Helen Douglass

Curriculum Vitae

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Education

Ph.D. Education and Human Development (Science Education)
University of Colorado Denver
Dissertation Title: *Making the Invisible Visible: Providing Context for Women's STEM Experiences Through Visual Representation*

Elementary Education Professional Teaching License with Secondary Science Education Endorsement
Colorado Department of Education (valid through 2032)

Professional Teacher Licensure Program
Regis University

Master of Arts in Counseling
Colorado Christian University

Registered Dietitian
University of New Mexico
Bachelor of Science in Nutrition, Biology/Health Education
University of New Mexico

Research Interests

Integrating informal and formal science, STEM, and maker experiences and spaces
Equitable and inclusive science, STEM and maker teaching and learning
Mixed methods research including the use of visual methodologies and design frameworks
Holistic Mentoring Ecosystems

Current Position

Associate Professor, Education, Science and STEM focus (2024-Present)
Department of Education, The University of Tulsa, Tulsa, OK

Assistant Professor, Education, Science and STEM focus (2018-2024)
Department of Education, The University of Tulsa, Tulsa, OK

Publications

Douglass, H., (In Review). STEM education research incubator (SERI): Developing a holistic mentoring ecosystem. *The Chronical of Mentoring and Coaching*

Douglass, H., Cain, L., & Meadows, J. (In Press). Thunder Fellows: An origin story centering equity-oriented positive youth development. In E. Van Steenis & D. K. DiGiacomo (Eds.), *Equity-oriented Positive Youth Development.* Information Age Publishing.

Douglass, H. (2023). Makerspaces and making data: Learning from pre-service teachers' STEM experiences in a community makerspace. *Education Sciences, 13*(6), 538, DOI org/10.3390/educsci13060538.

Douglass, H., & Darden, I. (2023). Design thinking and mini-maker kits in science education: Creative problem solving in transitions to online and hybrid learning. In F. Allaire & J. Killham (Eds.) *Teaching and Learning Online: Science for Secondary Grade Levels* (pp. 197-208). Information Age Publishing.

Douglass, H. (2023). Integrated and innovative STEM education: The development of a STEM education minor. In S. Kaya & E. Peters (Eds.) *Enhancing entrepreneurial mindsets through STEM education* (pp. 249-266*)*. Springer.

Douglass, H., & Verma, G. (2023). We are now a STEM school with a summer STEM program? How do we do THAT? In D. Tippins, S. Jeong & L. Bryan (Eds.). *Navigating the challenges of elementary science teaching and learning: Using case-based pedagogy to understand dilemmas of practice*. Springer Nature.

Douglass, H., & LoPresti, P. (2022). Research practice partnerships: Faculty, teachers and secondary students in informal engineering education. Outreach Extended Abstract. *Proceedings of the of the Annual Meeting of the Midwest Regional Chapter of the American Society for Engineering Education Midwest Region Conference*, Fayetteville, AR.

Douglass, H., & Verma, G. (2021). Examining STEM teaching at the intersection of informal and formal spaces: Exploring science pre-service elementary teacher preparation. *Journal of Science Teacher Education*, 33(3), 247-261, DOI: 10.1080/1046560X.2021.1911456.

Verma, G. & Douglass, H. (2021). Intellectual virtues, lived experiences and engaged science learning. *Journal of Science Teacher Education*, *32*(7), 842-846, DOI: 10.1080/1046560X.2021.1932316.

Douglass, H. (2021). Review of the book *STEM-rich maker learning: Designing for equity with youth of color* by A. C. Barton & E. Tan]. *Curriculum and Teaching Dialogue, 23*(1, 2).

Leonard, J., Chamberlin, S.A., Bailey, E., Verma, G., & Douglass, H. (2019). Broadening millennials' participation in STEM and the teaching professions through culturally relevant, place-based, informal science internships. In G. Prime (Ed.). *Centering Race in the STEM Education of African American K-12 Learners* (pp. 95-128). Peter Lang Publishing.

Verma, G., Puvirajah, A, & Douglass, H. (2018). Examining the mediation of power in informal environments: Considerations and constraints. In K. Tobin & L. Bryan (Eds.) *Critical Issues and Bold Visions for Science Education: The Road Ahead* (pp 187-202). Sense Publishers.

Viesca, K.M., Mahon, E., Carson, C.D. & The eCALLMS Team (2017). Online professional learning for science teachers of multilingual learners. In A.W. Oliveira and M.H. Weinburgh (Eds.), *Science Teacher Preparation in Content-based Second Language Acquisition* (pp 117-135). Springer.

Douglass, H**.** (2016). No, David! But, yes, design! Kindergarten students are introduced to a design way of thinking. *Science and Children, 53*(9), 69-75.

Leonard, J., Verma, G., & Douglass, H. (2013). Broadening STEM opportunities through STEM Education. In M. Martinez and A.C. Superfine (Eds.), *Proceedings of the 35th Annual Meeting of the North American Chapter of the International Group for Psychology of Mathematics Education* (pp 485-488). Chicago, IL.

Funded Research (2012-Present)

Building Capacity in STEM Education Research (BCSER): Empowering Informal STEM Education – Development and Investigation of Science Fair Engagement Strategies (Advisory Board Chair, Primary Mentor)
The primary focus of this project is contained within the core area of 'Broadening Participation in STEM Fields' with some overlap with the 'STEM Learning and Learning Environments. This project will seek to expand the participation and impact within the specific educational context of the informal STEM learning opportunity of the Tulsa Regional Science Fair (TRSF) to a broader set of students that reside within the area served by TRSF. The pilot research project proposed here would be to carry out and test the effectiveness of two types of outreach events to increase and diversify participation in TRSF. National Science Foundation $139,038.

Just(ice) Math: Exploring Racialized Mathematics and Possible Solutions (PI)
National design thinking research challenge on problems that disproportionally impact the African American community. Student research team of seven undergraduate students from across disciplines including English, Petroleum Engineering, Applied Mathematics, Art, Computer Simulation and Gaming and Mechanical Engineering researched mathematics and African American experiences. Student presentation at Black Excellence Alliance sponsored inaugural induction ceremony of Black Inventors and Entrepreneurship Hall of Fame, in conjunction with Tulsa Race Massacre Centennial Commemoration. Faculty Development Summer Fellowship Award, 2021, $7,120.

Machine Learning for Real-time Earthquake Detection and Early Warning (Curriculum Specialist, Jingyi Chen, PI)
Interdisciplinary research focusing on three primary problems-denoising seismograph data, locating earthquakes and testing analytical methods. Next steps include working with real data sets and mixed sources of added and removed noise, developing a predictive architecture based on deep learning and predictive models and comparing newly developed models to traditional models used for prediction. The technical aspects of the project will be synthesized and developed into place-based case narratives to address k-16 student interest and participation in integrated geoscience, physics and machine learning experiences. The University of Tulsa Interdisciplinary Project Grant Program, Level 3, 2020-2023, $20,000.

Summer Engineering Academy Grades 8-12 (Curriculum Specialist)
Continuation of previous summer academies in collaboration with engineering faculty, local teachers and former academy students. Focus on the integration of electrical and mechanical engineering with emphasis on engineering design, engineering as a profession and the design and applications of autonomous vehicles, including drones. Oklahoma State Regents for Higher Education, 2020/2021, $12,000.

Native American Teacher Conference and Concurrent STEM Competition (Co-PI)
As part of a collaboration with Oklahoma State University, this teacher conference and student competition seeks to meet the goals of the Established Program to Stimulate Competitive Research (EPSCoR) specifically by establishing STEM professional development pathways for teachers and to broaden participation of diverse groups and institutions in STEM. Oklahoma State University, National Science Foundation, 2020/2021 $80,000. Additional five-year funding, 2020-2025 $450,000.

Collaborative Math Teaching and Learning (PI)
Two-year project focusing on the collaborative teaching and learning of high-school mathematics with underrepresented students including curriculum development, assessment and pedagogical practices. Successful completion of course leads to enrollment in college algebra at a community college. Faculty Development Summer Fellowship, 2020, $ 6,000.

Maker Education with Pre- and In-Service Teachers (PI)
Ongoing Research and Practice Partnership (RPP) with a local elementary school with Title-1 designation. Pre-service teachers are placed in classrooms for science and mathematics methods courses in addition to informal experiences in makerspaces and maker environments including design thinking, data engagement and lived experiences of participants and their students.
Faculty Development Summer Fellowship, 2019, $6,000

Teach by design: Recruiting and retaining diverse future teachers (PI)
Conduct surveys and organize outreach to understand and improve teacher recruitment and retention. Oklahoma State Regents for Higher Education. $10,000 reduced to $4,000 due to pandemic/online restructuring.

Creating Inclusive Opportunities for Elementary-aged Multilingual Learners (PI, Geeta Verma)
Three-year project focused on in-service science teachers' professional development (PD) to create inclusive science learning environments for multilingual learners. PD included inclusive instructional and pedagogical practices in the science classroom and opening new spaces of learning through optional take home projects. Responsibilities include data analysis, presentation and paper preparation.

D2C2: Dinosaurs, Denver and Climate Change (Co-PIs Geeta Verma, Jacqueline Leonard)
An eco-opportunity project to assist elementary aged underrepresented minorities (URM) to learn about careers related to geoscience. Students worked within their own community settings, local field trip locations, and with near-peer mentors (high school and college mentors). Responsibilities included data collection and analysis and training and mentoring high school and college learning assistants. Funded by the National Science Foundation.

External Grants Under Review
Education Core Research (ECR): Making the Invisible Visible: Exploring the Intersection of Agency, Identity and Lived Experience as Contextual Critical Junctures. (PI) In this "Broadening Participation in STEM Fields" category of ECR, diverse STEM undergraduate students will use photo-elicitation to describe their STEM experiences. The relationships between and among agency, identity and lived experiences, along with those of STEM outreach programs will be investigated for unintentional othering based on perceived deficits. National Science Foundation, $457,854.

Innovative Practica and Field Experiences for Elementary Pre-service Teachers (PI)
Collaboration with six universities and Educational Testing Service for submission of a conference grant to the National Science Foundation. Upon review, NSF program officer suggested outcomes of a sponsored monograph regarding the need for more research into these phenomena, a special edition journal editorship and a full grant submission. National Science Foundation, $200,000.

Oklahoma Louis Stokes Alliance for Minority Participation (LSAMP) (co PI)
Expansion of the Oklahoma State University LSAMP to include support in academics, technology, community building and mentoring support for 12 doctoral students in science and engineering at The University of Tulsa. National Science Foundation $1,171,832.

Faculty Early Career Development Program (CAREER). *(Educational Consultant/Mentor)* CAREER: Probing Specific Ion Effects in Complex Aqueous Solutions at High Ionic Strengths" submitted by Dr. Javen Weston, will include data collection and research on informal and formal science identities, efficacy and

experience. Will collaborate on data collection, analysis and communication in research publications and presentations. National Science Foundation, $544,276.

Research Experiences for Undergraduates in Materials and Energy (Program Evaluator)
Undergraduate research experiences conducted by Dr. Laura Ford to include STEM education research collaboration. National Science Foundation $150,00

Unfunded Proposals
Cybersecurity TU Undergraduate Scholarships (CySTEM) (Co-PI)
The project will provide a cohort model for cybersecurity students. Within the cohort, there will be opportunities for student success coaching, faculty mentoring, intra and extracurricular experiences, including near-peer relationships, and access to alumni and friends of the university who are connected to the cybersecurity industry. By providing a seamless path of experiences that center the student and provide opportunities for those working with them to learn how to increase belonging, reduce othering, and remove barriers students with unmet needs often face, we will deliver the necessary context for students to be retained in the cybersecurity degree program as well as be prepared to enter the workforce as cybersecurity professionals. National Science Foundation $1,999,917

Halliburton STEM Workforce/Education Grant (PI)
This proposed project will developing an undergraduate STEM Education research incubator to provide students a variety of opportunities to develop their research skills and ideas. In addition, it will provide for these students to pilot their projects by sourcing STEM content for local teachers and their professional development. Halliburton $15,000

Research and Practice Partnership (RPP) (PI)
Collaboration with a local elementary school with Title-1 designation. Pre-service teachers are placed in classrooms for science and mathematics methods courses and also learn to teach in a makerspace environment using student talk, disciplinary engagement and communities of practice (Acts of Authentication) to inform planning and instruction. National Science Foundation Discovery Research K-12, $250,000

Community Making and Teacher Professional Development (PI)
Collaboration with Fab Lab Tulsa and Ellen Ochoa Elementary to develop structures and procedures for partnership experiences and to prepare teachers and families for informal experiences with design thinking and maker materials. Spencer Foundation, $335,492.00

Refereed Research and Scholarly Presentations
Douglass, H., (April, 2025). *STEM Education Research Incubator (SERI): Developing a Holistic Mentoring Ecosystem.* Poster Session, Rocky Mountain Educational Research Association (RMERA) Conference, Claremore, OK.

Douglass, H., Herring, E. (November, 2024) *Education Majors and Minors as Researchers: Inspiring Educators for a Stronger Profession.* Traditional Presentation/Interactive Session, Oklahoma Association of Colleges for Teacher Education/Oklahoma Educational Quality and Accountability (OACTE/OEQA) Annual Conference, Stillwater, OK.

Douglass, H. (November 2024) *STEM Education Research Incubator: Innovation for Inclusion and Expansion in Undergraduate STEM Research.* Innovation/Ideation Session, American Association for Colleges and Universities (AAC & U) Transforming STEM Higher Education Conference. Washington, D.C.

Douglass, H., Meadows, J., & Cain, L. (April, 2024) *Thunder Fellows: Imagining and Enacting Black Youth Exposure and Access to Technological, Entertainment and Sports Ecosystems*. Round Table Paper Presentation, American Educational Research Association (AERA) Annual Meeting, Philadelphia, PA.

Douglass, H. & Moran, D. (January, 2023). *Community Makerspaces and Digital Fabrication with Pre-Service Elementary Teachers* in *Reimagining Possibilities for Elementary Science Field Experiences and Practica.* Collaborative Poster Session, Association of Science Teacher Education (ASTE) Conference, Salt Lake City, UT.

Douglass, H. (November, 2022). *Makerspaces and Belonging: Collaboration to Invite More People to the Room.* Innovation/Ideation Session, American Association of Colleges and Universities (AAC & U) Back to Broken? Transforming STEM Higher Education Conference, Arlington, VA.

Douglass, H. & LoPresti, P. (September, 2021). *Research Practice Partnerships: Faculty, Teachers and Secondary Students in Informal Engineering Education*. American Society for Engineering Education Midwest Region Conference, Fayetteville, AR, online due to pandemic.

Douglass, H. (January, 2021). *A Multi-disciplinary Approach in Creating a STEM Education Minor: Lessons Learned.* Poster presentation*,* Association for Science Teacher Education (ASTE) International Conference, online due to pandemic.

Douglass, H., Gun-Yildiz, S., Kayumova, S., Ryu, M., Salloum, S., Siry, C., Tuvilla, M.R., Verma, G., Wilmes, S. Wright, C.E., & Varela, M. (March, 2021). *Critical Views of Science Education Research in Linguistically and Culturally Diverse Contexts*. Symposium, National Association for Research in Science Teaching (NARST) International Conference, online due to pandemic.

Douglass, H., (October, 2020). *Creative Confidence Mapping: Inclusive, Authentic, Reflective Assessment*. Critical and Creative Thinking Conference, University of South Florida, online due to pandemic.

Douglass, H., Verma, & Wee, B. (March, 2020). *The Affordances of a Visual Methodology in Understanding Context: Seeing Women's Science and Engineering Experiences*. Paper presentation, National Association for Research in Science Teaching (NARST) International Conference, online due to pandemic.

Douglass, H., & Verma, G. (January, 2020). *How Can Teaching STEM in an Elementary School be Out-of-Field?* Paper presentation, Association for Science Teacher Education (ASTE) International Conference. San Antonio, TX.

Douglass, H. (October, 2019). *Creating a STEM Education Minor: A Multi-disciplinary Approach Using a Design Thinking Process*. Session speaker, National STEM Education Research Summit, Raleigh, NC.

Douglass, H. & Verma, G. (January, 2019). *The Intersection of Formal and Informal Learning Experiences as Alternative Inclusive Spaces: Exploring Activities and Dialogues.* Experiential session, Association for Science Teacher Education (ASTE) International Conference, Savannah, GA.

Douglass, H. & Verma, G. (March, 2018). *Making the Invisible Visible: Providing Context of Women's STEM Experiences.* Paper presentation at National Association for Research in Science Teaching (NARST) International Conference, Atlanta, GA.

Verma, G., Douglass, H. & Puvirajah, A. (March, 2018). *Integrating Robotics for All Middle School Students.* Presentation at National Science Teachers Association (NARST) National Conference, Atlanta, GA.

Verma, G**.** & Douglass, H. (April, 2016). *Supplemental Optional Take Home Projects: Interfacing the Formal and Informal.* Paper presentation at National Association for Research in Science Teaching (NARST) International Conference, Baltimore, MD.

Douglass, H**.** (January, 2016.) *Designing an Informal Elementary STEM Summer School Experience: Teachers, Students and Parents Speak Out.* Poster presentation at Association for Science Teacher Education (ASTE) International Conference, Reno, NV.

Douglass, H. (April, 2015). *Frameworks for Making the Invisible Visible: A Qualitative Study Providing Context of Women's STEM Experiences Through Visual Representations*. Presented at Jhumki Basu Equity and Ethics Scholars' Poster Session, National Association for Research in Science Teaching (NARST) International Conference, Chicago, IL.

Douglass, H. (April, 2014). *Making the Invisible Visible, A Pilot Case Study of Women in STEM.* Presented at Sandra K. Abell Scholars' Poster session, National Association for Research in Science Teaching (NARST) International Conference, Pittsburgh, PA.

Verma, G., Douglass, H. & eCALLMS Design Team (April, 2014). Multilingual Learning in Science and Mathematics Symposium *(*Viesca, K. symposium organizer.) Paper presentation in *Developing Linguistic Responsiveness in Science Teachers of Multilingual Learners.* American Educational Research Association (AERA) International Conference, Philadelphia, PA.

Douglass, H., Hamilton, B., & Leonard, J. (May, 2013*). Improving Teacher Education for Multilingual Learners through Action Research.* Poster session, American Educational Research Association (AERA) International Conference, San Francisco, CA.

Verma, G., Douglass, H., Hamilton, B., & eCALLMS Design Team (January, 2013). *Making Science Accessible to ALL Students: Integrating Academic Language Learning in Science.* Paper presented at Association for Science Teacher Education (ASTE) International Conference, Charleston, SC.

Mahon, E., Nocon, H. & Douglass, H. (May, 2013). *Collaborative Online Professional Development Focused on Academic Language in Science.* Poster presented at Academic Language in the Content Areas for English Learners Conference, Colchester, VT.

Hamilton, B., Mahon, E., Russell, N., & Douglass, H. (November, 2012). *Collaborative Module Design in Science and Mathematics Education.* Presented at the Colorado Teachers of English to Speakers of Other Languages meeting, Denver, CO.

Research Articles/Books In Preparation

Douglass, H., Verma, G., & Wee, B. (Revise and Resubmit) Determining contextual critical junctures: Women scientists' and engineers' experiences as visual representations. *Journal of Women and Minorities in Science and Engineering.*

Douglass, H., Garcia, D. & Siegfried, D. Using longboarding to teach force and motion: Student choice teaching assignments in an undergraduate introduction to STEM education class. To be submitted with undergraduate students to *Journal of College Science Teaching.*

Smith, E. E., Wacker, A. & Douglass, H. *Authentic assessment: Leveraging cultural competence, lived experiences and asset-based approaches*. Proposal accepted by Rowman and Littlefield

Invited Presentations

Douglass, H. (2021). Panelist, Webinar for special edition of *Journal of Science Teacher Education*: *Instructional Materials Designed for A Framework for K-12 Science Education and the Next Generation Science Standards*. Hosted by Association for Science Teacher Education.

Douglass, H. (2020, 2021). *What to Expect as a New Faculty Member*. Invited talk to newly hired TU faculty. The University of Tulsa Office of the Provost.

Douglass, H., & Parrott, M. (2021). *Math Mentoring During Pandemic Times: Centering Relationships and Critical Thinking*. Prepared for Tulsa Regional STEM Alliance math mentor training.

Douglass, H. (2020). *Online instruction: Frameworks for Inclusive and Interactive Teaching.* The University of Tulsa Faculty Resource Center.

Douglass, H, Smith, E.E., & Wacker, A. (2020). *It Starts with Me: Developing Antiracist Educators through Classroom Practices* . Oklahoma Association of Colleges for Teacher Education Annual Conference, online due to pandemic.

Parrott, M & Douglass, H. (October, 2019). *Me & My Math Mentor: Building Community Partnerships to Increase Student Success*. Prepared for Tulsa Regional STEM Alliance math mentor training.

Douglass, H. (September, 2018). *The University of Tulsa Department of Education STEM Update*. Tulsa Regional STEM Alliance (TRSA) Advisory Council Meeting. Jenks, Ok.

Douglass, H**.** (July, 2017). *Designing with Kindergarten Students*. Elementary STEM Showcase, National Science Teacher Association (NSTA), STEM Forum. Orlando, FL.

Douglass, H. & Bloms, S. (September, 2015). *Computing and Me: Computer Science Introduction for Elementary Teachers*. Breakout session of Computer Science Symposium sponsored by St. Vrain Valley School District, National Center for Women in Technology and Engaging Computer Science in Traditional Education (ECSITE). Longmont, CO.

Verma, G., Douglass, H., Hamilton, B., & eCALLMS Design Team (October, 2012). *Making Science Accessible to ALL Students: Integrating Academic Language Learning in Science.* Poster Session, STEM Symposium, University of Colorado Denver.

Teaching

Introduction to Statistics, STEM Precollegiate Program, University of Colorado, Boulder (Summer 2024) Create and delivery statistics course for high school students in STEM program outreach who plan on attending college at CU Boulder.

Introduction to STEM Education (EDUC 2123), The University of Tulsa, (Fall 2019, 2020, 2022, 2023, 2024; Spring 2021). Created class and converted from face-to-face to hybrid format for pandemic teaching protocols. Students participate in examining implicit bias, privileges, a survey of hands-on/minds-on STEM experiences, microteaching, career talks and complete a collaborative final project designing and presenting a STEM program for their choice of school, state or national implementation.

Design Thinking in Schools and Communities (EDUC 2083), The University of Tulsa, (Fall 2019, 2020, 2022, 2023, 2024; Spring 2019, 2020, 2022, 2023, 2024). Created class and converted from face-to-face to hybrid format for pandemic teaching protocols. Students examine implicit bias and privileges in context of empathy and the four other design thinking components. Students complete experiences in deconstructed design thinking content, included reflections on mindsets, processes and exercises, and complete a holistic, collaborative design thinking project in schools or the community as a final experience, including providing feedback to classmates. Developed section for Center or Global Engagement (J Term 2025) in collaboration with Foxwood Academy and The White Hills Park Trust, Nottingham, UK.

Mathematics for Elementary Children (EDUC 4133), The University of Tulsa, (Spring Semesters 2019-Present). Converted from face-to-face to hybrid format for pandemic teaching protocols, including field experiences. Redesigned the course to include examining implicit bias, privileges and mathematics identity related to future teaching. Students complete text readings, practice problems, reflections and field guide experiences, analyze video and peer teach. Students also plan and execute at least three teaching experiences, aligning with state standards and assessment, and including feedback analysis during 12-week field placement in elementary classrooms.

Science for Elementary Children (EDUC 4123), The University of Tulsa, (Spring Semester 2019-Present). Converted from face-to-face to hybrid format for pandemic teaching protocols, including field experiences. Redesigned course to include examining implicit bias, privileges and science identity. Students complete nature of science exercises, hands-on/minds-on science experiences, develop testable questions and experiments, and use the 5E model with NGSS standards in lesson preparation and delivery. Students look at children's conceptions of science and implement experiences to challenge thinking. The integration of formal and informal experiences are included in the class. During 12 week field placement, if possible, science lessons are taught, or one-on-one science experiences are offered to elementary-aged students (elementary placement schedules at times do not align with science teaching).

The Liberal Arts and Preparation for Life after Graduation (AS 2001), The University of Tulsa, (Spring 2021; Fall 2024). At administrative request, created an online class for students in Kendall College of Arts and Sciences to prepare them for employment, community service and/or graduate school. Students reflected on bias and privilege, examined the pillars of a classic education, and interacted with college professionals on career and graduate school readiness.

Instructor, Elementary Science Methods (SCED 4/5401), University of Colorado Denver (Spring, 2014, 2015). Provided students with 5E lesson planning and execution experiences, including peer teaching and the creation of a teaching website. Students completed reading and exercises related to science and children and worked with an individual child on student concepts of sinking and floating.

Invited guest teacher, Multicultural Science Education (SCED 5340), University of Colorado Denver (April, 2013).

Invited guest teacher, Curriculum Studies in Mathematics and Science (SCED 6110), University of Colorado Denver (Fall, 2012)

Teaching Assistant, Secondary Science Methods (SCED 4/5400), University of Colorado Denver (Fall, 2012 & 2013)

Teaching Assistant, Elementary Science Methods (SCED 4/5401), University of Colorado Denver (Spring, 2011)

Elementary Teacher and Mathematics, Engineer, Science Achievement (MESA) Advisor, St. Vrain Valley School District (2000-2011)

Service

National

- National Science Foundation Review Panel, 2025
- *Journal of Research in Science Teaching* Early Career Reviewer Pathway Program (2021 to present)
- Editorial Review Board, *Journal of Science Teacher Education*, (2020 to present)
- Facilitator, online critical conversations salon group on race, class and gender in individual and professional contexts, (2020 to present)
- Discussant, Association for Science Teacher Education International Conference, (2019, 2020)
- Reviewer, *Cultural Studies of Science Education*, (2017-2021)
- Student member, Equity Dinner, Equity and Ethics Committee, *National Association for Research in Science Teaching,* Baltimore, MD (Spring, 2016, 2017)
- Program distribution, Equity and Ethics Committee, *National Association for Research in Science Teachin*g, Pittsburgh, PA (Spring 2014, 2015)
- Registration, *Association for Science Teacher Education*, Charleston, SC (Spring 2012, 2016)

University

The University of Tulsa

- Tulsa Undergraduate Research Challenge (TURC)Mentor
- Certification Officer, Educator Preparation Program
- Geosciences program review committee
- AS 2001 The Liberal Arts and Preparation for Life after Graduation, instructor
- Teacher Education Council
- Department of Education Admission Committee
- Various recruitment activities including presentations to prospective students and individual student/family campus visits
- STEM Education Minor Creation and Development (approved by curriculum committee Spring 2021)
- Multicultural Mentor and Protégé Program
- Kendall Arts and Science Assessment Committee
- Student Conduct Board

University of Colorado Denver

- Participation in STEM Graduate Symposium (Spring 2012-Present)
- Recruiting for STEM Program, School of Education, University of Colorado Denver, National Council for Teachers of Mathematics, Denver, CO & National Science Teachers Association, San Antonio, TX (Spring, 2013)
- LiveText data input for course/class descriptions for School of Education, University of Colorado Denver (2014, 2 015)

Community

- Thunder Fellows learning cohort sponsor (2021-present).
- Tulsa Regional STEM Alliance Science Fair Judge/Event Judge (2018-present).
- Boulder County Multicultural Awards, Fund Raising/Donations participant (2016/2017)
- Judge, VEX IQ Elementary/Middle School Robotics Competition, Alpine Elementary, Indian Peaks Elementary, Longmont, CO (2013-2018)
- Mentoring, High School Robotics Students, Innovation Center, Longmont, CO (2013-2018)

Honors and Awards

2025	Learning Analytics in Science Education Research (LASER) Fellow, National Science Foundation/Friday Institute for Educational Innovation
2024	Sorority & Fraternity Life Faculty of the Year for the Kendall College of Arts & Sciences, The University of Tulsa
2019	Most Valuable Professor (MVP), chosen by senior volleyball student, The University of Tulsa
2019	"Play" Research Fellow, The Oklahoma Center for the Humanities, The University of Tulsa Podcast: *Playing with Education* https://utulsa.edu/education-helen-douglass/ Blog: *Tinkering and Making as Play-Potential for Inclusionary STEM Teaching and Learning* https://humanities.utulsa.edu/tinkering-and-making-as-play-potential-for-inclusionary-stem-teaching-and-learning/
2019-2023	Faculty Development Summer Fellowships totaling $31,000, The University of Tulsa
2018	Shark Tank Research Grant ($5,000), The University of Tulsa
2017	Research and Practice Partnership ($2,000), Research + Practice Collaboratory
2016	Outstanding Doctoral Student Award, SEHD, University of Colorado Denver
2012-2015	Graduate School Travel Awards ($1,500), University of Colorado Denver
2014	NARST, Jhumki Basu Equity and Ethics Scholarship ($700)
2013	Sally Tague Diversity Scholarship ($2,000), University of Colorado Denver
2013	NARST, Sandra K. Abell Summer Research Institute for Doctoral Students
2013	Featured Graduate Student, University of Colorado Denver
2012	eCALLMS Travel Award ($700), University of Colorado Denver
2011-2013	Graduate Assistantship, University of Colorado Denver

Employment

2024-Present	Associate Professor, Education, Science and STEM focus The University of Tulsa Tulsa, OK
2024	Instructor, Precollegiate Outreach Program, STEM Exploring Statistics The University of Colorado Boulder Boulder, CO
2018-2024	Assistant Professor Education, Science and STEM focus The University of Tulsa Tulsa, OK
2013-2018	Instructional Consultant/STEM Coordinator St. Vrain Valley School District Longmont, CO
2014, 2015	Instructor, Elementary Science Methods University of Colorado Denver Denver, CO
2011-2013	Full Time Research Assistant DEMFAP (funded by US Department of Education) *Designing Evaluation Measures for Formative Assessment Practices* Co-PI's -Dr. Maria Araceli Ruiz-Primo, Dr. Deanna Iceman Sands Design instruments to guide formative assessment in k-8 science and mathematics classrooms, including identifying formative assessment practices, cycles and potential formative opportunities. Responsibilities included data collection and analysis, conference and paper preparation. eCALLMS (funded by US Department of Education) *eLearning Communities for Academic Language Learning in Math and Science* Co-PI's-Dr. Kara Mitchell Viesca, Dr. Cindy Gutierrez, Dr. Jacqueline Leonard, Dr. Honorine Nocon Creation of substantial, online professional development opportunities for in-service science and mathematics teachers that will support high quality instruction to accelerate English Learners' (EL's) acquisition of language, literacy, and content knowledge.
2000-2011	Mathematics, Engineering, Science Achievement (MESA) Elementary School: teacher, grant writer, program developer and coordinator St. Vrain Valley School District Longmont, CO
2004-2005	Fulbright Recipient

	Glenbrook Primary School Nottingham, UK
2000-2008	Elementary Teacher Columbine, Spangler and Centennial Elementary Schools St. Vrain Valley School District Longmont, CO
1996-2000	Counselor Private Practice & YMCA of Boulder Valley Boulder, CO
1992-1994	Registered Dietitian/Nutrition Counselor WIC & McKee Medical Center Greeley/Loveland, CO

K-12 Teaching Grants/Awards

2016 Environmental Education in Residence $3,000
2011 Mikkelson Science and Mathematics Professional Development Grant $3,300
2009 Amgen Award for Science Teaching Excellence $10,000
2009 Encore Teacher, Ed. Foundation for the St. Vrain Valley
2009 Earth Expeditions, Cheetah Conservation Fund, Namibia $2,500
2009 American Geological Institute Leadership Training $1,000
2009/10 Biological Sciences Initiative Equipment Grants $ 1,500
2008 Community Foundation Littler Youth Fund Grant $ 7,000
2008 Seagate Technology Science Teacher Grant $3,000
2006 MIT Science and Engineering Program for Teachers $3,000
2005 Fulbright Grant/Exchange $3,000
2004 NASA Teacher in Space Nominee
2002 Outstanding MESA Program/Student (add'l years-2003, 2006, 2010, 2011)
2004 Delta Kappa Gamma Scholarship, Professional Development in Physics $ 800
2001-17 St. Vrain Valley Ed. Foundation Grants, Science/Technology/Robotics $4,000

Professional Memberships

Association for Science Teacher Education (ASTE)
American Educational Research Association (AERA)
National Association for Research in Science Teaching (NARST)
National Science Teachers Association (NSTA)
American Association of University Women (AAUW)