng, L., Koka, V. S. S., Galloway, H. C.. (2021). A team-based approach to building inclusive and equitable STEM learning environments at a Hispanic Serving Institution. Paper presented at the X-DBER 2021 Conference, virtual conference, March 2021.

Nissen, J., Her Many Horses, I., Van Dusen, B., Jariwala, M., & **Close, E. W.** (2021). Tools for identifying effective introductory STEM courses. Paper presented at the X-DBER 2021 Conference, virtual conference, March 2021.

Shultz, M., **Close, E. W.**, Nissen, J., & Van Dusen, B. (2021). The Impact of faculty's epistemological beliefs on STEM instruction at HSIs. Paper presented at the X-DBER 2021 Conference, virtual conference, March 2021.

Van Dusen, B., Nissen, J., **Close, E. W.**, Shultz M., & Talbot, R. (2021). Equity in introductory physics, chemistry, and biology courses. Paper presented at the X-DBER 2021 Conference, virtual conference, March 2021.

Talbot, R., Huvard, H., Van Dusen, B., Nissen, J., **Close, E. W.**, Shultz M. (2021). Measuring Socioeconomic Status: What is it, and how do we obtain and use the data? Poster presented at the X-DBER 2021 Conference, virtual conference, March 2021.

Feng, L., **Close, E. W.,** Luxford, C. J., An, J., Olmstead, A. R., Tuvilla, M. R., Galloway, H. C., Koka, V. S. S. (2021). Transforming Undergraduate STEM Education: An Exploratory Analysis of the Learning Assistant Model and Student Outcomes. Poster presented at the Association for Education Finance and Policy 46th Annual Conference, virtual conference, March 2021.

Close, E. W., Quichocho, X. R., Schipull, E. M., Conn, J., & Shultz, M. (2021). The Learning Assistant Model: Creating Community, Supporting Minoritized Learners' STEM Identity Development and Identity Integration. Poster presented at the American Association of Hispanics in Higher Education Annual Conference, virtual conference, March 2021.

Nissen, J., Van Dusen, B., Close, E. W., Shultz, M., & Talbot, R. (2021). Using QuantCrit to Engage in Scholarship of Teaching and Learning as a Reflective Practice. Paper presented at the American Association of Hispanics in Higher Education Annual Conference, virtual conference, March 2021.

Quichocho, X. R., & **Close, E. W.** (2021). Integrated Physics Identity Performances of BIWOC and LGBTQ+ Women. Paper presented at the American Association of Physics Teachers Winter Meeting, virtual conference, January 2021.

Quichocho, X. R., Schipull, E. M., & **Close, E. W.** (2020). People Like Me: Finding Community through LA Program Participation. Paper presented at the International Learning Assistant Research Symposium, virtual conference, November 2020. (Refereed)

Nissen, J., Van Dusen, B., **Close, E. W.**, Her Many Horses, I., & Jariwala, M. (2020). Providing Context to Identify Effective Courses. Paper presented at the International Learning Assistant Research Symposium, virtual conference, November 2020. (Refereed)

Shultz, M., **Close, E. W.**, & Nissen, J. (2020). How STEM Faculty at Hispanic-Serving Institutions Attend to Students' Identities. Paper presented at the Northeastern Research in Undergraduate Mathematics Education (RUME) Conference, virtual conference, October 2020.

Quichocho, X. R., Schipull, E. M., & **Close, E. W.** (2020). Understanding physics identity development through the identity performances of Black, Indigenous, and women of color and LGBTQ+ women in physics. Poster presented at the Physics Education Research Conference, virtual conference, July 2020.

McCauley, A. C., Adkins, M., Wolf, S. F., & **Close, E. W.** (2020). Understanding LA sensemaking: using "teacher hat" to prompt changes in discussion frame. Poster presented at the Physics Education Research Conference, virtual conference, July 2020.

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2020). Women of Color and LGBTQ+ Women's Discussions of Support Systems Available at Two HSIs. Paper presented at the American Association of Physics Teachers Summer Meeting, virtual conference, July 2020.

McCauley, A. C., Adkins, M., Wolf, S. F., & **Close, E. W.** (2020). Understanding LA Sensemaking: Are they Discussions About Physics or Teaching? Poster presented at the American Association of Physics Teachers Summer Meeting, virtual conference, July 2020

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2020). Experiences of physics students with multiple marginalized identities in an equity and community oriented LA Program. Poster presented at the Physics Teacher Education Coalition (PhysTEC) Conference, Denver, CO, February 2020.

Close, E. W., Conn, J., Donnelly, D., & Close H. G. (2020). Designing Learning Assistant Program Structures to Create Resilient Community. Poster presented at the Physics Teacher Education Coalition (PhysTEC) Conference, Denver, CO, February 2020.

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2020). Marginalized Student Experiences in an Equity and Community Orientation LA Program. Paper presented at the APS National Mentoring Community Conference, Orlando, FL, February 2020.

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2020). People Like Me: Intersectional Identity Development in a Physics LA Program. Poster presented at the APS National Mentoring Community Conference, Orlando, FL, February 2020.

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2020). People Like Me: Intersectional Identity Development in a Physics LA Program. Paper presented at the American Association of Physics Teachers Winter Meeting, Orlando, FL, January 2020.

Olmstead, A., **Close, E. W.**, Galloway, H., Feng, L., & Luxford, C. (2019). Creating Faculty-LA Communities for Culturally Relevant Institutional Change. Paper presented at the National Learning Assistant Research Symposium, Boulder, CO, October 2019. (Refereed)

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2019). Integrated Physics Identities of Women of Color and LGBTQ+ Women Physicists at MSIs. Paper presented at the 2019 Joint Fall Meeting of the Texas Sections of APS, AAPT and Zone 13 of the SPS, Lubbock, TX, October 2019.

Close, E. W., Quichocho, X. R., Schipull, E. M., Conn, J., & Close, H. G. (2019). Supporting Identity Reconciliation Through LA Program Structures. Poster presented at the National Learning Assistant Research Symposium, Boulder, CO, October 2019. (Refereed)

Olmstead, A. R., **Close, E. W.,** Galloway, H., Luxford, C., Feng, L., & Ochoa-Madrid, E. (2019). Building capacity: Creating faculty-student communities for culturally relevant institutional change. Paper presented at Texas State HSI Week, Texas State University, San Marcos, TX, September 2019.

Close, E. W., Hesaaraki, S. A., McCauley, A. C., Quichocho, X. R., & Conn, J. (2019). Analysis of Learning Assistants' Physics Identity Development and Reconciliation of Multimembership Through the Lens of Communities of Practice. Paper presented at the Conference of the European Science Education Research Association, Bologna, Italy, August 2019. (Refereed)

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close, E. W.** (2019). Who does physics: Understanding the composition of a physicist through the lens of women of color and female LGBTQ+ physicists. Poster presented at the Physics Education Research Conference, Provo, UT, July 2019.

Schipull, E. M., Quichocho, X. R., & **Close**, **E. W.** (2019). "Success Together": Physics departmental practices supporting LGBTQ+ women and women of color. Poster presented at the Physics Education Research Conference, Provo, UT, July 2019.

McCauley, A. C., Adkins, M., Wolf, S. F., & **Close**, **E. W.** (2019). Is it Teaching or is it Physics? Poster presented at the Physics Education Research Conference, Provo, UT, July 2019.

Close, E. W., Conn, J., Donnelly, D., & Close H. G. (2019). Designing Learning Assistant Program Structures to Create Resilient Community. Poster presented at the Physics Education Research Conference, Provo, UT, July 2019.

Quichocho, X. R., Conn, J., Schipull, E. M., & **Close**, **E. W.** (2019). Identity Performances of Women of Color and LGBTQ+ Physicists at MSIs. Paper presented at the American Association of Physics Teachers Summer Meeting, Provo, UT, July 2019.

McCauley, A. C., Adkins, M., Wolf, S. F., & **Close**, **E. W.** (2019). Is it Teaching or is it Physics? Poster presented at the American Association of Physics Teachers Summer Meeting, Provo, UT, July 2019.

Adkins, M., McCauley, A. C., **Close, E. W.**, & Wolf, S. F. (2019). Conversation Networking. Poster presented at the American Association of Physics Teachers Summer Meeting, Provo, UT, July 2019.

Hesaaraki, S. A., McCauley, A., Conn, J., & **Close, E. W.** (2019). Collaborative Chaining: A Proposed Mechanism for Learning in Interactive Instruction. Poster presented at the Texas State University Women in Science and Engineering (WiSE) Conference, San Marcos, TX, March 2019.

Quichocho, X. R., Conn, J., Schipull, E. M., Anderson, I., & **Close, E. W.** (2019). Identity Performances of Women of Color and LGBTQ+ Physicists at Minority Serving Institutions (MSIs). Poster presented at the Texas State University Women in Science and Engineering (WiSE) Conference, San Marcos, TX, March 2019.

Quichocho, X. R., Conn, J., Schipull, E. M., Anderson, I., & **Close, E. W.** (2019) Identity Performances of Minority Students at MSIs. Paper presented at the American Association of Physics Teachers Winter Meeting, Houston, TX, January 2019.

Mailloux-Huberdeau, J.-M., Donnelly, D., & **Close, E. W.** (2019). Statistical Analysis of Factors Impacting Success in Interactive Introductory Physics. Poster presented at the American Association of Physics Teachers Winter Meeting, Houston, TX, January 2019.

McCauley, A. C., Hesaaraki, S. A., Conn, J., & **Close, E. W.** (2019). Epistemological Framing and Mechanistic Reasoning During Collaborative LA Preparation Sessions. Paper presented at the American Association of Physics Teachers Winter Meeting, Houston, TX, January 2019.

Hesaaraki, S. A., McCauley, A., Conn, J., & **Close, E. W.** (2019). Collaborative Chaining: A Proposed Mechanism for Learning in Interactive Instruction. Poster presented at the American Association of Physics Teachers Winter Meeting, Houston, TX, January 2019.

Quichocho, X. R., Conn, J., Schipull, E. M., Anderson, I., & **Close, E. W.** (2019). Identity Performances of Women of Color and LGBTQ+ Physicists at Minority Serving Institutions (MSIs). Poster presented at the American Physical Society Conference for Undergraduate Women in Physics (CUWiP), Corpus Christi, TX, January 2019.

Quichocho, X. R., Conn, J., & **Close, E. W.** (2018). Examining the intersectionality of physics students' multiple identities at minority serving institutions. Poster presented at the Physics Education Research Conference, Washington, D.C., July 2018.

McCauley, A. C., Hesaaraki, S. A., Conn, J., & **Close, E. W.** (2018). Discourse analysis of Learning Assistant preparation sessions: Group discussion dynamics and mechanistic reasoning. Poster presented at the Physics Education Research Conference, Washington, D.C., July 2018.

McCauley, A., Conn, J., Hesaaraki, S. A., Zamora, R. J., & **Close, E. W.** (2018). Identity as Nexus-of-Multimembership in Physics Learning Assistant Preparation Sessions. Poster presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, Stephenville, TX, March 2018.

Close, E. W., Conn, J., & Close, H. G. (2018). "It's okay to be wrong": Developing identities of competence in the TXST LA program. Poster presented at the American Physical Society Physics Teacher Education Coalition (PhysTEC) Conference, College Park, MD, February 2018.

Close, E. W., Mailloux-Huberdeau, J.-M., Close, H. G., & Donnelly, D. (2018). Characterization of time scale for detecting impacts of reforms in an undergraduate physics program. Poster presented at the American Physical Society Physics Teacher Education Coalition (PhysTEC) Conference, College Park, MD, February 2018.

Conn, J., Zamora, R. J., Hesaaraki, S. A., Collins, A. C., & **Close, E. W.** (2017). Nexus-of-multimembership in Physics Learning Assistant preparation sessions. Poster presented at the International Learning Assistant Conference, Boulder, CO, November 2017.

Close, E. W., Mailloux-Huberdeau, J.-M., Close, H. G., & Donnelly, D. (2017) Characterization of time scale for detecting impacts of reforms in an undergraduate physics program. Poster presented at the International Learning Assistant Conference, Boulder, CO, November 2017.

Close, E. W., Mailloux-Huberdeau, J.-M., Close, H. G., & Donnelly, D. (2017). Characterization of time scale for detecting impacts of reforms in an undergraduate physics program. Poster presented at the Physics Education Research Conference, Cincinnati, OH, July 2017.

Zamora, R. J., Conn, J., Hesaaraki, S. A., Collins, A. C., & **Close, E. W.** (2017). Characterizing interactions in Physics Learning Assistant preparation sessions. Poster presented at the Physics Education Research Conference, Cincinnati, OH, July 2017.

Conn, J., Zamora, R. J., Hesaaraki, S. A., Collins, A. C., & **Close, E. W.** (2017). Nexus-of-multimembership in Physics Learning Assistant preparation sessions. Poster presented at the Physics Education Research Conference, Cincinnati, OH, July 2017.

Jariwala, M., Nissen, J. M., Herrarra, X., **Close**, **E. W.,** & Van Dusen, B. (2017). Participation rates of in-class vs. online administration of low-stakes research-based assessments. Poster presented at the Physics Education Research Conference, Cincinnati, OH, July 2017.

Nissen, J. M., Jariwala, M., Herrarra, X., **Close, E. W.**, & Van Dusen, B. (2017). Performance Differences for in-class and online administration of low-stakes research-based assessments. Poster presented at the Physics Education Research Conference, Cincinnati, OH, July 2017.

Donnelly, D., Mailloux-Huberdeau, J.-M., Nissen, J. M., & **Close, E. W.** (2017). Comparison of normalized gain and Cohen's d for Force Concept Inventory results in an introductory mechanics course. Poster presented at the Physics Education Research Conference, Cincinnati, OH, July 2017.

Conn, J., Collins, A. C., Hesaaraki, S. A., Zamora, R. J., & **Close, E. W.** (2017). Nexus of multimembership as source of physics teacher identity. Paper presented at the American Association of Physics Teachers Summer Meeting, Cincinnati, OH, July 2017.

Zamora, R. J., Conn, J., Hesaaraki, S. A., Collins, A. C., & **Close, E. W.** (2017). Characterizing Interactions in Learning Assistant Preparation Sessions. Paper presented at the American Association of Physics Teachers Summer Meeting, Cincinnati, OH, July 2017.

Herrarra, X., Jariwala, M., Nissen, J. M., Van Dusen, B., & **Close, E. W.** (2017). Participation rates of in-class vs. online administration of concept inventories and attitudinal assessments. Paper presented at the American Association of Physics Teachers Summer Meeting, Cincinnati, OH, July 2017.

Nissen, J. M., Herrarra, X., Van Dusen, B., Jariwala, M., & **Close, E. W.** (2017). Performance on in-class vs. online administration of concept inventories and attitudinal assessments. Paper presented at the American Association of Physics Teachers Summer Meeting, Cincinnati, OH, July 2017.

Conn, J., Zamora, R. J., Hesaaraki, S. A., Collins, A. C., & **Close, E. W.** (2017). Characterizing interactions in Physics Learning Assistant preparation sessions. Poster presented at the Foundations and Frontiers in Physics Education Research Bi-Annual Conference, Bar Harbor, ME, June 2017.

Close, E. W., Conn, J., Collins, A. C., Hull, S. L., Nicholson, R. E., & Zamora, R. J. (2017). Analysis of Learning Assistants' Physics Identity Development Through the Lens of Communities of Practice. In related paper set: *The Impacts of the Learning Assistant (LA) Models on LA and Student Outcomes*, with B. Van Dusen, M. Jariwala, & K. Gray. Paper presented at the National Association of Research in Science Teaching Annual International Conference, San Antonio, TX, April 2017. (Refereed)

Harmon, G., Czajka, E., Nicholson, R., Gammon, C., & **Close, E. W.** (2017). Exploring student attitudes toward reformed instruction in introductory physics. Poster presented at the Texas State University Women in Science and Engineering (WiSE) Conference, San Marcos, TX, April 2017.

Zamora, R. J., Conn, J., Collins, A., Hesaaraki, S., & **Close, E. W.** (2017). Characterizing Interactions in Physics Learning Assistant Preparation Sessions. Poster presented at the Texas State University Women in Science and Engineering (WiSE) Conference, San Marcos, TX, April 2017.

Harmon, G., Czajka, E., Nicholson, R., Gammon, C., & **Close, E. W.** (2017). Exploring student attitudes toward reformed instruction in introductory physics. Poster presented at the Texas State University Undergraduate Research Conference and Honors Thesis Forum, San Marcos, TX, April 2017.

Zamora, R. J., Conn, J., Collins, A., Hesaaraki, S., & **Close, E. W.** (2017). Characterizing Interactions in Physics Learning Assistant Preparation Sessions. Poster presented at the Texas State University Undergraduate Research Conference and Honors Thesis Forum, San Marcos, TX, April 2017.

Harmon, G., Czajka, E., Nicholson, R., Gammon, C., & **Close, E. W.** (2017). Exploring student attitudes toward reformed instruction in introductory physics. Poster presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, San Antonio, TX, March 2017.

Clark, E., **Close, E. W.**, & Wolf, S. F. (2016). Using Mathematical Symbols to Convey Physical Meaning. Poster presented at the Fall Meeting of the North Carolina Section of the American Association of Physics Teachers, Asheville, NC, November 2016.

Jariwala, M., White, J. S., Van Dusen, B., & **Close, E. W.** (2016). In-class vs. Online Administration of Concept Inventories and Attitudinal Assessments. Poster presented at the Physics Education Research Conference, Sacramento, CA, July 2016.

Collins, A. C., Conn, J., Hook, J., **Close, E. W.**, & Donnelly, D. (2016). Teaching physics with Learning Assistants: Impacts on student outcomes. Poster presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, Beaumont, TX, March 2016.

Hook, J., Donnelly, D., **Close, E. W.**, Collins, A. C., & Conn, J. (2016). Impact of Learning Assistant program participation: FCI changes over time. Paper presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, Beaumont, TX, March 2016.

Close, E. W., Conn, J., & Close, H. G. (2015). "It's okay to be wrong": Developing identities of competence in the TXST LA program. Poster presented at the National Learning Assistant Conference, Boulder, CO, October 2015.

Close, E. W., Conn, J., & Close, H. G. (2015). "It's okay to be wrong": Identity development in the TXST LA program. Poster presented at the Physics Education Research Conference, College Park, MD, July 2015.

Conn, J., **Close, E. W.**, Close, H. G., & Donnelly, D. (2015). Learning Assistant Identity Development: Is One Semester Enough? Poster presented at the Physics Education Research Conference, College Park, MD, July 2015.

Conn, J., **Close, E. W.**, Close, H. G., & Donnelly, D. (2015). Learning Assistant Identity Development: Is One Semester Enough? Paper presented at the American Association of Physics Teachers Summer Meeting, College Park, MD, July 2015.

Lewis, R., & **Close, E. W.** (2015). Female Science Anxiety: Causes and Concerns for Elementary Educators. Poster presented at the Women and Gender Research Collaborative Symposium: *Democracy's Promise: Deisolating Gendered Experiences*. Texas State University, San Marcos, TX, March 2015.

Conn, J., **Close, E. W.**, & Close, H. G. (2014). Learning Assistant Identity Development: Is One Semester Enough? Poster presented at the Physics Education Research Conference, Minneapolis, MN, July 2014.

Close, E. W., Conn, J., Close, H. G., & Donnelly, D. (2014). Analysis of LA Program Impact through Community of Practice Theory. Paper presented at the American Association of Physics Teachers Summer Meeting, Minneapolis, MN, July 2014.

Conn, J., **Close, E. W.**, Close, H. G., & Donnelly, D. (2014). Developing an Identity of Competence Through the Learning Assistant Program. Paper presented at the American Association of Physics Teachers Summer Meeting, Minneapolis, MN, July 2014.

Close, E. W., Conn, J., & Close, H. G. (2014). Development of Integrated Physics Identity through Physics Learning Assistant Experience. Poster presented at the International Conference of the Learning Sciences (ICLS), Boulder, CO, June 2014. (Refereed)

Close, E. W., Conn, J., & Close, H. G. (2014). Development of Integrated Physics Identity in a Learning Assistant Program. Paper presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, Abilene, TX, March 2014.

Close, E. W., Conn, J., & Close, H. G. (2013). Learning Assistants' Development of Physics (Teacher) Identity. Poster presented at the Physics Education Research Conference, Portland, OR, July 2013.

Close, H. G., Schiber, C. C., **Close, E. W.**, & Donnelly, D. (2013). Students' dynamic geometric reasoning about quantum spin-1/2 states. Poster presented at the Physics Education Research Conference, Portland, OR, July 2013.

Schiber, C. C., Close, H. G., **Close, E. W.**, & Donnelly, D. (2013). Student use of a material anchor for quantum wave functions. Poster presented at the Physics Education Research Conference, Portland, OR, July 2013.

Close, E. W., Close, H. G., & Donnelly, D. (2013). Learning How to Listen: the Interview Project in LA Pedagogy. Paper presented at the American Association of Physics Teachers Summer Meeting, Portland, OR, July 2013.

Close, H. G., Schiber, C. C., Donnelly, D., & **Close, E. W.**, (2013). Students' Dynamic Geometric Reasoning about Quantum Spin-1/2 States. Paper presented at the American Association of Physics Teachers Summer Meeting, Portland, OR, July 2013.

Schiber, C. C., Close, H. G., **Close, E. W.**, & Donnelly, D. (2013). Effects of a Wave Function Manipulative on Subsequent Student Gesturing. Paper presented at the American Association of Physics Teachers Summer Meeting, Portland, OR, July 2013.

Donnelly, D., Close, H. G., & **Close, E. W.**, (2013). Impact of a Learning Assistant Program on Student Outcomes in a Calculus-based Mechanics Course. Paper presented at the American Association of Physics Teachers Summer Meeting, Portland, OR, July 2013.

Close, E. W., Conn, J., & Close, H. G. (2013). Learning Assistant Development of Physics (Teacher) Identity. Poster presented at the Foundations and Frontiers of Physics Education Research Conference, Bar Harbor, ME, June 2013.

Conn, J., & **Close, E. W.** (2013). Why You Should Have LAs: A Student Perspective. Paper presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, Stephenville, TX, April 2013.

Schiber, C. C., Close, H. G., Donnelly, D., & **Close, E. W.**, (2013). Student Gestures about Complex Wave Functions for One-Dimensional Potentials. Paper presented at the American Association of Physics Teachers Winter Meeting, New Orleans, LA, January 2013.

Close, E. W., Close, H. G., & Donnelly, D. (2012). Understanding the Learning Assistant experience with Physics Identity and Community of Practice. Paper presented at the Joint Fall Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, Lubbock, TX, October 2012.

Close, E. W., Close, H. G., & Donnelly, D. (2012). Understanding the Learning Assistant experience with Physics Identity. Poster presented at the Physics Education Research Conference, Philadelphia, PA, August 2012.

Close, H. G., **Close, E. W.**, & Donnelly, D. (2012). Nesting in graphical representations in physics. Poster presented at the Physics Education Research Conference, Philadelphia, PA, August 2012.

Close, E. W., Close, H. G., & Donnelly, D. (2012). Understanding the Learning Assistant experience with Physics Identity. Paper presented at the American Association of Physics Teachers Summer Meeting, Philadelphia, PA, July 2012.

Close, E. W., Close, H. G., & Donnelly, D. (2012) Engaging Physics Majors as Partners in Teaching: Learning Assistants in Introductory Physics. Paper presented at the Joint Spring Meeting of the Texas Sections of the American Physical Society, American Association of Physics Teachers, and Society of Physics Students, San Angelo, TX, March 2012.

Close, E. W., Close, H. G., R. E. Scherr, & S. Vokos. (2011). Teacher Concepts of "Good Video" in a Video Club. Paper presented at the American Association of Physics Teachers Winter Meeting, Jacksonville, FL, January 2011.

Close, E. W., Close, H. G., S. McKagan, & R. E. Scherr. (2010). Energy in Action: The Construction of Physics Ideas in Multiple Modes. Poster presented at the Physics Education Research Conference, Portland, OR, July 2010.

Close, E. W., Close, H. G., S. McKagan, & R. E. Scherr. (2010). Energy in Action: The Construction of Physics Ideas in Multiple Modes. Paper presented at the American Association of Physics Teachers Summer Meeting, Portland, OR, July 2010.

Close, E. W. (2009). Teacher Characteristics and Student Learning in Secondary Science: Research Review. Poster presented at the American Association of Physics Teachers Summer Meeting, Ann Arbor, MI, July 2009.

Close, E. W. (2009). Teacher Characteristics and Student Learning in Physical Science: Relationships? Paper presented at the American Association of Physics Teachers Winter Meeting, Chicago, IL, February 2009.

Close, E. W., & M. Witiw. (2008). Problem-based Learning in Earth System Science. Paper presentd at the National Science Teachers Association Regional Conference, Portland, OR, November 2008.

Close, E. W., & M. Witiw. (2007). Earth System Science Courses for Teachers. Paper presented at the Washington Science Teachers Association Fall Meeting, Tacoma, WA, October 2007.

Close, E. W., & L. S. DeWater. (2007). Integrating Content and Methods for Preservice Teachers of Science. Paper presented at the Washington Teachers of Teachers of Science Annual Meeting, Pullman, WA, May 2007.

Close, E. W. (2007). Exploring Relationships: Teacher Characteristics and Student Learning in Physical Science. Paper presented at the American Association of Physics Teachers Winter Meeting, Seattle, WA, January 2007.

Close, E. W. (2006). Professional Development for Pre-service and In-service Teachers: Faculty-Practitioner Collaboration. Paper presented at the American Association of Physics Teachers Summer Meeting, Syracuse, NY, July 2006.

Close, E. W. (2005). Improving Student Learning of Thermodynamics: Too Much Work, Too Little Heat? Paper presented at the American Association of Physics Teachers Summer Meeting, Salt Lake City, UT, August 2005.

Close, E. W. (2004). Adapting research-based curricula at Seattle Pacific University: Results on student learning. Paper presented at the American Physical Society Northwest Section Meeting, Moscow, ID, May 2004.

Close, E. W. (2003). Implementing research-based curricula at SPU: Initial results. Paper presented at the American Association of Physics Teachers Washington Section Meeting, Edmonds, WA, October 2003.

2. Invited Talks, Lectures, and Presentations (TXST students <u>underlined</u>)**:**

Close, E. W., Quichocho, X. R., & Hyater-Adams, S. (2026). Access to ideational resources through LA Program elements supports Intersectional Physics (Science) Identity. Presented at The Ohio State University Department of Physics, Columbus, OH, May 2026.

Close, E. W. (2026). Supporting Equitable Student Success and Inclusive STEM Community through a Learning Assistant Program. Presented at The Ohio State University Department of Physics, Columbus, OH, May 2026.

Close, E. W. (2025). Teaching implicit bias and meritocracy in the LA Pedagogy course. Plenary presentation at the 2025 International Learning Assistant Conference, Boulder, CO, November 2025.

Close, E. W., & Lock, R. (2025.) Learning Assistant Programs for early teaching experiences & recruitment. Presented at the 2025 PhysTEC Conference, Washington, DC, August 2025.

Close, E. W. (2025). Student Success Through Support from Learning Assistants. Presented at TXST Elevate Student Success Summit, Texas State University, San Marcos, TX, May 2025.

Close, E. W. (2025). Cultivating student success and retention through structures supporting physics identity development. Presented at the University of North Texas Department of Physics, Denton, TX, February 2025.

Close, E. W., Quichocho, X. R., & Hyater-Adams, S. (2024). Access to ideational resources through LA Program elements supports Intersectional Physics (Science) Identity. Presented at the Western Washington University Science, Math, and Technology Education Program, Discipline-Based Education Research colloquium series, Bellingham, WA, November 2024.

Close, E. W. (2024). Supporting equitable student success and inclusive STEM community through a Learning Assistant Program. Presented at the Western Washington University Department of Physics, Bellingham, WA, November 2024.

Close, E. W. (2024). Supporting equitable student success and inclusive STEM community through a Learning Assistant Program. Presented at the California State University-San Marcos Center for

Research and Engagement in STEM Education, Discipline-Based Education Research colloquium series, San Marcos, CA, September 2024.

Close, E. W. (2024). Who does physics? Understanding students' physics identity development. Presented at the Physics Week conference, Texas State University Department of Physics, San Marcos, TX, September 2024.

Close, E. W. (2024). How Does the LA Program Impact TXST Students' Success, Physics Identity, and Sense of Belonging? Presented at the Texas State University Department of Physics, San Marcos, TX, March 2024.

Close, E. W. (2024). Supporting equitable STEM student success and inclusive community through a Learning Assistant Program and collaborative instructional teams. Presented at the American Society for Biochemistry and Molecular Biology Annual Meeting, San Antonio, TX, March 2024.

Close, E. W. (2023). Creating Inclusive Physics Community to Support Minoritized & Marginalized Students. Keynote presentation at conference "Another physics is possible! Exploring alternatives in physics teaching, culture, and knowledge" (organized by project FUSE: The unexpected scientists). Uppsala University (talk presented virtually), Uppsala, Sweden, October 2023.

Quichocho, X. Q., Hyater-Adams, S., & **Close, E. W.** (2023). Critical Physics Identity - Ideational Resources. Invited paper presented at the 2023 SACNAS National Diversity in STEM Conference, Portland, OR, October 2023.

Close, E. W. (2023). Supporting Student Success and Inclusive Physics Community through a Learning Assistant Program. Presented at University of Connecticut Department of Physics, Storrs, CT, March 2023.

Quichocho, X. R., & **Close, E. W.** (2021). Identity Performances of Multiply Marginalized Physics Students at HSIs. Paper presented at the American Association of Physics Teachers Summer Meeting, virtual conference, July 2021.

Close, E. W., Quichocho, X. R., Schipull, E. M., & Conn, J. (2021). Supporting Inclusive Physics Community through a Learning Assistant Program. Paper presented at University of Pittsburg Discipline-Based Science Education Research Center, May 2021.

Close, E. W., Quichocho, X. R., Schipull, E. M., & Conn, J. (2021). Supporting Inclusive Physics Community through a Learning Assistant Program. Paper presented at Washington State University Department of Physics, February 2021.

Olmstead, A., **Close, E. W.**, Tuvilla, M. R., Gutmann, B., Ochoa-Madrid, E., An, J., Luxford, C. J., Feng, L., & Galloway, H. C. (2021). Practical Recommendations for Cultivating Sustained STEM Instructional Change at HSIs. Paper presented at the American Association of Physics Teachers Conference, virtual conference, January 2021.

Close, E. W., & Quichocho, X. R. (2020). Supporting Physics Identity and Inclusive Community through a Learning Assistant Program. Paper presented at University of Washington Bothell Department of Physics, Bothell, WA, November 2020. (Presented remotely).

Close, E. W. (2019). Building a Sustainable Learning Assistant Program. Paper presented at University of Texas at Austin Department of Physics, Austin, TX, November 2019.

Close, E. W. (2019). Analysis of Learning Assistants' Physics Identity Development through the lens of Communities of Practice. Paper presented at Trinity University Department of Physics, San Antonio, TX, October 2019.

Close, E. W. (2019). Developing an Identity of Competence Through the TXST Learning Assistant Experience. Paper presented at Baylor University, Waco, TX, January 2019.

Close, H. G., & **Close, E. W.** (2019). Best Practices at Texas State University Physics Department. In invited/contributed session, *Recruiting Physics Teachers: Research and Best Practices*. Paper presented at the American Association of Physics Teachers Winter Meeting, Houston, TX, January 2019.

Close, E. W. (2018). Creating Resilient Community Through the TXST Learning Assistant Experience. In invited session, *Learning Assistants' Role in Affecting Community in Physics Departments and Beyond*. Paper presented at the American Association of Physics Teachers Summer Meeting, Washington, D.C., July 2018.

Close, E. W. (2018). Creating an Inclusive Teaching & Learning Community through the Learning Assistant Program Model. Paper presented at University of Oslo, Oslo, Norway, May 2018.

Close, E. W. (2018). Developing physics teacher identity through Learning Assistant program participation. In invited session, *Research in Recruiting Physics Teachers*. Paper presented at the American Physical Society April Meeting, Columbus, OH, April 2018.

Close, E. W. (2018). Learning Assistant Programs: Supporting learning, creating community, building physics identity. Plenary speaker, American Physical Society Physics Teacher Education Coalition (PhysTEC) Workshop: Building Thriving Undergraduate Physics Programs, College Park, MD, February 2018.

Close, E. W. (2017). Creating an Inclusive Teaching & Learning Community through the Learning Assistant Program Model. Paper presented at East Carolina University, Greenville, NC, August 2017.

Close, E. W. (2017). Recognizing and Addressing Unconscious Bias in Small Group Interactions. In invited talk + panel session, *Supporting Equity through Groupwork and Collaboration.* Paper presented at the American Association of Physics Teachers Summer Meeting, Cincinnati, OH, July 2017.

Close, E. W. (2017). Learning Assistant Participation as Negotiation of Identity: Making space for becoming human. Plenary paper presented at the Foundations and Frontiers in Physics Education Research Bi-Annual Conference, Bar Harbor, ME, June 2017.

Close, **E. W.**, Conn, J., & Close, H. G. (2016). Analysis of LA Physics Identity Through the Lens of Communities of Practice. Paper presented at the Physics Education Research Conference, Sacramento, CA, July 2016.

Close, **E. W.**, Conn, J., & Close, H. G. (2016). Examining LAs' self-concept and practice: What do they say, & what do they do? Poster presented at the Physics Education Research Conference, Sacramento, CA, July 2016.

Close, **E. W.**, Conn, J., & Close, H. G. (2016). Becoming physics people: Developing physics identity through the LA experience. Paper presented at the American Association of Physics Teachers Summer Meeting, Sacramento, CA, July 2016.

Close, E. W. (2016). Becoming physics people: Development of physics identity in self-concept and practice through the Learning Assistant experience. Paper presented at the American Physical Society April Meeting, Salt Lake City, UT, April 2016.

Close, E. W. (2016). Creating an Inclusive Teaching & Learning Community through the Learning Assistant Program Model. Paper presented at Texas Tech University Department of Physics, Lubbock, TX, February 2016.

Close, E. W. (2016). Becoming physics people: Development of physics identity in self-concept and practice through the Learning Assistant experience. Paper presented at Texas State University Department of Physics, San Marcos, TX, February 2016.

Turner, N., Roby, R., & **Close, E. W.** (2016). Gender Issues in Science. Panel discussion conducted at the Conference for Undergraduate Women in Physics, San Antonio, TX, January 2016.

Close, E. W. (2015). Creating an Inclusive Teaching & Learning Community through the Learning Assistant Program Model. Paper presented at Michigan State University Department of Physics, East Lansing, MI, November 2015.

Close, E. W. (2015). Supporting an Inclusive Teaching & Learning Community through the TXST Physics Learning Assistant Program. Paper presented at Texas State University Mathematics Education Seminar, San Marcos, TX, October 2015.

Close, E. W., Seeley, L., Robertson, A., DeWater, L. S., & Close, H. G. (2015). Recruiting and preparing teachers through inclusive, collaborative physics education community. Paper presented at the American Association of Physics Teachers Summer Meeting, College Park, MD, July 2015.

Close, E. W. (2015). Becoming physics people: Development of integrated physics identity through the Learning Assistant experience. Paper presented at Texas A&M University-Commerce Department of Physics, Commerce, TX, February 2015.

Close, E. W. (2013). Learning Assistant Development of Integrated Physics Identity. Paper presented at Clemson University Department of Engineering and Science Education, Clemson, SC, November 2013.

Close, **E. W.**, Conn, J., & Close, H. G. (2013). Learning Assistant Development of Physics (Teacher) Identity. Poster presented at the Physics Education Research Conference, Portland, OR, July 2013.

Close, E. W., & DeWater, L. S. (2013). Elementary program re-design I: Creating a new major for teachers. Paper presented at the American Association of Physics Teachers Winter Meeting, New Orleans, LA, January 2013.

DeWater, L. S., & **Close, E. W.** (2013). Elementary program re-design II: Integrating Physics Content and Methods. Paper presented at the American Association of Physics Teachers Winter Meeting, New Orleans, LA, January 2013.

Close, E. W., Close, H. G., & Donnelly, D. (2012). Understanding the Learning Assistant experience with Physics Identity. Poster presented at the Physics Education Research Conference, Philadelphia, PA, August 2012.

Close, E. W. (2012). Learning Assistants in Introductory Physics Courses: Impacts on Conceptual Understanding, Beliefs about Science, & Physics Identity. Paper presented at the 20th Annual Workshop on New Trends in Physics Teaching, Puebla, Mexico, May 2012.

Close, E. W., Close, H. G., Scherr, R. E., & McKagan, S. (2011). Development of proximal formative assessment skills in video-based teacher professional development. Poster presented at the Physics Education Research Conference, Omaha, NE, August 2011.

Close, E. W. (2008). Teaching People How to Teach Children How to Think Like Scientists. Paper presented at the American Association of Physics Teachers Summer Meeting, Edmonton, Alberta, Canada, July 2008.

3. Consultancies:

Advisory Board Member, Agents of Change: Investigating How Partnerships between Faculty and Learning Assistants Enable Pathways for Sustainable Institutional and Classroom Transformation (NSF 2234071/2234073/ 2234074, 2023-2028). Advise PIs Laura Ríos, California State Polytechnic University; Kim Coble, San Francisco State University; and Cassandra Paul, Resa Kelly, and Gina Quan, San José State University, on research project exploring how partnerships between STEM

faculty and undergraduate LAs can enable sustainable institutional and classroom transformation that leads to more inclusive and engaging learning environments for students.

Advisory Board Member, Training to Elicit and Leverage Ideas about Science (TRELLIS): A Learning Assistant program to make physics teaching more effective, equitable, and engaging (NSF 2235760, 2023-2026). Advise PIs Lisa Goodhew, Seattle Pacific University, and Rachel Scherr, University of Washington Bothell, on research project developing a model for training LAs to effectively elicit and build on students' science ideas.

Advisory Board, Research for EDucator Equity & Excellence (REDEE) Center (December 2020-present) Discuss and provide feedback on research white papers written by REDEE Center directors on educator preparation; collaborate to develop equity-focused research agenda, submit proposals for educator preparation and employment research.

Advisory Board Member, Facilitation Practices of Instructional Assistants (NSF 2000603, 2020-2024). Advise PI Ira Caspari, Tufts University, on research project investigating Learning Assistant facilitation practices in chemistry and physics courses.

Advisory Board Member, Assessing Attentiveness to Student Ideas in Physics (NSF 2021258, 2020-2023). Advise PI Leslie Atkins, Boise State University, on research project developing assessment tools for physics teacher preparation programs.

Elementary Inquiry-Based Science Collaboration (October 2011-June 2014)

Collaborate with Ms. Sara Torres, elementary enrichment teacher at Travis Elementary School in San Marcos, to develop and implement hands-on, inquiry-based physics lessons for fifth-grade students in the Supernova program (gifted & talented / talent-pool students). Support Ms. Torres and colleagues in exploring opportunities for inquiry-based science lessons in all grade levels and for all students. Develop and co-teach workshops for all Travis Elementary teachers on integration of inquiry-based science and expository writing instruction. Bring Texas State students enrolled in honors science course to Travis Elementary to teach inquiry-based science lessons and to support teachers.

4. Workshops:

a. Invited Workshops (also see Section IV. Service):

Protecting ourselves and our students from impostor syndrome & stereotype threat. **E. W. Close**, S. Hall, R. Patel, & D. Williams. Student Academic Support Programs Conference, Texas State University, February 2024, San Marcos, TX. 60-minute workshop.

Essential Elements of the Learning Assistant Model. Workshop presented to the Department of Physics, University of Connecticut, March 2023, Hartford, CT. 60-minute workshop.

2022 Nordic Learning Assistant Conference. Oslo, Norway, June 2022. Conference organizer and facilitator: with a team of three colleagues, design and implement two-day workshop introducing the Learning Assistant model to faculty from Norway, Sweden, and Finland. (See details in Section IV. Service.)

Cultivating an Inclusive Culture in the Physics Department through a Learning Assistant Program. **E. W. Close** & X. R. Quichocho. 2021 PhysTEC Conference, March 2021, virtual. 60-minute workshop.

Learning Assistant Workshop. **E. W. Close**, X. R. Quichocho, & K. Salty. Workshop presented to the Department of Physics, University of Texas at Austin, February 27, 2020, Austin, TX. 2-hour workshop.

Essential Elements for Setting Up Your Learning Assistant Program. V. Otero, **E. W. Close**, B. Evans, &. L. Langdon. 2020 PhysTEC Conference, February 2020, Denver, CO. 3-hour workshop.

Cultivating an Inclusive Culture in the Physics Department through a Learning Assistant Program. 2020 PhysTEC Conference, February 2020, Denver, CO. 75-minute workshop.

Learning Assistants in STEM Courses and Beyond. Seminars for Excellence in Teaching. Academy for Teaching and Learning. M. E. Moore, M. Parizi-Robinson, and **E. W. Close**. January 2019, Baylor University. Waco, TX. One-hour workshop.

Introduction to the Learning Assistant Model. Greenville, NC, August 2017. Design and run two-day workshop on LA program model for STEM faculty at East Carolina University.

The Learning Assistant Model: Transforming Student Learning Experiences & Building Community. PhysTEC National TIR Meeting, Sacramento, CA, July 16, 2016. Introduce the LA model to current Teachers in Residence at funded PhysTEC sites. One-hour workshop.

Integrating Expository Writing & Hands-on Science. SMCISD professional development for all teachers of grades 4-5. Travis Elementary School, January 2016; with S. Torres, co-presenter. 90-minute workshop.

Imagining How Things Really Are: Models for States of Matter. Keynote workshop for TAIR-CTWP Conference 2013. Round Rock, TX, February 2013; with H. Close, co-presenter. One-hour workshop.

STELLAR Science Saturday: Integrating Science and Poetry. Workshop: *Understanding States of Matter through Embodied Learning.* San Marcos, TX, September 2012; with H. Close, co-presenter. Ninety-minute workshop for elementary and middle school teachers.

Integrating Inquiry Science and Writing in grades 3-5. Travis Elementary School, August 2012; with S. Torres, co-presenter. Three-hour workshop.

Integrating Inquiry Science and Writing in grades K-2. Travis Elementary School, August 2012; with S. Torres, co-presenter. Three-hour workshop.

Making the Abstract Concrete with a Kinesthetic Activity for Energy. STELLAR Summer Institute, San Marcos, TX, July 2012; with H. Close, co-presenter. Two-hour workshop.

STELLAR Science Saturday: Physics of Sound. San Marcos, TX, May 2012. One-hour workshop for middle school students and their teachers (repeated for three sessions).

Inquiry Science and Vocabulary Development in grades K-3. Travis Elementary School, February 2012; with L. Wilder & S. Torres, co-presenters. Ninety-minute workshop.

Introduction to a Diagnostic Learning Environment. Physics Teacher Education Coalition (PTEC) 2008 Conference on the Preparation of Physics and Physical Science Teachers, Austin, TX, February 2008; with P. Kraus, co-presenter. Ninety-minute workshop.

Introduction to the Reformed Teaching Observation Protocol (RTOP). American Association of Physics Teachers Washington Section meeting, Seattle, WA, November 2006; with L. DeWater, co-presenter. Ninety-minute workshop.

b. Contributed and Grant-Supported Workshops (also see Section IV. Service):

Using the Critical Physics Identity framework to identify ways to support diverse students. Workshop presented at the 2025 Physics Education Research Conference, Washington, DC, August 2025; with X. Quichocho, co-presenter. 90-minute workshop.

Critical Conversations: Addressing the impact of external stresses on research through empathy and care. Workshop presented at the 2024 Physics Education Research Conference, Boston, MA, July 2024; with A. Hamden, S. Franklin, and B. Gutmann, co-presenters. 90-minute workshop.

Increasing Student Success and Cultivating an Inclusive Culture in the Physics Department Through a Learning Assistant Program. Workshop presented at the 2023 Joint Spring Meeting of the Texas Sections of APS, AAPT, and Zone 13 of the SPS, Commerce, TX, March 2023; with X. Quichocho, co-presenter. 90-minute workshop.

Equity Focused Scholarship in STEM Courses. Two-day workshop offered through the Learning Assistant Alliance. Virtual workshop, June 24-25, 2021. Co-facilitate workshop; co-develop and co-present workshop session: *Qualitative Research.*

Cool NASA Stuff, NGSS, and Cultural Competency. American Association of Physics Teachers Summer Meeting, Sacramento, CA, July 2016; with A. Ortiz, co-presenter. Four-hour workshop.

The Learning Assistant Model: Transforming Student Learning Experiences & Building Community. 2016 Texas State University STEM Faculty Summer Learning Community, San Marcos, TX, May 2016. 90-minute workshop.

Video Analysis with Preservice Teachers and Learning Assistants. 2014 Physics Teacher Education Coalition Conference, Austin, TX, May 2014; with A. Little and L. Barth-Cohen, co-presenters. 90-minute workshop.

Building scientific curiosity, content knowledge, and inquiry skills through investigations of simple electric circuits. NSTA 2013 National Conference, San Antonio, TX, April 2013; with S. Torres, co-presenter. One-hour workshop.

Formative Assessment in Physics I. Course for inservice secondary teachers (Seattle, WA, October 2009-May 2010; supported by NSF grant DRL-0822342)

Energy for Secondary Teachers I. Two-week summer course for inservice secondary teachers (Seattle, WA, August 2009; supported by NSF grant DRL-0822342)

Understanding Energy. One-week course for inservice upper-elementary teachers (Seattle, WA, June 2009; supported by NSF grant DRL-0822342)

Designing a Diagnostic Learning Environment: A Workshop for Teacher Educators. American Association of Physics Teachers Summer Meeting, Ann Arbor, MI, July 2009; with H. Close and L. DeWater, co-presenters. Four-hour workshop.

Mentoring K-12 Science Teachers using the Reform Teaching Observation Protocol. Workshop for University Coordinators (supervisors for student-teachers) and STEM faculty at Seattle Pacific University, January 2009; with L. DeWater, co-teacher. Five-hour workshop.

Motion and Design Content Workshop. Workshop for inservice elementary teachers, through ESD 105 in Yakima (supported by a state MSP grant), WA, February 2007 (one day), May 2009 (one day); with H. Close, co-teacher. Seven-hour workshops.

Physics by Inquiry: Astronomy by Sight. Summer workshop for science graduate students for Western Washington University's NSF GK-12 grant, July 2006; with A. Boudreaux, co-teacher. Two-day workshop.

Physics by Inquiry: Heat & Temperature. Course for inservice middle school teachers (Seattle, WA, Spring 2004 & August 2004; supported by the *Middle School Science Systemic Change Partnership*)

Physics of Sound. Three-week course for Tibetan Buddhist monks through the *9th Annual Science for Monks Workshop* (www.scienceformonks.org) (Bir, India, June 2007; supported by the Library of Tibetan Works and Archives)

Physics by Inquiry (including Properties of Matter, Astronomy by Sight, Kinematics, Electric Circuits, Electrostatics, Light & Color, Light & Optics, Special Relativity), for inservice K-12 teachers through

the NSF Summer Institute for Teachers, Physics Education Group, University of Washington (Seattle, WA, June-August 2001, 2002, 2003)

5. Other Works Not in Print (TXST students underlined)**:**

a. Works submitted or under review:

Close, E. W., & Quichocho, X. R. (under review.) Expert Recommendation: How can my department support marginalized physics students? (Submitted for inclusion in PhysPort Expert Recommendations, https://www.physport.org/recommendations/)

b. Works in progress:

Feng, L., Luxford, C. J., Olmstead, A., **Close, E. W.**, Galloway, H., Pierson, J. A., & Ramey, C. (in prep). Learning to Teach: The Impact of Learning Assistant Model on Retention Rates, College Completion Rates, and STEM Labor Market Outcomes.

Quichocho, X. R., Schipull, E. M., & **Close, E. W.** (in prep). [tentative title] People Like Me: Intersectional Identity in a Physics Learning Assistant Program.

Close, E. W., Conn, J., Zamora, R., & Hesaaraki, S. (in prep). [tentative title] Re-conceptualizing "off task" behavior: Identity work in interactive instruction.

McCauley, A., Hesaaraki, S., Wolf, S. F., & **Close, E. W.** (in prep). [tentative title] Understanding LA Sensemaking: using "teacher hat" to prompt changes in discussion frame.

C. GRANTS AND CONTRACTS

1. Funded External Grants and Contracts:

Principal Investigator for TXST, *Learning Assistant Professional Development for Facilitation Practices in Active Learning STEM Courses*. (NSF DUE-2417140). Tufts University, lead institution: I. Caspari-Gnann, PI (NSF 2417138). Texas State University, collaborating institution: **E. Close, PI**; A. Olmstead, Co-PI. Chicago State University, collaborating institution: A. Van Duzor, PI (NSF 2417139). $400K total / $29K TXST (08/2024-07/2027).

Three-year project in collaboration with two other institutions. Implement and iteratively revise instructional materials for the LA Pedagogy course based on research conducted at Tufts on LA facilitation practices, working with collaborators at Tufts University (primarily white institution) and Chicago State University (predominantly Black institution). Investigate how the pedagogy lessons change LAs' reflections and their facilitation practices, how this change impacts student learning in STEM classes, and how the STEM class environments influence LA learning.

Senior Personnel, *Creating Equitable Pathways to STEM Graduate Education.* (Sloan Foundation). K. Lewis, PI; S. Whitten, L. Hough, E. Hodby, Co-PIs; N. Theodoropoulou, **E. W. Close**, B. Rangelov, T. Z. Islam, T. Betancourt, J. Berry, N. Finklestein, M. MacGregor, J. Brown, & J. Eaves, Supporting / Senior Personnel; $249,299 (01/2023-06/2026).

Recruit and support research students in the physical sciences at TXST to build research skills through undergraduate research at TXST, summer research experiences at TXST and University of Colorado – Boulder, and co-mentoring by TXST and CU Boulder faculty.

Co-Principal Investigator, *Building Capacity: Creating Faculty-Student Communities for Culturally Relevant Institutional Change*. (NSF DUE-1928696). H. Galloway, PI; **E. Close**, L. Feng, C. Luxford, & A. Olmstead, Co-PIs; $2.5M (10/2019-09/2024).

Engage faculty and students across Texas State University's College of Science and Engineering in workshops, departmental self-assessments, redesign of lower-division gateway courses, and project-

level decision making. Participating STEM departments will receive intellectual, material, and logistical supports to empower faculty-student teams in developing sustainable communities of practice focused on culturally relevant instruction. The project will also involve three research strands that focus on communities of practice among faculty and students, STEM student trajectories at Texas State, and student graduation rates and STEM workforce outcomes for Texas State and other Hispanic Serving Institutions.

Co-Principal Investigator, *Developing Faculty Resources of Evidence-based Practices that Improve Learning and Equity in STEM*. (NSF DUE-1928596). B. Van Dusen, PI; **E. Close**, J. Nissen, & R. Talbot, Co-PIs; $2.0M total / $702K TXST sub-award (10/2019-09/2024).

Support HSI faculty in implementing, adapting and assessing evidence-based instructional strategies that support equitable outcomes; research potential bias in research-based assessments; use the LASSO online assessment database to establish baseline for equity in STEM disciplines; build a framework and set of resources on the scholarship of teaching and learning in a culturally diverse and equitable learning environment.

Principal Investigator for TXST, *Collaborative Research: Understanding Robert Noyce Teacher Scholarship Outcomes in Texas* (NSF DUE-1557276). **E. Close**, PI (Collaborating); H. Close, D. Donnelly, Co-PIs (Collaborating); C. Horn, PI (Univ. of Houston, Lead Institution); $797K total / $50K TXST award (07/2016-06/2020).

Collaborative research team of 8 Universities across Texas that currently have funded Noyce projects (Stephen F. Austin University, University of Houston - Clear Lake, University of Houston, University of Houston - Downtown, University of Texas at Austin, University of Texas at Arlington, Texas State University, Texas A&M Kingsville) will collaborate to promote rigorous evaluation of program components associated with effective recruitment, training, and retention of highly qualified teachers in STEM fields.

Principal Investigator, *Building STEM Skills, Community, and Belonging to Retain Majors.* (Renewal) (Halliburton Foundation Grant 2614). **E. Close**, PI; $15K (09/2016-12/2017). (Research, teaching, and service.)

Supplement the NSF *Texas State STEM Rising Stars project* (below) through increased funding for the Physics Learning Assistant (LA) program and for LA program expansion; increased funding for STEM faculty professional development and LA implementation support; and additional capacity for Spatial Visualization Skills workshop and community building for lower-division STEM students.

Principal Investigator, *Building STEM Skills, Community, and Belonging to Retain Majors.* (Halliburton Foundation Grant 2548). **E. Close**, PI; $30K (09/2015-12/2016). (Research, teaching, and service.)

Supplement the NSF *Texas State STEM Rising Stars project* (see below) through increased funding for the Physics Learning Assistant (LA) program and for LA program expansion; increased funding for STEM faculty professional development and LA implementation support; and additional capacity for Spatial Visualization Skills workshop and community building for lower-division STEM students.

Senior Personnel, *Future Aerospace-Engineers and Mathematicians Academy*. A. Ortiz, PI. $410K (10/2015-09/2018). (Program development, teaching, and research.)

Increase participation and retention of historically underserved and underrepresented students in STEM disciplines, including women and minority groups, through summer camps, tutoring, and family involvement initiatives. A collaborative effort between the TXST LBJ Institute for STEM Education and Research, the San Marcos Consolidated Independent School District (SMCISD), and the Centro Cultural Hispano de San Marcos (Centro).

Principal Investigator, *PERTG – Visiting Scholar Grant.* $1K. (Spring 2015) (Research.)

Funds awarded by the Physics Education Research Topical Group (PERTG) for travel to spend one week as visiting scholar with the Physics Education Research Group at Florida International University, to plan collaborative research projects.

Co-Investigator, *NASA STEM Educator Professional Development Collaborative*. A. Ortiz, PI; L. Huling, J. Van Overshelde, G. Dickinson, B. Bos, **E. Close**, M. A. Sorto, B. Asiabanpour, V. Sriraman, Co-Is; $15M (10/2014-09/2019) (Program development, teaching, and research.)

Develop, research and facilitate the delivery of various forms of NASA-related professional learning experiences for educators nationwide through partnerships between the College of Education and College of Science and Engineering, and between Texas State University and other Minority Serving Institutions.

Co-Principal Investigator, *Texas State STEM Rising Stars* (NSF DUE-1431578). A. Ortiz, PI; **E. Close**, M. Guirguis, C. Novoa, K. Talley, Co-PIs; $1.5M (01/2015-01/2020). (Program development, teaching, and research.)

Research component: Study impacts of programmatic innovations on second-year STEM undergraduate student retention rate, both overall and for specific underrepresented groups, and on faculty perceptions of research-based instructional practices. **Service / program development component**: Work with interdepartmental project team to organize and implement a multi-faceted program of activities based on the adaptation of best practices that address student academic and social needs while fostering instructional change. Lead sub-project on LA program expansion; run workshops for interested faculty, assist with recruiting LAs for pilot implementations in departments without current LA programs.

Co-Principal Investigator, *Communities and Pathways: Cultivating Science Educator Identity for Undergraduates through an Inclusive Physics Learning Assistant Program and STEM Teacher Certification Alignment* (NSF grant DUE-1240036). H. Close, PI; **E. Close**, D. Donnelly, Co-PIs; $350K (01/2013-12/2015). (Teaching and research.)

Build and support a thriving community of undergraduate students who identify as science educators by: expanding Learning Assistant (LA) program in the physics department; aligning STEM degrees with teacher certifications; collaborating with colleagues at San Antonio College and Austin Community College (two-year colleges, source of transfer students for Texas State University) to support development of LA programs at those institutions.

Co-principal investigator, *Honing Diagnostic Practice: Toward a New Model of Teacher Professional Preparation and Development* (NSF grant DRL-0822342). S. Vokos, PI; **E. Close**, L. Seeley, P. Kraus, J. Minstrell, Co-PIs; $3.7M (09/2008-08/2013). (Teaching and research.)

Develop and implement a two-year sequence of rigorous content-based professional development courses for inservice secondary teachers with a focus on formative assessment in the context of energy. Develop and test web-based tools for formative assessment of student learning about energy. Investigate the evolution of teachers' ideas about energy and formative assessment. Investigate the evolution of teachers' establishment of a diagnostic learning environment in the science classroom.

Research team member for research applying the results of neurobiology to education through SPU's Brain Center for Applied Learning Research. J. Medina, PI (2006-2009).

Design and implement a quasi-experimental research study applying neurobiology of declarative memory formation to elementary mathematics instruction, including pilot study (8 classrooms) and full-scale study (20 classrooms). Develop lesson scripts and assessments for experimental and control groups.

Senior personnel, *Improving the Effectiveness of Teacher Diagnostic Skills and Tools* (NSF grant ESI-0455796). S. Vokos, PI; J. Lindberg, L. Seeley, P. Kraus, J. Minstrell, Co-PIs; $1.5M (04/2005-03/2010). (Teaching and research.)

Develop and implement rigorous content-based professional development courses for inservice secondary teachers in the content areas of Properties of Matter, Heat & Temperature, and Physical & Chemical Change. Develop and test web-based tools for formative assessment of student learning in these content areas.

Senior personnel, *Adaptation and implementation of research-based curricula in introductory physics courses at Seattle Pacific University* (NSF grant DUE-0310583). S. Vokos, PI; B. Gill, J. Lindberg, L. Seeley, Co-PIs; $88K (09/2003-08/2006). (Teaching and research.)

Implement and assess course reforms in introductory algebra-based physics sequence.

Research and teaching assistant, Physics Education Group, University of Washington (09/2000-08/2003) (supported by NSF through various grants). (Teaching and research.)

Assist with development or revision of tutorials in space-time physics and quantum mechanics; revise *Physics by Inquiry* electrostatics curriculum; contribute to *Tutorials in Introductory Physics: Instructors' Guide.*

2. Submitted, but not Funded, External Grants and Contracts:

Proposals under review:

Principal Investigator, *Characterizing Thriving Spaces: Supporting the Science Identity of Multiply Marginalized Students*. (Submitted to NSF IUSE, January 2025.) **E. W. Close, PI**; S. Hyater-Adams, Co-PI; X. R. Quichocho, Senior Personnel; $400K (07/2025-06/2028).

Proposals not funded:

Principal Investigator for TXST, *Collaborative Research: Improving Methods and Practice Across Collaborative Teaching with the Learning Assistant Model (IMPACT-LA)*. (Submitted to NSF IUSE, July 2025.) Montana State University, lead institution: J. Nissen, PI. Texas State University, collaborating institution: **E. W. Close**, PI; C. J. Luxford, Co-PI. Chicago State University, Florida Gulf Coast University, Florida Atlantic University, Oregon State University, Rochester Institute of Technology, collaborating institutions. $2M total / $347K TXST (06/2026-05/2030).

Co-Principal Investigator, *Advancing Equity at Keystone Institutions.* (Submitted to Spencer Foundation: Vision Grants (planning grant), September 2024.) J. Nissen, PI; E. W. Close, C. Schick, D. Quick, R. Katoum, S. Savrda, M. Davis, P. Rodgers, T. Wong, A. Van Duzor, M. Sabella, J. Randolph-Flagg, Co-PIs; $75K total / $3K TXST (01/2025-12/2025).

Co-Principal Investigator for TXST, *Collaborative Research: A Six-Institution Study on the Impacts of Learning Assistant Programs on Student Success and Equity*. (Submitted to NSF IUSE, July 2024.) Rochester Institute of Technology, lead institution: T. Wong, PI; S. Franklin, Co-PI. Texas State University, collaborating institution: C. J. Luxford, PI; **E. W. Close**, Co-PI. Chicago State University, Florida Gulf Coast University, Florida Atlantic University, Oregon State University, collaborating institutions. $1.4M total / $182K TXST (04/2025-03/2029).

Principal Investigator, *Characterizing Thriving Spaces: Supporting the Science Identity of Multiply Marginalized Students*. (Submitted to NSF IUSE, July 2024.) **E. W. Close**, PI; S. Hyater-Adams, Co-PI; X. R. Quichocho, Senior Personnel; $750K (03/2025-02/2028).

Principal Investigator, *Thriving Spaces: Supporting Multiply Marginalized Students in the Physical Sciences*. (Submitted to NSF EES-Racial Equity, December 2023). **E. W. Close**, PI; S. Hyater-Adams, Co-PI; X. R. Quichocho, Senior Personnel; $913K (08/2024-07/2027).

Co-Principal Investigator, EMPOWERING ACADEMIC EXCELLENCE: A comprehensive approach through Developmental Education, STEM Communities and Community Engagement at Texas State University. (Submitted to U.S. Department of Education PSSG program, September 2023). V. G. Black, PI; N. E. Weimer, A. R. Olmstead, E. K. J. Suh, S. N. Ashford-Hanserd, **E. W. Close**, Co-PIs; $7.8M (01/2024-12/2027).

Co-Principal Investigator for TXST, *Collaborative Research: A Six-Institution Study on the Impacts of Learning Assistant Programs on Student Success and Equity.* (Submitted to NSF DUE-IUSE program, July 2023). Rochester Institute of Technology, lead institution: T. Wong, PI; S. Franklin, Co-PI. Texas State University, collaborating institution: C. J. Luxford, PI; **E. W. Close**, Co-PI. Chicago State University, Florida Gulf Coast University, Florida Atlantic University, Oregon State University, collaborating institutions. $750K total / $126K TXST (04/2024-03/2027).

Co-Principal Investigator, *Collaborative Research: Multifaceted Program Evaluation and Research for Enhancing Student Success (MPERESS)*. (Submitted to NSF DUE-IUSE program, July 2022). Rochester Institute of Technology, lead institution: T. Wong, PI; E. K. Mehlman, S. Franklin, Y. Kalender, Co-PIs. Texas State University, collaborating institution: C. J. Luxford, PI; **E. W. Close**, Co-PI. Nissen Education Research & Design, collaborating institution: J. Nissen, Co-PI. $600K total / $122K TXST (04/2023-03/2026).

Co-Principal Investigator, *Collaborative Research: Retention, Persistence, and Effectiveness of STEM Teachers in High-need School Districts - An Investigation of the NSF Robert Noyce Teacher Scholarship*. (Submitted to NSF DUE-Noyce program, August 2018). L. Feng, PI; **E. Close**, Co-PI (Texas State University, Lead Institution); $1.1M total / $361K TXST (09/2019-08/2023).

Co-Principal Investigator, *Building Capacity: Developing Potential through the Honors Science Initiative*. (Submitted to NSF IUSE-HSI program, March 2018). H. Galloway, PI; **E. Close**, K. Daniel, T. Betancourt, D. Brown, Co-PIs; $1.33M (01/01/2019-12/31/2023).

Co-Principal Investigator, *Building Capacity: Learning about Inclusivity and Community (LInC)*. (Submitted to NSF IUSE-HSI program, March 2018). B. Van Dusen, PI; **E. Close**, R. Talbot, J. Nissen, Co-PIs; $1.26M (10/01/2018-9/30/2022).

Principal Investigator, *CAREER: Addressing the National Shortage of Physics Majors and Teachers: Building Identity through the Undergraduate Learning Assistant Model.* (Submitted to NSF IUSE program, July 2017). $746K (05/2018-05/2023).

Co-Principal Investigator, *Retention, Persistence, and Effectiveness of STEM Teachers in High-need School Districts—An Investigation of NSF Robert Noyce Teacher Scholarship.* (Submitted to NSF Noyce program, September 2016). L. Feng, PI; **E. Close**, L. Huling, Co-PIs (Texas State University, Lead Institution); $1.1M total / $507K TXST (09/2017-08/2021).

Principal Investigator for TXST, *Collaborative Research: Promoting Faculty and Institutional Change by Engaging with the Learning Assistant Model* (Submitted to NSF IUSE program, January 2016). E. Close, PI (Collaborating); L. Hartley, PI (University of Colorado-Denver, Lead Institution); $3.0M total / $264K TXST (08/2016-07/2020).

Co-Principal Investigator, *Sustain, Transform and Reenergize (STAR) S-STEM Students* (Submitted to NSF S-STEM program, August 2014). S. Aslan, PI; H. Salamy, A. Qasem, E. Close, B. Asiabanpour, Co-PIs; $592K (08/2015-07/2020). (Teaching, research, and service.)

Co-Principal Investigator, *BEMUP-z: Body Engagement with Mathematics in Undergraduate Physics – Complex Numbers* (Submitted to NSF IUSE program, February 2014). H. Close, PI; E. Close, D. Donnelly, Co-PIs; $330K (09/2014-08/2017). (Research.)

Co-Principal Investigator, *3-D Physical Science Professional Learning Community Model Project* (Submitted to NSF DRK-12 program, December 2013). A. Ortiz, PI; E. Close, G. Dickinson, M.

Huerta, L. Huling, Co-PIs; $450K (06/2014-08/2016). (Teaching, research, and program development.)

Co-Principal Investigator, *Investigation and Reasoning in Physical Science* (Texas Higher Education Coordinating Board – Teacher Quality Grants proposal, submitted October 2013). A. Ortiz, PI; E. Close, G. Dickinson, S. Garza, L. Huling, A. Talley, K. Talley, Co-PIs; $550K (03/2014-04/2015). (Teaching, research, and program development.)

Principal Investigator (Collaborating), *Collaborative Research: Type 2: Developing Engineering Students as Self-regulated Learners: A Texas Collaborative.* (NSF TUES-1323611, submitted 01/2013). E. Close, PI (Collaborating); H. Close, Co-PI (Collaborating); J. Froyd, PI (Lead Institution); P. K. Imbrie, Co-PI (Lead Institution); $599K (08/2013-07/2016). (Teaching, research, and program development.)

Co-Principal Investigator, *An Enhanced Model for Science Teacher Preparation* (NSF grant proposal 1035505). J. Lindberg, PI; E. Close, F. Kline, R. O'Leary, Co-PIs; $2.3M (submitted 03/2010). (Teaching, research, and program development.)

See also Submitted, but not Funded, External Teaching Grants and Contracts

3. Funded Internal Grants and Contracts:

Principal Investigator, *Development of Physics Identity through the TXST LA Program: Investigating shifts in practice.* $8K (01/2016-12/2016).

Study Learning Assistant (LA) development of physics identity through analysis of video data, in order to understand the details of participation in the TXST LA program and how the LA experience impacts participants' practice. Video-record and analyze LAs' interactions with each other and with faculty during weekly group preparation sessions.

D. FELLOWSHIPS, AWARDS, HONORS:

Presidential Distinction Award for Excellence in Research, College of Science and Engineering, Texas State University, 2025

College Achievement Award for Excellence in Scholarly/Creative Activities, College of Science and Engineering, Texas State University, 2020

First Place Team, CoSearch 2017: The Bridge Project

Member of team "FACES of TXST" that won the 2017 CoSearch competition. CoSearch is an intensive retreat where multi-disciplinary teams of researchers and artists collaborate to develop research plans. Proposed research to bridge the invisible education gap from high school to college for foster care youth by identifying protective factors that foster college-ready identities. Collaborated with team members from School of Social Work, Department of Curriculum & Instruction, Department of Communication Studies, Department of Health and Human Performance, and School of Journalism and Mass Communication.

Department of Physics Nominee, TXST Presidential Award for Excellence in Research, 2016

Faculty Research Fellow, Texas State University LBJ Institute for STEM Education and Research, 2015-2018

Member of the Founding Cohort of Faculty Research Fellows of the Texas State University LBJ Institute for STEM Education and Research. Collaborate in support of research, education and service efforts that further prepare university students and faculty, enhance science, technology, engineering and mathematics teacher preparation, and contribute to the recruitment and production of more scientifically and technologically literate professionals.

IV. SERVICE

A. INSTITUTIONAL

1. University:

Search Committee, Honors College Dean (November 2025-April 2026)

Academic Program Review Team, Department of Curriculum and Instruction – Internal team member (January 30-31, 2025)

Collaborate with three external team members to conduct a review of all academic programs in the TXST Department of Curriculum and Instruction, including analysis of departmental self-study, two-day site in-person visit, and final report. Work with review team to recognize strengths, assist program in setting goals, and identify areas for improvement and resources needed.

Lamborn-Hughes Institute team member (August 6-8, 2024)

Participate as a member of the TXST team in the Lamborn-Hughes Institute (team application required). Team members included Dr. Aswath; Dr. Candace Hastings (Director, Faculty Development); Dr. Nicholas Weimer (Assistant Vice Provost for Experiential and Academic Initiatives and Director of the Texas Success Initiative); Dr. Vedaraman Sriraman (Vice Provost for Academic Innovation and Success); Dr. Jeff Housman (Assistant Vice Provost for Curriculum and Academic Programs); and Dr. Alice Olmstead (Assistant Professor of Physics and Co-Director, STEM Communities Learning Assistant Program). Participated in intensive, collaborative three-day institute to develop an action plan for institutional support of undergraduate education at TXST.

Academic Services Committee – sub-committee of Provost's Student Success Initiative (2022-present)
Meet biweekly during the academic year with representatives from academic support programs across campus to identify common concerns and resources, increase collaboration and communication between services, advocate for practices and policies to support students employed in academic services, and contribute to persistence and retention of all TXST students.

General Education Council (September 2015-June 2016)
Review and provide feedback on content, policies, and assessment of Texas State's General Education Core Curriculum.

Search Committee, STEM Education position, Department of Curriculum & Instruction (September 2015-April 2016)
Serve as search committee member from outside the department in successful search for a new tenure-line STEM Education faculty.

Panelist for Admitted Student Event (February 2014)
Serve on a panel of STEM faculty for an event organized by Undergraduate Admissions for admitted students and their parents, February 14, 2014; describe physics program opportunities and responded to questions.

2. College:

Co-Director, STEM Communities Learning Assistant Program (2021-present)
Run all aspects of the STEM Communities Learning Assistant program with co-director Dr. Alice Olmstead: Recruit, interview, hire, and schedule 120-150 LAs into supported sections of physics, biology, math (2021-2023), and chemistry courses each semester; organize weekly preparation sessions with faculty-LA instructional teams; meet monthly with course team leads and biweekly with

LA Advisory Committee; create and iteratively improve structures developing community and supporting faculty and LAs; secure external and internal funding; collect and analyze program data.

Co-PI, Faculty-Student Communities for Improving STEM Instruction Project (Oct. 2019-Sept. 2025)
Collaborate with PI team and two postdoctoral scholars to provide professional development events for College of Science and Engineering faculty. Engage faculty and students across the College of Science and Engineering in workshops, departmental instructional assessments, and collaborative redesign of lower-division gateway courses. Provide intellectual, material, and logistical supports to empower faculty-student teams in developing sustainable communities of practice focused on culturally relevant instruction. Support undergraduate Learning Assistants (LAs) to work with faculty on course redesign teams; co-organize and co-direct weekly preparation sessions with LAs and faculty. Meet monthly with course redesign team leads and biweekly with LA Advisory Committee. Design and teach HONORS 3210: STEM Cognition and Pedagogy / BIO 3210: Biology Pedagogy and Learning / CHEM 3210: Chemistry Pedagogy and Learning (stacked courses), required course for first-time LAs.

Project professional development events:

- Summer 2026 STEM Teaching Summer Institute. (May 19-21and Aug. 10-11, 2026). Co-designed and co-led five-day in-person workshop for Course Redesign Teams in Biology (BIO 1330 & 1331), Chemistry (CHEM 1341 & 1342), and Physics (PHYS 2325 & 2326), along with undergraduate Learning Assistants.
- Summer 2024 STEM Teaching Summer Institute. (May 15-21, 2024). Co-designed and co-led five-day in-person workshop for Course Redesign Teams in Biology (BIO 1330 & 1331), Chemistry (CHEM 1320 & 1341), and Physics (PHYS 1335 & 1345), along with undergraduate Learning Assistants.
- Summer 2023 STEM Teaching Summer Institute. (May 18, 2023 - May 24, 2023). Co-designed and co-led five-day in-person workshop for Course Redesign Teams in Biology (BIO 1330 & 1331), Chemistry (CHEM 1341), and Physics (PHYS 1335 & 1345), along with undergraduate Learning Assistants.
- Summer 2022 STEM Teaching Summer Institute. (May 18, 2022 - May 27, 2022). Co-designed and co-led eight-day in-person workshop for Course Redesign Teams in Math (MATH 2472), Biochemistry (CHEM 3375), Biology (BIO 1330 & 1331), Chemistry (CHEM 1341), and Physics (PHYS 1335 & 1345), along with undergraduate Learning Assistants.
- Summer 2021 STEM Teaching Summer Institute. (May 19, 2021 - May 28, 2021). Co-designed and co-led eight-day virtual workshop for Course Redesign Teams in Math (MATH 2472), Biochemistry (CHEM 3375), and Biology (BIO 1330 & 1331), along with undergraduate Learning Assistants.
- STEM Communities "Department Instructional Assessment" meetings (for faculty teams, by application):
    - Chemistry team (CHEM 1341). (November 5, 2021 – February 25, 2022).
    - Physics / Biology team (PHYS 1335 & 1345 – new courses). (November 9, 2021 – February 24, 2022).
    - Math team (MATH 2472). (December 4, 2020 - May 4, 2021).
    - Biochemistry team (CHEM 3375). (November 13, 2020 - February 12, 2021).
    - Biology team (BIO 1330 & 1331). (November 13, 2020 – March 30, 2021).
- Professional development sessions (open to all faculty):
    - Workshop series: (Re)framing STEM Instruction at an HSI
        - (Re)discovering Student Strengths Through Metacognition (October 6, 2022)
        - (Re)constructing Inclusive Classrooms by Learning from Student Organizations (October 20, 2022)
            - Includes panel of STEM student-leaders

        - (Re)visiting First-Generation Students' Experiences in STEM (November 10, 2022)
            - Includes panel of first-generation STEM students and faculty
    - Workshop series: Becoming More Culturally Responsive (Spring 2022)
        - Engaged Pedagogy for Culturally Responsive Teaching. (February 17, 2022).
        - Identity and its Influence on Learning. (March 24, 2022).
        - Ouch, Words Can Really Hurt! Taking the Power from Stereotypes & Microaggressions. (April 21, 2022).
    - Workshop series: Becoming More Culturally Responsive (Fall 2021)
        - Traditional, Progressive, & Culturally Responsive Teaching. (September 16, 2021).
        - Identity and its Influence on Learning. (October 21, 2021).
        - Ouch, Words Can Really Hurt! Taking the Power from Stereotypes & Microaggressions. (November 18, 2021).
    - Community Support Session: Celebrating the End of Spring Semester and Planning What's Next. (April 29, 2021).
    - Workshop series: Becoming More Culturally Responsive
        - Confronting Racism in Our STEM Fields. (February 11, 2021).
        - Understanding First-Generation LatinX Student Experiences. (March 11, 2021).
        - Using Case Studies in STEM Teaching. (April 8, 2021).
    - Workshop series: Building Peer Mentorship
        - Introduction to Peer Classroom Observation Strategies (March 4, 2021).
        - Using a Classroom Observation Protocol (March 25, 2021).
        - Transforming Our Teaching Using Classroom Observations (April 15, 2021).
    - Community Support Session: How Do We Support One Another This Spring Semester? (January 28, 2021).
    - Coffee Hour: Sharing Strategies for Engaging Students Online. (January 13, 2021).
    - Workshop series: Improving Our Teaching and Normalizing Feedback. (October 29, 2020 - November 23, 2020). Additional Comments: Supported my postdoctoral research advisee in preparing and leading two iterations of this four-part event.
    - Community Support Session. (October 8, 2020). Additional Comments: Co-prepared and co-led this event.
    - Workshop: Leveraging Learners' Strengths in Our Instruction. (September 14, 2020 - September 21, 2020). Additional Comments: Supported my postdoctoral research advisee in preparing and leading this two-part event.
    - Workshop: First Day Hacks: Strategies to Get to Know Our Students Better. (August 11, 2020 - August 31, 2020). Additional Comments: Supported my postdoctoral research advisee in preparing and leading this two-part event.
    - Community Support Session: Beating the Back to School Blues. (August 18, 2020). Additional Comments: Supported my postdoctoral research advisee in preparing and leading this event.
    - Workshop: Supporting Black Students in STEM During an Era of Police Violence and Social Uprising. (June 10, 2020). Additional Comments: Co-planned and co-led this emergent event in alignment with the national #shutdownSTEM movement.
    - STEM Community Support Sessions. (April 8, 2020 - April 16, 2020). Additional Comments: Co-led two community support sessions to help CoSE faculty in the transition to remote instruction during the pandemic.
    - STEM Communities Journal Club: The Science Identity of College Students: Exploring the Intersection of Gender, Race, and Ethnicity. (March 5, 2020).
    - STEM Communities Journal Club: Effective Use of Peer Instruction in Large Classes. (February 28, 2020).

- Summer 2020 STEM Teaching Workshop. (May 18, 2020 - May 22, 2020). Additional Comments: Co-designed and co-led a week-long virtual STEM teaching workshop for 45 CoSE faculty.
- Information sessions for faculty interested in course re-design process:
    - Chart your Course Redesign Journey (March 12 & March 23, 2021). Additional comments: Helped design and lead two events for teams already engaged in Department Instructional Assessments to apply for course re-design support.
    - STEM Communities Project: Build Your Teaching Dream Team. (September 24, 2020 - September 28, 2020). Additional Comments: Helped to lead two events about how to form teams through the STEM Communities project.
    - STEM Communities Project: Community Input Sessions. (October 30, 2019 - November 22, 2019).

Summer Undergraduate Research Experience (S.U.R.E.) Mentor (Summer 2018, Summer 2021)
Participate in S.U.R.E. mentor training. Mentor undergraduate student(s) in individual research projects, training for research with human subjects, presenting research and writing up research results for publication, setting professional goals, career plans, and personal development.

Texas State STEM Rising Stars Project Co-PI (January 2015-June 2019)
Work with colleagues in College of Science and Engineering and College of Education to increase the second-year STEM undergraduate student retention rate, both overall and for specific underrepresented groups, by organizing and implementing a multi-faceted program of activities including Faculty Summer Institutes and expanded Learning Assistant program.

H-LSAMP Mentor (September 2017-May 2019)
Meet monthly with undergraduate H-LSAMP scholar to discuss academics, career plans, graduate school, research opportunities, and personal development.

STEM Education committee (informal) (2012-2013)
Work with Dean Stephen Seidman and colleagues from other departments in the College of Science and Engineering to share ideas on improving recruiting and retention in STEM majors and STEM preparation of future teachers; collaborate on a planned NSF STEP proposal for January 2014.

3. Department:

Director, Physics Learning Assistant Program (Fall 2012-present)
Implement Learning Assistant (LA) program for introductory calculus-based sequence: Physics 1430 (all sections as of Fall 2012); Physics 2425 (beginning with one section in Spring 2013); Physics 2435 (beginning Fall 2013). Recruit and hire LAs (with H. Close and D. Donnelly); organize and direct weekly tutorial preparation sessions (with 30-35 LAs). Schedule Physics Help Center, staffed by LAs for students in LA-served courses; secure external funding to support Physics Help Center staffing; collaborate with and support instructors in LA-served courses. Design and teach Physics 3210: Physics Cognition and Pedagogy, required course for first-time LAs. Support development of community among LAs and other undergraduate physics students through LA program structures, mentoring, and informal social gatherings.

Advisor, Society for Women in Physics student club (December 2014-present)
Advising undergraduate and graduate women physics students in formation of a new student group for women in physics; providing support for development of student community and identity. Organize participation in annual APS Conferences for Undergraduate Women in Physics (CUWiP).

Instructional Mentor for Erika Marentes (Fall 2023-Spring 2024)
Meet one-on-one biweekly to discuss instruction, e.g., establishing productive classroom culture, deciding on pacing of topics, managing student groups, interpreting assessments. Meet weekly in

planning meetings with instructional team for PHYS 1365: Physics for Educators, a studio-style course for future elementary teachers – Ms. Marentes, two other lecturers, GRAs, and undergraduate near-peer assistants. Communicate regularly via Slack Workspace for as-needed check-ins.

Instructional Mentor for Egla Ochoa-Madrid (Fall 2022-Spring 2023)
Meet weekly to discuss instruction in PHYS 1365, new studio-style course for future elementary teachers – establishing productive classroom culture, selecting instructional methods, pacing of topics, designing and interpreting assessments, connecting class activities to teaching careers, managing difficult students. Joined and contributed to weekly planning meetings with Ms. Madrid, a graduate instructional assistant, and undergraduate near-peer assistants (Spring 2023).

Mentor, APS National Mentoring Community (Fall 2017-Fall 2020)
Meet weekly with underrepresented-minority undergraduate physics major mentees to discuss academics, career plans, graduate school, research opportunities, and personal development; participate in APS Mentoring Program, share online resources. Mentees: Xandria Quichocho, Oct. 2017-Aug. 2020; Rose Najar, Jan. 2019-May 2021

Research mentor for Dr. Alice Olmstead (Aug. 2018-May 2020)
Meet weekly or biweekly with new tenure-line assistant professor to discuss research, institutional structures, and the tenure process at TXST.

Faculty Awards Nominating Committee (Fall 2018-Spring 2019)
Work with other recent award recipients to solicit nominations for faculty awards; recommend slate of nominations to department chair.

Search Committee, Astrophysics tenure-track faculty position (September 2017-March 2018)

Course Coordinator / co-coordinator, PHYS 1430: Mechanics (August 2015-May 2019)
Co-coordinator August 2015-May 2018; Coordinator August 2018-present. Meet weekly with all 1430 instructors to discuss instruction and pacing, coordinate with labs, and mentor new instructors. Lead preparation of 1430 Learning Assistants.

Co-PI, PhysTEC Comprehensive Project at Texas State (Fall 2015-Spring 2018)
Work with TXST PhysTEC team and Teachers In Residence to plan monthly Physics Teacher Network Events. Recruit and support PhysTEC LAs in exploring teaching as a profession. Promote TXST as a national leader in physics teacher education. Work with colleagues in Physics and Curriculum & Instruction to create new introductory physics courses for future K-8 teachers.

General Education Assessment assistant coordinator (August 2015-May 2018)
Assist with outcomes assessment methods revision.

Physics Undergraduate Majors Program Committee (September 2014-September 2016) - member
Work with other undergraduate faculty to imagine and enact substantial, strategic, research-based change to physics undergraduate major programs for the benefit of current and future students.

Instructional Mentor for Amanda Gregory (lecturer) (August 2015-August 2016*)*
Meet weekly (or more) to discuss instruction in PHYS 1430 – establishing productive classroom culture, selecting instructional methods, pacing of topics, designing and interpreting assessments, managing difficult students.

Physics Scholarship Committee (February 2014-December 2016) – member
Recruit and nominate candidates for scholarships available to physics undergraduate and graduate students.

Search committee, physics lecturer (Spring 2014) – member
Recruit and select candidates for lecturer position, with focus on PER-knowledgeable candidates with experience in research-based instructional methods. Update departmental scholarship website.

Elementary Physics Committee (September 2012-June 2013)
Work with colleagues who teach in the elementary physics introductory sequence to examine course alignment with goals of the programs it serves, consider revisions to the course curriculum.

Introductory Physics Curriculum Committee (September 2011-September 2014)
Work with colleagues who teach in the calculus-based introductory physics sequence to examine course data and consider revisions to the course sequence.

B. PROFESSIONAL:

National Science Foundation grant proposal review panelist (2025)

Peer reviewer for scholarly journals (2011-present)
Review research articles for *Physical Review-Physics Education Research, NSTA Journal of College Science Teaching* (Research and Teaching Review Board), *American Journal of Physics, International Journal of STEM Education, Journal of Research in Science Teaching, PLOS ONE, The Physics Teacher,* and *Physics Education Research Conference Proceedings.*

National Learning Assistant Alliance "L-Agent": International Conference Organizer, National Research Symposium Organizer, Regional Workshop Team Leader (2013-present)
Work with national team of Learning Assistant Program experts ("L-Agents") to facilitate workshops, disseminate information and materials, and assist with adoption of this highly effective model for STEM instructional transformation (http://www.learningassistantalliance.org/). Co-design and co-facilitate local, regional, and national / international workshops and conferences, including annual three-day international conference and one-day international research symposium:

- Co-developer and co-facilitator of three workshops in Learning Assistant Alliance (LAA) e-Series: Faculty Strand. With two colleagues from the LAA, design two 75-minute workshops and deliver via Zoom to national audience. Developed Fall 2022; delivered Spring 2023-present. With four additional colleagues from the LAA, design a 3.5-hour integrated workshop incorporating material from three 75-minute workshops (Essential Elements of the LA Model and the two I co-developed). With other LAA workshop facilitators, customize integrated workshop for a single-institution faculty workshop.
    - Transforming Your Course with LAs. (M. Markum, B. McIntosh, E. Close; March 27, 2023; May 12, 2023; August 9, 2023; August 21, 2023; September 12, 2023; January 9, 2024; February 20, 2024; May 6, 2024; September 10, 2024; May 9, 2025)
    - What is the Weekly Prep Session? (M. Markum, B. McIntosh, E. Close; April 21, 2023; May 12, 2023; August 9, 2023; August 21, 2023; September 12, 2023; January 9, 2024; February 22, 2024; May 6, 2024; August 20, 2024; December 17, 2024; January 7, 2025; May 9, 2025)
    - Essential Elements of the LA Model (J. Avena, E. Close; December 8, 2025)
    - Integrated Session for Faculty (M. Markum, J. Avena, E. Close, B. Feldman; May 21, 2025; December 12, 2025)
    - Institutional Integrated Workshop for Faculty (J. Avena, E. Close; July 22, 2025)
- Workshop session developer and facilitator, 2025 International Learning Assistant Conference (November 7-9, 2025, Boulder, CO)
    - Making the Case to Administrators (E. Close, M. Sabella, D. Quick)
- Workshop session developer and facilitator, 2024 International Learning Assistant Conference (October 18-21, 2024, Boulder, CO)
    - Pedagogy Lesson: STEM Identity and Intersectionality
- Co-facilitator, developer for two workshops, 2023 International Learning Assistant Conference (October 26-28, 2023, Boulder, CO)
    - What Is The Weekly Prep Session? (E. Close, T. Clements, M. Parizi-Robinson)

    - Writing LA-Related Grants: Fishbowl, Brainstorming, & Collaborating (E. Close, M. Moore)
- Conference organizer and facilitator, 2022 Nordic Learning Assistant Conference (Oslo, Norway, June 2022): With three colleagues from the Learning Assistant Alliance, design and implement two-day workshop introducing the Learning Assistant model to faculty from Norway, Sweden, and Finland. (With V. Otero, L. Langdon, & B. McIntosh.)
    - Day 1 sessions: Essential Elements of the LA Model; Active Learning, Part I; Active Learning, Part II; What's so Active about Active Learning? Planning Your Use of Active Learning with LAs
    - Day 2 sessions: Weekly Preparation Sessions with LAs; Pedagogical Support for LAs; LA Model in the University Context: Supporting Faculty; Dealing with Specific Challenges: Round Tables; Planning Your Next Steps
- Co-facilitator, developer for two workshops, 2021 International Learning Assistant Conference (Virtual conference)
    - STEM Equity Research and Resources (M. Shultz, E. Close, B. Van Dusen, J. Nissen, R. Talbot)
    - Transforming Your Course with LAs (E. Close, A. Olmstead, C. Ramey, I. Herrera, F. Lopez)
- Workshop developer, 2020 International Learning Assistant Conference (Virtual conference)
    - What Is the LA Pedagogy Course? (Asynchronous workshop) (E. Close)
- Lead organizer (four-person leadership team), 2020 International Learning Assistant Research Symposium (Virtual conference), November 2020
- Co-organizer (four-person team), three-hour post-conference workshop, 2020 Physics Teacher Education Coalition (PhysTEC) National Conference (Denver, CO), February 2020
    - Essential Elements for Setting Up Your Learning Assistant Program (V. Otero, E. Close, B. Evans, L. Langdon)
- Core Facilitator, lead developer for five workshops, 2019 International Learning Assistant Conference (Boulder, CO)
    - LA Pedagogy 1 - Logistics and Getting Started (B. Van Dusen, E. Close, and A. Escuadro)
    - Weekly Prep 2 - LA Faculty meeting structures and activities (M. Sabella, E. Close, S. Hendrickson)
    - Curriculum Materials to Use with LAs in Physics (E. Close)
    - Research IIa: Creating Research Questions and Designing Studies (E. Close, J. Nissen, R. Talbot)
    - An Introduction to the Periscope Online Resource for Pedagogy Courses (E. Close)
- Co-organizer (four-person leadership team), 2019 (inaugural) International Learning Assistant Research Symposium (Boulder, CO)
- Co-organizer (five-person leadership team), Conference Strand lead, developer & facilitator for four workshop sessions, 2018 International Learning Assistant Conference (Boulder, CO)
    - Pedagogy I: Logistics & Getting Started (B. Van Dusen, E. Close)
    - Weekly Preparation Sessions II: Refining Goals and Supporting Faculty and LAs (M. Sabella, E. Close, F. Davenport)
    - Research II: Creating Research Questions and Designing Studies (J. Nissen, R. Talbot, E. Close)
    - Program & Professional Development Resources: Periscope Overview (E. Close)
- Core Facilitator, lead developer for workshops, 2017 International Learning Assistant Conference (Boulder, CO)
    - Planning LA Use - Auxiliary Uses: Help Center (E. Close)
    - Framing Instructional Change for Students (E. Close, L. Hartley)

    - Weekly Content Preparation Sessions II: Refining Goals and Supporting Faculty and LAs (M. Sabella, E. Close, S. Hendrickson, F. Davenport)
    - Pedagogy Resources: Interview Project (E. Close, M. Emenike)
    - Pedagogy Course I.B: Planning Your Pedagogy Course (E. Close, K. Gray, A. Escuadro)
    - Program & Professional Development Resources: Periscope Overview (E. Close)
- Co-organizer (three-person leadership team), session facilitator, 2017 Southeast Learning Assistant Workshop (Miami, FL)
- Co-organizer (four-person leadership team), pedagogy conference strand lead, 2016 International Learning Assistant Conference (Boulder, CO)
- Co-organizer & session developer (lead developer for two sessions), 2015 International Learning Assistant Workshop (Boulder, CO)
- Lead organizer, 2014 Southwest Regional Learning Assistant Workshop (San Marcos, TX)
- Conference developer / organizer (10-person leadership team), 2013 National Learning Assistant Workshop (Boulder, CO)

Senior PhysTEC Advisor (2019-2021)
Mentor PhysTEC Fellows at University of Texas Rio Grande Valley in designing and implementing a strategic plan to build their physics teacher preparation program; report progress to PhysTEC staff twice yearly.

National Learning Assistant Alliance Leadership Council – Member-at-large (Sept. 2017-Dec. 2020)
Inaugural member of ten-member governance council responsible for articulating the direction of the LA Alliance; recruiting International LA Conference and workshop leaders; reviewing and revising existing Bylaws; determining and finalizing membership dues and the mechanisms for collecting dues; and soliciting feedback and ideas from LAA membership. Meet monthly (video-meetings) either as part of the full committee or as part of sub-committees.

APS Forum on Education Executive Committee – APS/AAPT Member at Large (Jan. 2018-Dec. 2020)

APS Topical Group on Physics Education Research Nominating Committee (2017, 2018)
Member. Work with two other committee members to select a diverse and representative slate of candidates to nominate for Topical Group leadership elections.

Planning and Advisory Group, Pilgrim University, Soroti, Uganda (2012-2014)
Serve as physics teacher preparation expert for planning a new university in the Soroti district of Uganda with a focus on sustainable technology and STEM education & teacher preparation. A project of Pilgrim Africa (http://www.pilgrimafrica.org/).

American Association of Physics Teachers Committee on Women in Physics (2008-2011)
Member 2008-2011; Vice Chair 2009-2010; Chair 2010-2011

Peer Reviewer for Teacher U, New York, NY (2010)
Serve as content expert for science teacher preparation on site visit team assessing the readiness of Teacher U to become an independent Institution of Higher Education offering initial teacher certification in middle-level science.

Standard Setting Committee, Washington Educator Skills Test for Secondary Science Endorsement (October 2008)
Through Washington Professional Educators Standards Board. Participated in standard-setting for state secondary science endorsement test.

Content Advisory Committee, Washington Educator Skills Test for Secondary Science Endorsement (November 2007)
Through Washington Professional Educators Standards Board. Reviewed, revised, and contributed new questions for state secondary science endorsement test.

Committee to Revise the Washington State Physics Endorsement Competencies (2007)
Through the Washington Office of Superintendent of Public Instruction. Reviewed and revised state physics endorsement competencies, including addition of a new section on understanding of secondary student ideas in physics as required content knowledge for physics teachers.

C. COMMUNITY:

Workshops for teachers and teacher educators (2006-present): see Workshops section of CV (under Section III. Scholarly/Creative)

Presenter at Science Outreach Events (ongoing / occasional)
Present science activities and demonstrations at K-12 schools; recruit TXST students to facilitate (Learning Assistants and members of the Society of Women in Physics, Society of Physics Students, Astronomy Club). E.g., Crockett Elementary Science Extravaganza (March 2020); Crockett Elementary 3rd grade field trip to TXST Physics (November 2018); Science Day at Mendez Elementary, San Marcos (February 2018); Science Night at Miller Middle School, San Marcos (January 2018).

Elementary Inquiry-Based Science Collaboration (October 2011-2016)
Collaborate with San Marcos CISD elementary teachers, coaches, and principals to support science instruction and professional development: Work with Mrs. Sara Torres, elementary enrichment teacher at Travis Elementary School, to develop and implement hands-on, inquiry-based physics lessons for fifth-grade students in the Supernova program (gifted & talented / talent-pool students); develop age-appropriate units of study on Electric Circuits and Properties of Matter. Support Mrs. Torres and colleagues in exploring opportunities for inquiry-based science lessons in all grade levels and for all students. Develop and assist with supplies & instruction of two lessons for "Science Camp," science content review for all Travis 5th grade students prior to STARR exam. Work with Mrs. Torres and Elementary Literacy Coach Mrs. Lucy Wilder to develop and co-teach workshops for all Travis Elementary teachers on integration of inquiry-based science and expository writing instruction. Bring Texas State students enrolled in honors science course to Travis Elementary to teach inquiry-based science lessons and to support teachers. Collaborate with Mrs. Maria Thompson, SMCISD Elementary Science Coach, to support inquiry-based, hands-on science instruction throughout the district. Facilitate collaboration between the TXST Society of Physics Students and local elementary schools for science club activities and outreach events.

Science Fair Judge (December 2011)
Collaborated with two other Texas State faculty members to interview fifth-graders at the Travis Elementary School Science Fair about their science projects; selected nine students to continue on to the regional science fair.

D. SERVICE HONORS AND AWARDS:

Program to Watch Award for STEM Communities Learning Assistant Program, Excelencia in Education, 2024

Excelencia in Education is a national organization dedicated to advancing Latino student success in higher education. *Excelencia* "recognizes innovative, up-and-coming programs that have already made a positive impact on the success of their Latino students and are growing evidence of effectiveness as Programs to Watch" (https://www.edexcelencia.org/what-works/examples-excelencia/programs-watch).

College Achievement Award for Excellence in Service, College of Science and Engineering, Texas State University, 2024

Presidential Distinction Award for Excellence in Service, College of Science and Engineering, Texas State University, 2022

PhysTEC 5+ Club Award, 2021
Awarded to institutions that graduate 5 or more certified K-12 physics teacher during the 2020-2021 academic year – these institutions are in the 99th percentile of all US colleges and universities for physics teacher production. One of nine institutions total in 2021. https://phystec.org/awards/five-plus-club-awardees/

PhysTEC 5+ Club Award, 2020
Awarded to institutions that graduate 5 or more certified K-12 physics teacher during the 2019-2020 academic year -- these institutions are in the 99th percentile of all US colleges and universities for physics teacher production. One of nine institutions total in 2020. https://phystec.org/awards/five-plus-club-awardees/

Presidential Distinction Award for Excellence in Service, College of Science and Engineering, Texas State University, 2018

Presidential Distinction Award for Excellence in Service, College of Science and Engineering, Texas State University, 2015

Presidential Distinction Award for Excellence in Service, College of Science and Engineering, Texas State University, 2014

E. SERVICE GRANTS AND CONTRACTS:

1. Funded External Service Grants and Contracts (See also Teaching section of CV):

Co-Principal Investigator, *PhysTEC Comprehensive Site at Texas State University: An Inclusive Physics Education Community.* H. Close, PI; E. Close, D. Donnelly, L. Huling, J. Mount, project team; $304K (08/2015-07/2018). (Program development.)

Research component: characterizing physics identity development through the Learning Assistant experience. **Service component**: Recruit, prepare, and mentor diverse K-12 physics teachers; develop a Teacher Network to connect and support prospective physics teachers, local inservice physics teachers, and Texas State physics faculty; create special physics courses for elementary teacher candidates.

Principal Investigator, *Meson Physics Camp: STEM Engagement for Middle Grades, Leadership Development for High School & Texas State Students* (Halliburton Foundation Grant 2549). E. Close, PI; $20K (09/2015-08/2016). (Teaching and service.)

Support Texas State Society of Physics Students in implementing a summer physics camp for middle school students for the second time: creating and testing engaging hands-on curriculum, recruiting and enrolling 80-100 middle school students from San Marcos CISD, recruiting and mentoring high school physics students as junior camp counselors, and coordinating logistics with San Marcos CISD and Mathworks Junior Math Camps.

Principal Investigator, *Meson Physics Camp: STEM Engagement for Middle Grades, Leadership Development for High School & Texas State Students* (Halliburton Foundation Grant 2393). E. Close, PI; D. Donnelly, Co-PI; $11K (09/2014-08/2015). (Teaching and service.)

Support Texas State Society of Physics Students in developing and implementing a summer physics camp for middle school students: creating and testing engaging hands-on curriculum, recruiting and enrolling 60-80 middle school students from San Marcos CISD, recruiting and mentoring HS physics students as junior camp counselors, and coordinating logistics with San Marcos CISD and Mathworks Junior Math Camps.

Co-Principal Investigator, *Development of Discipline Centered National Model for STEM Teacher Preparation* (NSF grant DUE-0934743). J. Lindberg, PI; E. Close, F. Kline, R. O'Leary, Co-PIs; $75K (07/2009-06/2010). (Program development.)

Collaborate with colleagues in the sciences and the School of Education to design a new master's program for STEM professionals becoming secondary teachers.

2. Submitted, but not Funded, External Service Grants and Contracts: N/A

3. Funded Internal Service Grants and Contracts: N/A

4. Submitted, but not Funded, Internal Service Grants and Contracts: N/A