

CURRICULUM VITAE

Araceli Martinez Ortiz, PhD.

Microsoft Endowed Professor of Engineering Education

Department of Biomedical Engineering and Chemical Engineering &
Department of Interdisciplinary Learning and Teaching
The University of Texas at San Antonio

ORCID 0000-0002-3375-1519

I. ACADEMIC/PROFESSIONAL BACKGROUND

Name: Araceli Martinez Ortiz, Ph.D.

Title: Professor of Engineering Education

Contact: araceli.ortiz@utsa.edu

Educational Background

<i>Degree</i>	<i>Year</i>	<i>University</i>	<i>Major</i>	<i>Thesis/Dissertation</i>
PhD	2010	Tufts University, Medford, MA	Engineering Education	<i>Students' Understanding of Ratio and Proportion in an Engineering Robotics Program</i>
MA	2003	Michigan State University, Lansing, Michigan	Curriculum & Instruction/ Instructional Technology	
M.S.	1992	Kettering University, Flint, Michigan	Manufacturing Engineering Management	
B.S.	1988	The University of Michigan, Ann Arbor, Michigan	Industrial & Operations Engineering	

University Experience

<i>Position</i>	<i>University</i>	<i>Dates</i>
Microsoft Endowed Professor- Engineering Education	The University of Texas at San Antonio Klesse College of Engineering and Integrated Design / College of Education and Human Development	August 2021 – Present

Executive Director, Dr. Manuel P. Berriozábal Prefreshman Engineering Program (PREP)	The University of Texas at San Antonio Klesse College of Engineering / College of Education and Human Development	June 2022- Present
NASA MSI Faculty Fellow (IPA rotation)	The University of Texas at San Antonio / NASA Office of STEM Engagement	Aug 2021 – Jan 2023
Executive Director	LBJ Institute for STEM Education and Research Texas State University	Jan 2013 – Aug 2021
Visiting Scholar of Engineering Education	Instituto Tecnológico y de Estudios Superiores de Monterrey. Mexico City, Mexico	Oct 2019 - Mar 2020
Visiting Scholar of Engineering Education	The University of New South Wales. Sydney, Australia	Mar 1-31, 2019
Visiting Scholar of Engineering Education	Mekelle University, Mekelle, Ethiopia	Dec 1-21, 2017
Research Associate Professor	Texas State University	Aug 2017 – Aug 2021
Research Assistant Professor	Texas State University	Aug 2015 – July 2017
Assistant Professor	Texas State University	Aug 2012 – July 2015
Teaching Assistant	Tufts University	May 2006–July 2006
Adjunct Lecturer	Framingham State University	Nov 2004–Aug 2006

Other Professional Credentials (licensure, certification, etc.)

EC-6 Generalist Teacher Certification
 Mathematics 4–8 Teacher Certification
 Administrator Certification K–12
 Administrator Certification K–12

State of Texas, 2006- Present
 State of Texas, 2006- Present
 State of Texas, 2006- Present
 State of Massachusetts, 2005

Relevant Professional Experience

<i>Position</i>	<i>Entity</i>	<i>Dates</i>
STEM Education Research Consultant	Sustainable Future Education dba <i>Latinx STEM Ed Consulting</i> , San Antonio, TX	Aug. 2012–Present
Director, Educator Quality/Engineering Special Projects	Texas Higher Education Coordinating Board, Director, Educator Quality/Engineering Special Projects, Austin, TX	Aug. 2008–Aug. 2012
Assistant Principal/ Mathematics Specialist	Austin Independent School District, Austin, TX	Oct. 2006–Aug. 2008
Mathematics Specialist	Littleton Public Schools, Littleton, MA	Aug. 2005–Aug. 2006
Director, Teacher Professional Development	Learning Initiative for Teaching and Technology, Framingham, MA	Nov. 2004–Aug. 2006
Director, Curriculum Development: Engineering is Elementary Program	Museum of Science, Boston, MA	Sept. 2003–Nov. 2004
Associate Director of Marketing/Business Development Manager	Microsoft Corporation, Mexico City, Mexico and Southfield, MI	July 2000–Sept. 2003
Engineering Operations Strategist/New Business Development Manager	Ford Motor Company, Dearborn, MI and Mexico City, Mexico	Jan. 1995–July 2000
Engineering Design Group Leader/Quality Improvement Project Manager	General Motors, Warren, MI	Jan, 1989–Jan. 1995
Staff Quality Engineer	Plastech Inc., St. Clair Shores, MI	Jan. 1988–Jan. 1989

II. SCHOLARLY

Works in Print-Chapters in Books

Ortiz, A., Dennison, A., Collins, K.H., & Londa, M. (2022). Maximizing university-school partnerships and intervention research in advanced academics as a capacity building tool for educators and underrepresented students in STEM. In K.H. Collins, Roberson, J.J. and F.H.R. Piske (Eds.), *Underachievement in Gifted Education: Perspectives, Practices, and Possibilities* Routledge

Works in Print-Peer Reviewed Journal Articles

Thite, S., Ravishankar, J., Tomeo-Reyes, I. and **Martinez Ortiz, A.**, 2024. Design of a simple rubric to peer-evaluate the teamwork skills of engineering students. *European Journal of Engineering Education*, pp.1-24.

- Vázquez-Villegas, P., Ruiz-Cantisani, M., Caratozzolo, P., Lara-Prieto, V., Ponce-López, R., Martínez-Acosta, M., Torres, A., Sriraman, V., **Martínez Ortiz, A.** & Membrillo-Hernández, J. (2022). Preserving World Cultural Heritage: Social Justice and Sustainability Competencies via Socially-Oriented Interdisciplinary Education. *Journal of Teacher Education for Sustainability*, 24(1) 49-72. <https://doi.org/10.2478/jtes-2022-0005>
- Torres, A., Hu, J., Sriraman, V., **Martínez Ortiz, A. M.**, & Membrillo-Hernández, J. (2022). Assessing the effectiveness of problem-based learning across two concrete construction courses. *International Journal of Instruction*, 15(3), 473-496.
- Torres, Anthony & Sriraman, Vedaraman & **Martinez Ortiz, Araceli.** (2021). Comprehensive Assessment of a Project Based Learning Application in a Project Management Course. *International Journal of Instruction*. 14(3). 463-480. 10.29333/iji.2021.14327a.
- Martinez Ortiz, A.**, Novoa, C., and Sriraman, V. (2020). Understanding, Networks, and Inclusion in Higher Education- A Collective Impact Model towards Increasing STEM Major Student Retention. *Journal of College Academic Support Programs: Volume 2: Issue 3*.
- Martinez Ortiz, A.**, Rodriguez Amaya, L., Kawaguchi Warshauer, H., Garcia Torres, S., Scanlon, E. and Pruett, M. (2018). They Choose to Attend Academic Summer Camps? A Mixed Methods Study Exploring the Impact of a NASA Academic Summer Pre-Engineering Camp on Middle School Students in a Latino Community, *Journal of Pre-College Engineering Education Research (J-PEER)*: Vol. 8: Issue 2, Article 3.
- Martinez Ortiz, A.**, Sriraman, V., and Smith, S. (2018). Transformative STEM Teacher Education -Supporting Teacher Identity Development through Design and Making, *Journal of the World Federation of Associations of Teacher Education*. Vol. 2: Issue 3a., 69-93.
- Sriraman, V., Torres, A., & **Martinez Ortiz, A.** (2017). Teaching Sustainable Engineering and Industrial Ecology using a Hybrid Problem-Project Based Learning Approach. *Journal of Engineering Technology*, 4(2), 8-15
- Torres, A., Sriraman, V., & **Martinez Ortiz, A.** (2017). Implementing Project Based Learning Pedagogy in Concrete Industry Project Management. *International Journal of Construction Education and Research*
- Talley, K.G. & **Martinez Ortiz, A.** (2017). Women's interest development and motivations to persist as college students in STEM: Views and voices from a Hispanic serving institution. *International Journal of STEM Education*.
- Martinez Ortiz, A.** (2015). Examining students' proportional reasoning strategy levels as evidence of the impact of an integrated LEGO robotics and mathematics learning experience. *Journal of Technology Education*, 26(2), 46-69.
- Martinez Ortiz, A.**, Smith, S. & Bos, B. (2015). The power of educational robotics as an integrated STEM learning experience in teacher preparation programs. *Journal of College Science Teaching*, 44(5), 42-47.

Martinez Ortiz, A. & Sriraman, V. (2015). Exploring faculty insights into why undergraduate college students leave STEM fields of study: A three-part organizational self-study. *American Journal of Engineering Education*, 6(1), 43–60.

Song, In-Hyounk, Sriraman, V., & **Martinez Ortiz, A.** (2015). A three-step teaching and learning process in an advanced electronics course for non-electrical engineering technology majoring students. *World Transactions on Engineering and Technology Education*, 13(1), 8–13.

Works in Print- Refereed Conference Proceedings

Martinez Ortiz, A., (2023). Proceedings from the 2023 American Society of Engineering Education annual meeting: *A Review of Promising Practices in STEM Bridge Programs Serving High School and College Native American Indigenous Communities*. Baltimore, Maryland. American Society of Engineering Education. <https://peer.asee.org/42491>

Martinez Ortiz, A., (2023). Proceedings from the 2023 Gulf-Southwest Annual Conference of the American Society of Engineering Education: *Brillantes: Exploring Students Changing Perceptions of Mathematics and Engineering through an Integrated Engineering Design and Algebraic Program for Students in Honduras*. University of North Texas; Denton, Texas: American Society of Engineering Education.

Martinez Ortiz, A., (2021). Proceedings from the 2021 Gulf-Southwest Annual Conference of the American Society of Engineering Education: *Design and Development of Augmented Reality Engineering Expeditions - Innovations in Online Engineering Education*. Baylor, Texas: American Society of Engineering Education.

Martinez Ortiz, A., (2021). Proceedings from the 2021 American Society of Engineering Education annual meeting: *Examining the Classroom Impact of Culturally Responsive Teaching Profession Development for Middle and High School Mathematics & Pre-Engineering Teachers. Annual Conference & Exposition*. Long beach, California: American Society of Engineering Education.

Martinez Ortiz, A., (2021). Proceedings from the 2021 American Society of Engineering Education annual meeting: *Ethiopian Women Leaders in STEM Education: An International Leadership Development Research Study, submitted to 2021 ASEE Annual Conference & Exposition*. Longbeach, California: American Society of Engineering Education.

Thite, S. and **Martinez Ortiz, A.,** (2021). Proceedings from the 2021 American Society of Engineering Education annual meeting: *Review of teaching strategies towards development of a framework for online teamwork*. Long beach, California: American Society of Engineering Education.

Martinez Ortiz, A., Hug, S., Eyerman, S., Fletcher, T.L., and Soltys, M.A., (2020). Proceedings from the 2020 American Society of Engineering Education annual meeting: *Engineering Outreach: Ambassador Girls Empowering Girls in the Field*. Quebec City, Montreal (virtual): American Society of Engineering Education.

- Martinez Ortiz, A.,** Novoa, C., Spencer, BJ., Hazlewood, L. (2020). Proceedings from the 2020 American Society of Engineering Education annual meeting: *Spatial Visualization Skills Training at Texas State University to Enhance STEM Students' Academic Success*. Quebec City, Montreal (virtual): American Society of Engineering Education.
- Martinez Ortiz, A.,** Kawaguchi Warshauer, H., Rodriguez Amaya, L., Garcia Torres, S., (2018). Proceedings from the 2018 American Society of Engineering Education annual meeting: *The Influence of Early STEM Career Exploration as Related to Motivation and Self-determination Theory*. Salt Lake City, UT: American Society of Engineering Education.
- Martinez Ortiz, A.**(2018). Proceedings from the 2018 Association of Teacher Educators Conference(ATE). “Promoting Equity and Academic Achievement in STEM Education using Culturally Responsive Teaching”. Las Vegas, Nevada. February, 18, 2018.
- Smith, S.F, Talley, K.G., **Martinez Ortiz, A.,** Sriraman,V., (2018). Proceedings from the 2018 American Society of Engineering Education annual meeting: *Teachers' Engineering Design Self-Efficacy Changes Influenced by Boundary Objects and Cross-Disciplinary Interactions*. Salt Lake City, UT: American Society of Engineering Education.
- Torres, A. , Sriraman,V., **Martinez Ortiz, A.,** (2018). Proceedings from the 2018 American Society of Engineering Education annual meeting: *The Use of Peer Teaching Quality Managers to Improve Student Learning in a Construction Project Management Course*. Salt Lake City, UT: American Society of Engineering Education.
- Martinez Ortiz, A.,** Rodriguez Amaya, L.,Kawaguchi Warshauer, H., Garcia Torres, S., Scanlon, E. &Pruett, M. (2017). Proceedings from the 2017 American Society of Engineering Education annual meeting: *They Choose to Attend Academic Summer Camps? A Mixed Methods Study Exploring Motivation for, and the Impact of, an Academic Summer Pre-engineering Camp upon Middle School Students in a Latino Community*. Columbus, OH: American Society of Engineering Education.
- Martinez Ortiz, A.,** Mata, Eusebio, & Asiabanpour, B. (2017). Proceedings from the 2017 American Society of Engineering Education annual meeting: *A Pilot Study Measuring Student Attitude Changes Resulting from Participating in Workforce Development Training Program in Green and Technology Practices*. Columbus, OH: American Society of Engineering Education.
- Sriraman, V., Torres, A., & **Martinez Ortiz, A.,** (2017). Proceedings from the 2017 American Society of Engineering Education annual meeting: *Teaching Sustainable Engineering and Industrial Ecology using a Hybrid Problem-Project Based Learning Approach*. Columbus, OH: American Society of Engineering Education.
- Martinez Ortiz, A.,** & Guirguis, M. (2016). Proceedings from 2016 American Society of Engineering Education annual meeting: *Inspiring computer science interest in entry-level courses by developing unique, motivating and relevant instructional modules*. New Orleans, LA: American Society of Engineering Education.
- Novoa, C., **Martinez Ortiz, A.,** & Talley, K. (2016). Proceedings from 2016 American Society of

Engineering Education annual meeting: *Multi-disciplinary summer orientation sessions for first-year students in engineering, engineering technology, physics, and computer science*. New Orleans, LA: American Society of Engineering Education.

Talley, K., **Martinez Ortiz, A.**, Novoa, C., & Sriraman, V. (2016). Proceedings from 2016 American Society of Engineering Education annual meeting: *Integrating an introduction to engineering experience into a university seminar course*. New Orleans, LA.

Sriraman, V., Spencer, B.J., & **Martinez Ortiz, A.** (2016). Proceedings from 2016 American Society of Engineering Education annual meeting: *Early internships for engineering technology student retention: A pilot study*. New Orleans, LA: American Society of Engineering Education.

Torres, A., Sriraman, V., & **Martinez Ortiz, A.** (2016). Proceedings from 2016 American Society of Engineering Education annual meeting: *Considering the effectiveness of comprehensive assessment and the impact of PBL implementation in a concrete industry project management course*. New Orleans, LA: American Society of Engineering Education.

Martinez Ortiz, A. & Talley, K. (2015). Proceedings from 2015 American Society of Engineering Education annual meeting: *The roots of science, mathematics and engineering self-confidence in college students: Voices of successful undergraduate women*. Seattle, WA: American Society of Engineering Education.

Martinez Ortiz, A., Asiabanpour, B., Kim, Y., Salamy, H., & Jimenez, J. (2015). Proceedings from 2015 American Society of Engineering Education annual meeting: *Engaging students in environmental learning and awareness of green design technologies and careers through a pre-engineering program*. Seattle, WA: American Society of Engineering Education.

Hu, Jiong, **Martinez Ortiz, A.**, & Sriraman, V. (2014). Proceedings from 2014 American Society of Engineering Education annual meeting: *Implementing PBL in a concrete construction course*. Indianapolis, IN: American Society of Engineering Education.

Martinez Ortiz, A. (2014). Proceedings from 2014 American Society of Engineering Education annual meeting: *A comprehensive model for motivating and preparing under-represented students, educators and parents in science, engineering and technology*. Indianapolis, IN: American Society of Engineering Education.

Martinez Ortiz, A. (2011). Proceedings from 2011 American Society of Engineering Education annual meeting: *Students learning rate and proportion using engineering LEGO robotics*. Vancouver, British Columbia, Canada: Paper presented at the American Society for Engineering Education.

Freeman, R., Vasquez, H, Fuentes, A., Knecht, M., Martin, T., Walker, J. & **Martinez Ortiz, A.** (2010). Proceedings from 2010 American Society of Engineering Education annual meeting: *Development and implementation of challenge-based instruction in statics and dynamics*. Louisville, KY: American Society of Engineering Education.

Works in Print-Textbooks

Cunningham, C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary STEM curriculum textbook. Marvelous machines: Makingwork easier.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary STEM curriculum textbook. To get to the other side-Designing bridges.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary STEM curriculum textbook. Catching the wind-Designingwindmills.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is Elementary STEM curriculum textbook. Water, water, everywhere:Designing walls.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary STEM curriculum textbook. A sticky situation: Designingwalls.* Boston, MA: Museum of Science.

** These publications are textbooks of detailed curriculum units that align with a related butdifferent fictional storybook entered in the Creative Books section below.*

Works in Print-Creative Books

** These publications are fictional storybooks that align to a related but different publication entered in the Textbooks section above*

Cunningham C., Lachapelle C., Higgins M., and Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary curriculum: Aisha makes work easier.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary curriculum: Javier builds a bridge.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary curriculum: Leif catches the wind.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary curriculum: Saving Salila's turtle.* Boston, MA: Museum of Science.

Cunningham C., Lachapelle C., Higgins M., Lindgren-Streicher A., & **Martinez Ortiz, A.** (Eds.). (2005). *Engineering is elementary curriculum: YiMins's great wall*. Boston, MA: Museum of Science.

Works in Print- Non-refereed Conference Proceedings

Martinez Ortiz, A. (2008). Proceedings of the Pupils Attitudes Toward Technology Annual Conference, PATT-19: *Engineering design as a contextual learning and teaching framework: How elementary students learn math and technological literacy*. Salt Lake City, UT. 359–370.

Works in Print- Reports

Texas Education Agency and Texas Higher Education Coordinating Board (2009). Algebra II College and Career Readiness Standards, performance expectations and TEKS alignment report. Austin, Texas. State of Texas [**Martinez Ortiz, A.** – contributor]

Papers Presented at Professional Meetings- Refereed National/International Professional Meetings:

Close, E. and **Martinez Ortiz, A.** (2016, July). *Cool NASA Stuff, NGSS and Cultural Competency*. Invited Talk at the 2016 American Association of Physics Teachers Summer Meeting. Sacramento, CA.

Martinez Ortiz, A. (2016, April). Innovation in Teacher Education within a Global Context- *Cooperative Networks of Experts Facilitating Teacher Professional Development with NASA STEM Resources*. Invited Talk at the World Federation of Associations of Teacher Education. 2016 Conference in Barcelona, Spain. Barcelona, Spain.

Martinez Ortiz, A. (2016, March). Latino Attainment: Meeting America's Equity & Talent Imperatives- *Serving and Teaching our Brilliant STEM Students and Teachers - A NASA funded Model for Success*. Invited Talk at the American Association of Hispanics in Higher Education, Inc. 2016 Conference in Costa Mesa, California.

Martinez Ortiz, A. and Kohler, S. (2016, February). *NASA Workshop on Culturally Relevant STEM Education*. Invited Talk at the 2016 Association of Teacher Educators 96th Annual National Meeting. Chicago, Illinois.

Martinez Ortiz, A. (2015, June). *The Collective Impact of Collaborative Professional Learning Networks in Science, Technology, Engineering and Mathematics Education Efforts*. Invited Talk and poster presentation at the Asian Conference on the Social Sciences. Kyoto. Japan.

Martinez Ortiz, A. (2015, March). *The Potential Collective Impact of Engineering Education*. 2015 ASEE- Gulf Southwest Section Annual Conference. San Antonio, Texas

Martinez Ortiz, A. (2014, July). *Exploring Why Women Choose to Study STEM & PERSIST- Socialization and Identity Development*. Invited Talk at the STEM Think Tank Conference. The STEM Connection- Developing Skills and Creating Relationships. Nashville, TN.

Martinez Ortiz, A. (2014, March). *Supporting Texas faculty in the Preparation of Tomorrow's*

Teachers. Invited Talk at the New Horizons in Texas STEM Education Conference. Sponsored by the CCRI Texas Mathematics Collaborative. San Marcos, Texas

Huling, L., **Martinez Ortiz, A.**, and Beck, J. (2013, October), *Developing teacher educators to lead preparation program reforms*". Paper presented at the Consortium of State Organizations for Texas Teacher Education conference, San Antonio, Texas.

Martinez Ortiz, A., (2013, October), *Preparing quality elementary teachers in science, technology, engineering & mathematics*, Paper presented at the Critical Questions in Education conference, San Antonio, Texas.

Huling, L., **Martinez Ortiz, A.**, and Beck, J. (2012, October), *Shaping the future of college and career readiness*". Paper presented at the Consortium of State Organizations for Texas Teacher Education conference, Austin, Texas.

Martinez Ortiz, A. (2011). *College and Career Readiness initiative- Faculty Collaboratives*. Paper presented at the Association of Teacher Educators annual meeting, Orlando, Florida.

Martinez Ortiz, A. (2011). *Positionality Matters: Understanding culture and context from the perspective of key stakeholders*. Paper presented at the ITEST NSF Conference, Newton, Massachusetts.

Martinez Ortiz, A. (2009). *An Investigation of fifth-grade students' learning of rate and proportion using engineering LEGO robotics*. Poster presented at the American Educational Research Association (AERA) annual conference, Denver, Colorado

Martinez Ortiz, A. (2006). *Technology and instructional design in the STEM classroom*. Paper presented at the International Technology and Engineering Educators Association annual conference, Salt Lake City, Utah

Invited Talks, Lectures, and Presentations:

Martinez Ortiz, A. (2020, January). *Women in Computer Science- Introduction to STEM Program partnership with Dell Technologies*. Round Rock, TX.

Martinez Ortiz, A. (2020, January). *Culturally Responsive Engagement with NASA*. NASA Langley Civil Servant Meeting, Langley, VA.

Martinez Ortiz, A. (2020, January). *Culturally Responsive Teaching with NASA*. NASA Langley Office of STEM Engagement, Langley, VA.

Martinez Ortiz, A. (2020, January). *Strategically Aligning STEM Engagement Efforts in California for NASA Aerospace Educational Objectives*. NASA Armstrong, Edwards Base, CA.

Martinez Ortiz, A. (2020, February). *Overview of the NASA FAMA Backpack Program with a Focus on Teacher Professional Development*. NASA Glenn Research Center. Cleveland, Ohio.

- Martinez Ortiz, A.** (2020, February). *Developing International Research Partnerships in Science and Engineering Education*. LBJ Institute for STEM Education and Research. Research Fellows Seminar. Texas State University. College of Science and Engineering.
- Martinez Ortiz, A.** (2020, March). *Research Methodologies in Engineering Education*. Visiting Professor, Engineering Education. Instituto Tecnológico y de Estudios Superiores de Monterrey(Tecnológico de Monterrey), Department of Biotechnology. Mexico City, Mexico.
- Martinez Ortiz, A.** (2020, March). *Mujeres en Ingenieria- Recomendaciones para una Carrera Exitosa*. Visiting Professor, Engineering Education. Instituto Tecnológico y de Estudios Superiores de Monterrey (Tecnológico de Monterrey), Department of Biotechnology. MexicoCity, Mexico.
- Martinez Ortiz, A.** (2020, March). *Sisters in STEM across the World*. Visiting Professor, Engineering Education. Instituto Tecnológico y de Estudios Superiores de Monterrey (Tecnológico de Monterrey), Department of Biotechnology. Mexico City, Mexico.
- Martinez Ortiz, A.** (2020, March). *Strategies for Publishing & Funding your Research*. Visiting Professor, Engineering Education. Instituto Tecnológico y de Estudios Superiores de Monterrey(Tecnológico de Monterrey), Department of Biotechnology. Mexico City, Mexico.
- Martinez Ortiz, A.** (2020, April). *NASA Resources for STEM Education and the Artemis Generation-RADIANS Saturday STEM Online Seminar*. Texas State University. San Marcos, TX.
- Martinez Ortiz, A.** (2020, April). *Tips for Parents Teaching STEM at Home*. NASA STEM EPDC Webinar.
- Martinez Ortiz, A.** (2020, April). *Asynchronous Learning via Digital Badging- For Small Businessesand Minority Serving Institutions*. NASA Video Seminar.
- Martinez Ortiz, A.** (2020, May). *Developing as a Disciplinary Based Educational Researcher*. LBJ Institute Fellows Meeting – Facilitator of Year-End Presentation Day. Texas State University.San Marcos, TX.
- Martinez Ortiz, A.** (2020, May). ASEE EngineerGirl Ambassador Presentation. ASEE Annual Virtual Conference.
- Martinez Ortiz, A.** (2020, June). *Uniting Partners, Transforming Learning (TIES) STEM Ecosystem-An HSI Perspective*. NASA Video Seminar.
- Martinez Ortiz, A.** (2020, June). *Preparation Allows you to Say Yes- Recognizing Opportunities for Success in your Future Engineering Career*. LBJ Institute Virtual High School Internship Program. NASA Video Seminar.
- Martinez Ortiz, A.** (2020, August). *Motivating and Preparing Science Students Using NASA's Educational Resources based on Missions and Scientific Resources*. Champions for Science-Virtual High School Conference- Invited by NASA Speaker's Bureau.
- Martinez Ortiz, A.** (2020, August). *STEM Engagement with NASA standards-aligned active learning resources*. NAS Oceana Virtual Air Show STEM Day - with NAS Oceana.

- Martinez Ortiz, A.** (2020, August). *NASA Research Funding Information and Networking Opportunities- a Workshop for Minority Serving Institutions - QEM Network*. Video Seminar.
- Martinez Ortiz, A.** (2020, August). *NASA STEM EPDC CRT Resources Overview - NASA Next Gen STEM National Innovation Partnership Training*. Video Seminar.
- Martinez Ortiz, A.** (2020, September). *La Generacion Artemisa- Tecnologia e Ingeniera al Rescate!* Instituto Tecnológico y de Estudios Superiores de Monterrey (Tecnológico de Monterrey)- Seminario Institucional.
- Martinez Ortiz, A.** (2020, September). *Active Workshop-Culturally Responsive Engagement and Teaching*. NASA Office of STEM Engagement, NGS Leads.
- Martinez Ortiz, A.** (2020, September). *NASA Resources for Secondary STEM Educators- An Overview*. Texas State University. Department of Curriculum & Instruction – Secondary Group. Online seminar.
- Martinez Ortiz, A.** (2020, September). *Supporting Undergraduate STEM Student Success*. Texas State University. HSI Forum. Online seminar.
- Martinez Ortiz, A.** (2020, November). *Diversity Workshop B*. Texas State University. EPDC Webinar.
- Martinez Ortiz, A.** (2020, December). *Thankful for Science- STEM Seminar with the Hays, Lockhart, San Marcos, Seguin Communities*. EPDC Webinar.
- Martinez Ortiz, A.** (2020, December). *Connecting Mathematical and Scientific Thinking to Robotics –Early Pathways to Careers in Computer Science*. Video Seminar with the San Marcos CISD. EPDC Webinar.
- Martinez Ortiz, A.** (2019, January). LBJ Institute Open House. Educators as Makers. "Theoretical underpinnings of the Maker Movement". San Marcos, Texas.
- Martinez Ortiz, A.** (2019, January). NASA STEM Engagement Research-based School to Home Science Programming for Students and Families. The NASA FAMA Backpack Program. Mendez Elementary. Kyle, TX.
- Martinez Ortiz, A.** (2019, February). Teaching & Learning with the Engineering and Science Practices. ATE STEM Learning Lab. ATE Conference, Atlanta, GA.
- Martinez Ortiz, A.** (2019, June). Strategically Aligning Engineering Education Research Programs. Texas State University. San Marcos, TX.
- Martinez Ortiz, A.** (2019, March). Sisters in STEM across the World- International Women's Day
The University of New South Wales. The School of Electrical Engineering and Telecommunications. Sydney, Australia.
- Martinez Ortiz, A.** (2019, March). Supporting Engineering Learning with Active Teaching and Learning Strategies. The University of New South Wales. The School of Electrical Engineering

- and Telecommunications. Sydney, Australia.
- Martinez Ortiz, A.** (2019, March). Research Methodologies in Engineering Education. The University of New South Wales. The School of Electrical Engineering and Telecommunications. Sydney, Australia.
- Martinez Ortiz, A.** (2019, March). Leadership and Collaborative Team Skill Development for Engineering Students. The University of New South Wales. The School of Electrical Engineering and Telecommunications. Sydney, Australia.
- Martinez Ortiz, A.** (2019, March). STEM Educational Interventions and Research based on a Social Constructivist Worldview. The University of Sydney. Physics Consortium. Sydney, Australia.
- Martinez Ortiz, A.** (2019, April). Supporting ABET Engineering Learning Outcomes with 7 Active Teaching and Learning Strategies. IEEE EDUCON Conference. Dubai, United Arab Emirates.
- Martinez Ortiz, A.** (2019, April). Theoretical underpinnings Of the Maker Movement- Research in Engineering Education. Texas State University. San Marcos, TX.
- Martinez Ortiz, A.** (2019, April). NGSS Overview & Hands-on Review of the 8 Science and Engineering Practices using NASA Contexts. University of Illinois at Chicago. Chicago, Illinois.
- Martinez Ortiz, A.** (2019, May). Broadening Latina participation in STEM –Strengthening the Community of Women Faculty of Color in STEM. 2019 NSF INCLUDES Symposium- Advancing Latinas in STEM Academic Careers. University of Texas Rio Grande Valley. Edinburg, TX.
- Martinez Ortiz, A.** (2019, June). Integrated Engineering & Mathematics for Informal Learning Spaces-Professional Development for K12 Elementary School Teachers. Texas State University. San Marcos, TX.
- Martinez Ortiz, A.** (2019, June). Children’s Mathematical Thinking and Introduction to Cognitively Guided Instruction. Texas State University - EPDC Educator Mathematics Institute.
- Martinez Ortiz, A.** (2019, February). Engineers, NASA, and You- FAMA STEM Saturday Kickoff. Seguin, Tx.
- Martinez Ortiz, A.** (2019, July). Project Oriented Design-Based Learning (PODBL)-A Teaching Skills Workshop for Instructors of Courses Related to the Material Handling Industry. Texas State University. Materials Handling Institute.
- Martinez Ortiz, A.** (2019, September). Out of This World STEM Hands-On Engagement for Students Using Simple Materials. NASA STEM Day. Navajo Technical University. Crownpoint, New Mexico.
- Martinez Ortiz, A.** (2019, October). An Overview of Engineering Education. College of Engineering, Tec de Monterrey, Mexico City Mexico.

- Martinez Ortiz, A.** (2019, October). Explorer's Guide to the Solar System- FAMA STEM Saturday Session Lockhart, Tx.
- Martinez Ortiz, A.** (2019, October). Culturally Responsive Teaching in STEM using the EPDC DigitalBadges. Hawaii Space Grant Astronaut Day. Honolulu, Hawaii
- Martinez Ortiz, A.** (2019, October). Small Steps to Giant Leaps- NASA Careers in Math and Science with NASA. St. Louis School for Boys. Honolulu, Hawaii
- Martinez Ortiz, A.** (2019, October). Exploring the Moon to Mars with NASA Educational Resources. SACNAS Conference. Honolulu, Hawaii
- Martinez Ortiz, A.** (2019, November). Leadership and Collaborative Team Skill Development for a Diverse and Global Engineering Corporate Environment- A Professional Development Model for Women in the Engineering Fields. IEEE Women In Engineering Forum East, WashingtonDC, USA.
- Martinez Ortiz, A.** (2018, March). Texas State University Delegation of Teacher Educators from la Universidad Catolica del Norte (UNC) in Chile. *"Overview of Science, Technology, Engineering & Mathematics Education in the U.S."* San Marcos, TX.
- Martinez Ortiz, A.** (2018, April). Presentation to ASEE- GSW Conference. *"Using Systems Theory and Collective Impact Approaches to Increase the Retention and Success of University STEMMajors."* Austin, Texas.
- Martinez Ortiz, A.** (2018, May). Medgar Evers- The World Runs on STEAM Conference. *"Learning Communities and Collective Impact in Higher Education- A Model Towards Increasing STEMMajor Student Retention."* New York City, NY.
- Martinez Ortiz, A.** (2018, June). NASA MUREP Educator Institute at Glenn Research Center. *"MakingSTEM Relevant for Diverse Student Populations (CRT) & Team Building / Overview of Teaching and Learning Framework & NGSS Standards / Planning & Carrying Out Investigations Classroom Connections/ Earth & Space Science Standards / Interdependence of Science, Engineering & Technology/ Life Science Standards / Engineering, Technology & Applications of Science / Integrating Mathematics, Computer Science, Reading and the Arts in STEM."* Cleveland, Ohio.
- Martinez Ortiz, A.** (2018, July). FAMA Closing Presentation for Families. *"Tu Puedes Ser Ingeniero/a ! You Can Do it- Be an Engineer!"* San Marcos, TX.
- Martinez Ortiz, A.** (2018, September). National Council of Space Grant Directors Meeting, Stowe, Vermont.
- Martinez Ortiz, A.** (2018, September). TxState Common Experience Series-Innovation Week- NASA Innovation Day workshop coordination. *"Innovation the NASA Way – Impacting our World and Beyond."* San Marcos, Texas.
- Martinez Ortiz, A.** (2018, October). Future Aerospace Engineers and Mathematicians Academy. *"Stars, Science, and NASA"*. Lockhart, TX.

- Martinez Ortiz, A.** (2018, October). Round Rock Scholar workshop. *“Innovation- from Creative Playin Schools to NASA Space Technologies that Change the World.”* Round Rock, TX.
- Martinez Ortiz, A.** (2018, October). Workshop for Faculty Senate Leaders- *“Faculty Diversity Overview at Texas State.”* San Marcos, TX.
- Martinez Ortiz, A.** (2018, October). Stemsation- University of Texas San Antonio presentation- *“Innovation, Creative Play and Engineering Education.”*
- Martinez Ortiz, A.** (2018, November). Kyle Elementary Schools Professional Development. *“STEM Education for Elementary School Students.”*
- Martinez Ortiz, A.** (2018, December). Munich- Ludwig Maximilians- Universitat- The Munich Center of the Learning Sciences Seminar. *“The Roles of Domain- Specific and Domain- General Knowledge in Science and Engineering Education”.*
- Martinez Ortiz, A.** (2016, June). Hands-On *NASA Workshop: NGSS Aligned and Culturally Relevant STEM Education Resources.* Invited Talk at the 2016 Touch Tomorrow Meeting for Teachers- A festival of science, technology, and robots. Worcester, MA.
- Martinez Ortiz, A.** (2016, May). *Towards the Development of Faculty Learning Communities Interested in Improving STEM Education for All Students.* Keynote Presentation at the 2016 NSF Rising Stars- Faculty Summer Institute. San Marcos, TX.
- Martinez Ortiz, A.** (2016, March). *Culturally Responsive Teaching in STEM Education- Using NASA Educational Resources.* Invited Talk at the NASA Research Center- STEM Educators Meeting. Langley, Virginia.
- Martinez Ortiz, A.** (2014, November). *Succeeding in your STEM Career- Keys to Success in Life and Career.* Invited Talk at the Women in Science & Engineering Conference (WISE). Texas State University College of Science and Engineering. San Marcos, Texas
- Martinez Ortiz, A.** (2014, October). *Successful Strategies to Fund your STEM Education Research- The NASA EPDC project.* Invited Talk at the Center for Children and Families Research and Networking Event. Texas State University, San Marcos, Texas
- Martinez Ortiz, A.** (2014, January). *Problem Based Learning Overview.* Invited Talk for CSM 2342- Construction Materials. Texas State University, San Marcos, Texas
- Martinez Ortiz, A.** (2013, May). *Science and Mathematics Process Standards- An Opportunity for Engineering as a Context.* Invited Talk at the College & Career Readiness Faculty Collaborative Conference. Houston, Texas
- Martinez Ortiz, A.** (2012, October). *National and state directions towards integrated STEM teacher preparation.* Invited Talk at the Math, Science and Technology Teacher Preparation Academies (MSTTPA) conference. Stephen F. Austin State University. Nacogdoches, TX
- Martinez Ortiz, A.** (2012, May). *Towards improving educator quality- Research-based initiatives in Texas.* Invited Talk at the Math, Science and Technology Teacher Preparation

Academies (MSTTPA) conf. Texas Higher Education Coordinating Board. Austin, TX

Workshops Delivered:

Martinez Ortiz, A. (2016, June). Texas State University 2016 STEM Teacher Professional Learning Workshop – “*Early Algebra and Engineering Design Fundamentals for K-12.*” San Marcos CISD.

Martinez Ortiz, A. (2016, January). Texas State University 2016 STEM Professional Learning Workshop – “*STAAR and NASA SPACE connections for Upper Elementary Math and Science Learners.*” San Marcos CISD. Travis Elementary.

Martinez Ortiz, A. (2015, June). Texas State University 2015 STEM Professional Learning Workshop – “*Teaching Mathematics and Engineering Design to English Language Learners.*” San Marcos CISD. Travis Elementary.

Martinez Ortiz, A. (2014, February). Texas State University 2014 STEM Professional Learning Workshop. “*Engineering in the Elementary Classroom.*” San Marcos CISD. Travis Elementary.

Martinez Ortiz, A. (2013, August). Texas State University 2013 Summer STEM Professional Learning Workshop – “*Engineering in the Elementary Classroom.*” San Marcos CISD.

Other Works Not in Print:

Martinez Ortiz, A. (2008). The Impact of engineering education at the kindergarten to high school levels- A review of research. *Unpublished manuscript-Tufts University.*

Martinez Ortiz, A. (2004). Using the engineering design process to develop a framework and an approach for integrating engineering in the elementary classroom science curriculum. *Unpublished manuscript-Tufts University.*

Grants and Contracts

Funded External Grants and Contracts:

Martinez Ortiz, A. (PI), (2023-2024). *NEISD NASA School- SETA Educational Specialist- Year 2*
Funder: NASA, \$120,998.00 Award Period: 10/2023 – 10/2024.

Martinez Ortiz, A. (PI), (2022-2023). *NEISD NASA School- SETA Educational Specialist- Year 1*
Funder: NASA, \$28,423.40. Award Period: 10/2022 – 10/2023.

Martinez Ortiz, A. (PI), (2022-2023). *NASA Faculty Fellowship. Office of STEM Engagement*
Funder: NASA, \$205,957.76. Award Period: 1/2022 – 1/2023.

Martinez Ortiz, A. (PI), (2020-2021). *Development of digital learning badges and related evaluation: Developing Competitive Proposal Responses to NASA Opportunities and Understanding Government Contracts.*

Funder: NASA, \$14,976. Award Period: 5/2020 – 8/2021. NASA OSTEM/MUREP supplement to collaborative agreement EPDC-2

Martinez Ortiz, A. (PI), (2020-2021). *Development of NASA Aerospace missions, 'Google Expedition Journeys' utilizing AR/VR and Computer Science.*

Funder: NASA, \$31,920. Award Period: 5/2020 – 8/2021. NASA OSTEM/MUREP supplement to collaborative agreement EPDC-2

Martinez Ortiz, A. (PI), (2019-2021). *Texas State NASA STEM Engagement & Educator Professional Development Collaborative (EPDC-2).*

Funder: NASA, \$6,020,016.

Award Period: 10/2019 – 9/2021. NASA OSTEM/MUREP supplement to collaborative agreement EPDC-2. Project website: <https://www.txstate-epdc.net/>

Martinez Ortiz, A. (PI), Rodriguez Amaya, Laura (Co-PI), (2019-2020). FAMA 2- Tri-Region Future Aerospace Engineers And Mathematicians Academy, Grant# NNX15AW25A.

Funder: NASA, \$324,000. Award Period: 10/2019 – 9/2020

NASA MUREP Aerospace Academies-Cohort 2 Funding (MAA-2)

Project website: <https://www.txstate.edu/FAMA/>

Martinez Ortiz, A. (PI), Huling, L. (Co-PI), (2015-2019). FAMA 1- Future Aerospace Engineers and Mathematicians Academy, Grant# NNX15AW25A.

Funder: NASA, \$399,000. Award Period: 10/2015 – 9/2019

NASA MUREP Aerospace Academies-Cohort 1 Funding (MAA-1)

Project website: <https://www.txstate.edu/FAMA/>

Martinez Ortiz, A. (PI), Sriraman, V., Talley, K., Smith, S., (2015-2018). The Engineering Education Maker Identity Project.

Funder: National Science Foundation, \$300,000.

Award Period: 10/2015 – 9/2018

Project website: <https://news.txstate.edu/inside-txst/2019/bobcat-made.html>

Huling, L. (PI), **Martinez Ortiz, A.** (Co-PI), (2015-2019). STEM Pre-Service Teacher Summer Educator Institutes.

Funder: NASA, \$2,900,000. Award Period: 10/2015 – 9/2019

NASA MUREP Educator Institutes (MEI)

Project website: https://www.nasa.gov/sites/default/files/atoms/files/2018_mei.pdf

Martinez Ortiz, A. (PI), Huling, L. (Co-PI), (2014-2019). Texas State NASA STEM Educator Professional Development Collaborative (EPDC).

Funder: NASA MUREP, \$15,000,000.00 Award Period: 10/2014 – 9/2019

NASA EPDC

Project website: <https://www.txstate-epdc.net/>

Talley, K. (PI), **Martinez Ortiz, A.**, Smith, S. (Co-PIs). Texas State STEM Rising Stars.

Funder: National Science Foundation- DUE grant, \$75,000. Award Period: 9/2014 – 8/2017.

Aslan, S. (PI), **Martinez Ortiz, A.**, et al. (Co-PIs). A BRIDGE Program to Engage, Sustain and Empower Women and Minorities in STEM.

Funder: US Department of Agriculture STEM grant, **\$54,000.**

Award Period: 8/2014 – 8/2016.

Asiabanpour, B (PI), **Martinez Ortiz, A.**, Aslan, S., Jimenez, J., Salamy, H. et. al. (Co-PIs). REENERGIZE: Recruitment and Retention of Students in STEM Programs through a RenewableEnergy Research and Education Partnership with Five Minority Institutions.

Funder: U.S. Department of Education, MSEIP grant, **\$607,000.**

Award Period: 8/2014 – 8/2017.

Martinez Ortiz, A. (PI), Close, E. W., Guirguis, M. S., Talley, K. G.Novoa, C., Huling, L. (Co-PIs), (2014-2019). Texas State STEM Rising Stars.

Funder: National Science Foundation- ImprovingUndergraduate STEM Education (IUSE), **\$1,500,000.**

Award Period: 1/2014 – 8/2019.

Funded Internal Grants and Contracts:

Martinez Ortiz, A. (PI). Impact of Engineering and Mathematics learning for Elementary students in a Latino Community Summer Program- Little Engineers.”

Funder: Texas State University, Research Grant, **\$5,000.** Award Period: 1/2014 -8/2014.

Martinez Ortiz, A. (PI). Department of Curriculum and Instruction Scholar/Mentor program Scholarship review with Dr. Ruben Garza.

Funder: College of Education, Mentoring Grant, **\$1,000.** Award Period: 1/2014 -8/2014.

Martinez Ortiz, A. (PI). Research and Development of Engineering Learning Assessment Instruments Supporting Engineering Technology Students’ Success through Problem-Based Learning.

Funder:Texas State University, Research Grant, **\$6,712.** Award Period: 1/2013 -8/2013.

Martinez Ortiz, A. (PI). Department of Curriculum and Instruction Scholar/Mentor program Scholarship review with Dr. Lori Assaf.

Funder: College of Education, Mentoring Grant, **\$1,000.**Award Period: 1/2013 -8/2013.

Martinez Ortiz, A. (PI). Department of Curriculum and Instruction Scholar/Mentor program Scholarship review with Dr. Leslie Huling.

Funder: College of Education, Mentoring Grant, **\$1,000.** Award Period: 9/2012 -12/2012.

Martinez Ortiz, A. (PI). Alkek Library New Faculty Startup Funds.

Funder: Alkek Library, \$1,000. Award Period: 9/2012 -12/2012.

Fellowships, Awards, Honors:

Awarded - The 2024 The Women in Engineering Pro-Active Network (WEPAN) Educator's Award for excellence and innovation in STEM education work for girls and/or women.

Awarded- 2021-2024 Microsoft Endowed Professor of Engineering Education. The Klesse College of Engineering and Integrated Design. The University of Texas at San Antonio.

Awarded- The 2020 American Society of Engineering Education-GSW Section. Outstanding Service Award. Sponsor: Dr. Vedaraman Sriraman

Nominated – The 2020 Harold W. McGraw, Jr. Prize in Education. The McGraw Prize has celebrated innovation in education by recognizing outstanding individuals who have dedicated themselves to improving education and whose accomplishments are making a huge impact. [*Not selected*]. Sponsor: Dr. Michael O'Malley

Selected- A 2018/2019 Speaker for the Faculty Speaker Series at Texas State University's Round Rock Campus. Sponsor: Dr. Edna Aguirre Rehbein

Nominated- The Excellence in Diversity Award (2016 Finalist). Texas State University. Sponsor: Dr. Ismael Amaya

Selected- AERA Division K New Faculty Fellow and AERA Pre-conference (2015). Sponsor: Dr. Leslie Huling

Selected- The National Multidisciplinary AAHHE/Ford Faculty Fellow (2013). American Association of Hispanics in Higher Education/Ford Foundation. Sponsor: Dr. Patrice Werner

II. TEACHING

Teaching Honors and Awards:

Texas State Alumni Association Teaching Award of Honor, 2020

Graduate Faculty of the College of Science and Engineering by courtesy, Texas State University (August 2018 – present; appointed by the provost upon faculty recommendation based on teaching and research activities)

Courses Taught:

University of Texas at San Antonio

EGR 6973: Special Problems Course: Becoming an Engineering Educator (Summer 22/ 23; Spring 24)
EGR 6991: Research Seminar Course (Spring 2024)

Texas State University

Tech 5384 Problems in Technology (Fall 2020)
Tech 5390: Research in Technology (Spring 2019/ Fall 2019/ Spring 2020)
Tech 3364: Engineering Quality Assurance (Fall 2018)
US1100: University Seminar—Engineering/Engineering Technology Students (Fall 2015)
C&I 5304: Teaching Mathematics and Science in the Elementary Classroom
(Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014)
C&I 5303: Teaching Mathematics in the Integrated Elementary Classroom (Summer 2013)

Framingham State University

PRDV78914: Developing Instructional Materials for the Classroom (Fall 2005)
PRDV78917: Using Technology in Middle/High School Physical Sciences and Math Classrooms
(Spring 2006)

Graduate Theses/Dissertations or Exit Committees

Mr. Olatunji Godo (Qualifying Exam Chair/ Dissertation Chair). PhD program Curriculum & Instruction Program (2024-2025). University of Texas at San Antonio. San Antonio, Texas.

Ms. Deana Flood (Qualifying Exam Committee Member). PhD program, Curriculum & Instruction Program (2024-2025). University of Texas at San Antonio. San Antonio, Texas.

Mr. Swapneel Thite. PhD, Engineering Education Program (11/ 2023).
The University of New South Wales. Sydney, Australia.

Mr. Saul Cepeda. PhD. PhD, Curriculum & Instruction Program (12/ 2023).
University of Texas at San Antonio. San Antonio, Texas.

Courses Prepared and Curriculum Development:

- Developed a unique adaptation of a visual spatial reasoning program called the *Rising Stars VizStars Program* (Fall 2015/Spring 2016). Led in the team development of a six-week program to support visuospatial reasoning skills for students pursuing undergraduate degrees in science, mathematics, computer science, engineering, and engineering technology. Delivered focused talks and coordinated the curriculum and instruction guidelines for the rest of the program.
- Developed, Designed and Delivered Integrated Robotics Lessons: ED2120 and C&I 5304 (November)
- Developed the course curriculum for a special section of US1100 University Seminar, Introduction to Engineering/Engineering Technology (Fall 2015)

- Developed the *Engineering is Elementary* national integrated Elementary Science and Engineering Curriculum (2003-2005). Served as the creative engineer and curriculum developer of this NGSS-based integrated Elementary Science and Engineering Program. Developed the curriculum concept, framework, and pilot materials for Massachusetts K–5 students. Pre-engineering lessons are connected to the elementary science curriculum by integrating literacy into the program in the form of original informational storybooks and supporting engineering design-based activities. Coordinated an in-classroom proof of concept program. This program received NSF funding and is now used in over 50 states affecting more than 32,000 teachers and 2.5 million students.

Funded External Teaching Grants and Contracts:

Martinez Ortiz, A. (PI) (2020). *Challenge-Based Learning in Engineering and Engineering Education*. Funder: Instituto Tecnológico y de Estudios Superiores de Monterrey. México City, México. (\$2,500.00).

Martinez Ortiz, A. (PI) (2019). *Women in Engineering- Focusing on International Collaboration in Engineering Education*. Funder: The University of New South Wales. Sydney, Australia. (\$5,000.00).

Selected Professional Development in Leadership in Higher Education:

2024 Women of Color in STEM Leadership Development in Higher Education –LA, CA. March 3-6, 2024. Invited by Director of this NSF-funded initiative to join a special cohort of women leaders in science and engineering at Institutions of Higher Education across the United States.

2021 Howard University, Executive Certification in Diversity Coaching- Washington DC. June 14-18, 2021. Nominated to participate in an exclusive program designed for executives and professionals who want to develop successful coaching competencies, diversity and inclusion integration, and leadership skills for use with individuals, teams, or an entire organization. The program is presented by Howard University faculty in partnership with Coach Diversity Institute

2020 Yale School of Management, Women's Leadership Program- New Haven, CT. February 23-29, 2020. Nominated to participate in a women's leadership program that recognizes the unique challenges women face in the workplace as well as the unique value and perspective women contribute. Yale faculty lead a wide range of interactive and experiential learning sessions proven to enhance women's leadership behaviors. Participants built awareness of decision-making biases, learned how to create high-performing teams, negotiated win-win outcomes, managed crises, drove innovation, and created an authentic leadership style.

2017 UC Berkeley-Executive Leadership Academy (ELA) Berkeley, CA. July 9-15, 2017. Nominated to participate in this program, designed for individuals from all backgrounds, who are currently serving in administrative positions in higher education, and who are interested in preparing themselves for appointments to executive positions such as dean, vice president,

provost, president, and chancellor. This intensive training experience was guided by a select faculty team, comprised of over 25 senior-level higher education executives. The team focused on topics related to shifts in higher education and higher education leadership, changing funding sources and expectations, new requisite multicultural competencies, risk management, governing board relations, fundraising, and many more. The intent of this Academy was to prepare current and future leaders to appreciate the multicultural and global dynamics of higher education by promoting key critical thinking skills, leadership, and strategic planning for higher education officials.

III. SERVICE

Institutional- University

- Member, Texas State University Faculty Senate Budget Committee for 2020/2021. As a member, I help to examine the annual budget and the financial report published by the University and report significant facts and recommendations to the Faculty Senate. The committee is comprised of one faculty member per college, plus one Library representative.
- Member, Texas State University International Advisory Committee in 2020/2021. The mission of the International Advisory Council (IAC) is to foster university-wide collaboration in international activities - guided by a commitment to diversity of people and ideas, as well as a global perspective. The IAC will provide a broad-based, participatory framework for the consideration of international initiatives, opportunities, and projects. The IAC will also provide input to the office of International Affairs on specific matters relating to comprehensive internationalization.
- Invited member of the University Internal Review Board (IRB). Texas State University. Led by Dr. Denise Gobert (2017–2020)
- Invited member of the University think-tank “Interdisciplinary Innovation to Improve STEM Education and Research.” Texas State University. Led by Dr. Richard Boehm (Professor) and Jesse H. Jones (Distinguished Chair) in Geographic Education (2014–2016)
- Member of the Texas State University Hispanic Policy Network. Presented at the HPN Spring Symposium (April 2013); Supported the Hispanic Freshman Reception (September 2013). (2012–2016)
- Coordinating Committee Member. Texas State University Women in Science and Engineering (WISE) Conference (2013)
- Core Team Member of the Texas CCRI Mathematics Faculty Collaborative led by the Texas State University System (2012)

Institutional- College

- 2024 College Executive Advisory Committee- Member- UTSA KCEID
- Team Lead, M.S. in Engineering Education program proposal development. (2021-2023)
- Executive Director, LBJ STEM Institute for Engineering Education and Research. Leadership of the LBJ Institute Research Fellowes Cohorts 1 and 2 (2015- 2020)
- Executive Director, LBJ STEM Institute for Engineering Education and Research. Leadership of Graduate Student Researcher program development/launch of first annual LBJ STEM Institute OpenHouse (2015)
- Coordinator and Designer, the Bobcat Made Maker Space lab with “open hours” for university students to practice creative making and engineering design. (2015)
- Director, LBJ STEM Institute for Engineering Education and Research, Leadership of Research Fellow Program Establishment (2014)
- Director, LBJ STEM Institute for Engineering Education and Research, Leadership of Strategic Development Activities (2014)
- Director, LBJ STEM Institute for Engineering Education and Research, Leadership of Physical Space Organization (2013)
- Reviewer, College of Education, Scholarship Selection Committee (2014)
- Reviewer. College of Education, Scholarship Selection Committee (2013)

Institutional Department/School

- 2024 Departmental Faculty Review Advisory Committee (DFRAC) Member– UTSA Department of Biomedical Engineering and Chemical Engineering.
- 2024 Committee Lead: Library Liaison – UTSA Department of Biomedical Engineering and Chemical Engineering.
- 2024 Search Committee Member: UTSA KCEID Dean Search Committee Member
- 2024 Search Committee Member: UTSA Faculty Search Committee for Aerospace/Mechanical Engineering Department
- 2023 Departmental Faculty Review Advisory Committee (DFRAC) Member– UTSA Department of Biomedical Engineering and Chemical Engineering.
- 2023 Department Annual Review Process Committee Chair – UTSA Department of Biomedical Engineering and Chemical Engineering.

- 2023 Search Committee Member: UTSA Faculty Search Committee for Chemistry Department (led to one new hire).
- 2022 Search Committee Chair: UTSA PREP Search Committee for Associate Director (led to one new hire).
- 2022 Search Committee Chair: UTSA PREP Search Committee for Senior Events Manager (led to one new hire).
- 2020 Search Chair: Job Search Committee for LBJ Institute Grant Specialists (led to two new hires).
- 2019 Search Chair: Job Search Committee for LBJ Institute Grant Specialists (led to one new hire).
- 2016 Search Chair: Job Search Committee for LBJ Institute Faculty of Practice (led to one new hire).
- 2014 Search Chair: Job Search Committee for LBJ Institute Faculty of Practice (led to 12 new hires).

National Leadership Service Roles:

- **Advisory Council Member, Penn State University-Youth Engineering Solutions.** NSF Funded Pre-Engineering Curriculum Initiative (2021- 2025).
- **Steering Committee Member, the Engineer Girl project and website** - a service of the National Academy of Engineering (NAE) and the NAE Committee on the Diversity of the Engineering Workforce. The NAE also sponsors engineering programs aimed at meeting national needs, encourages education and research, and recognizes the superior achievements of engineers. The purpose of the NAE is to promote the technological welfare of the nation by marshaling the knowledge and insights of eminent members of the engineering profession (invited member for 3 years: 2019-2022).
- **Elected Member at Large, American Society for Engineering Education,** Minorities in Engineering Division (2014–2016).
- **Co-Editor, Todos-Mathematics for All Newsletter.** Todos-National Mathematics for All Professional Organization (2014–2016).
- **Advisory Board Member, NSF AISL Grant:** Informal Community Science Investigators (iCSI): Next Generation Engagement for Informal Science Institutions. An NSF funded project promoting botanical, zoological, and ecological learning. Partners include MIT, The Missouri Botanical Garden, The San Diego Zoo and The Red Butte Botanical Garden. 2013–2016
- **Scholarship Director, Society of Hispanic Professional Engineers.** Austin, TX (2012–2014)

- **Working Committee Member, National Academy of Engineering (NAE).** Defining Standards for Professional Development for K–12 Teachers of Engineering. 2012–2015.

Engineering Education Scholarship Reviewer:

- American Journal of Engineering Education.
- American Society for Engineering Educating
- IEEE Frontiers in Education
- Issues in Teacher Education

National Science Foundation Reviewer:

- Invited Proposal Reviewer for the National Science Foundation, Division of Graduate Education.
- Invited Proposal Reviewer for the National Science Foundation, Division of Research on Learning in Formal and Informal Settings (DRL).

Membership in Professional Organizations:

- American Association for the Advancement of Curriculum Studies (AAACS)
- American Educational Research Association (AERA)
- American Society of Engineering Educators
- Association of American Colleges & Universities
- Association of Teacher Educators
- IEEE- Frontiers in Education
- International Association for the Advancement of Curriculum Studies (IAACS)
- Great Minds in STEM
- Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- Society of Women Engineers

Community Outreach:

- PREP Summer Camp- Developed a 5-week summer camps in pre-engineering and mathematics for San Antonio middle and high school students (450 students expected). Camp to be held at four college campuses in San Antonio (2024). [*Planned for June-July, 2024*]
- PREP Summer Camp- Developed a 5-week summer camps in pre-engineering and mathematics for San Antonio middle and high school students (365 students). Camp to be held at four college campuses in San Antonio (2023).
- Biomedical Engineering Pre-Engineering curricular program developed and carried out as two workshops for fifth grade students (25 students) as a curriculum pilot for a future grant-funded program. Camp held at the Mark Twain Dual Language Academy (2023).
- PREP Summer Camp- Developed and carried out a 5-week summer camps in pre-engineering and mathematics for San Antonio middle and high school students (310 students). Camp held at three college campuses in San Antonio (2022).

- STEM Camp Coordinator- Developed and led nine 1-week summer camps in pre-engineering and mathematics for SMCIS 3rd–8th grade students (200 students). Camp held at the Centro CulturalHispano de San Marcos (2016).
- STEM Camp Coordinator- Developed and led three 1-week summer camp in pre-engineering and mathematics for SMCIS 3rd, 4th, and 5th grade students (75 students). Camp help at the CentroCultural Hispano de San Marcos (2015).
- STEM Camp Coordinator- Developed and led two 1-week summer camp in pre-engineering and mathematics for SMCIS 3rd and 4th grade students (50 students). Camp help at the Centro CulturalHispano de San Marcos (2014).
- STEM Camp Coordinator- Developed and led a 1-week summer camp in pre-engineering and mathematics for SMCIS 3rd grade students (25 students). Camp help at the Centro Cultural Hispanode San Marcos (2013).
- STEM Afterschool Program Coordinator- Developed and led a six-session event of Engineering Family Nights at Blazier Elementary School for the area community including teachers, families,and students (2013)
- Leadership Council Member- Centro Cultural Hispano de San Marcos. Organization with a mission toserve as a community beacon for the preservation, development, promotion, and celebration of the Hispanic arts, culture, heritage, and values through education (2013).
- Advisory Board Member: Con Mi Madre. Organization to support Latina girls’ social development andeducation in Austin, TX (2011).
- Advisory Board Member and co-PI: CHISE, Pre-College Science and Engineering Program. Chicago Public Schools, Chicago, IL (2009).