
Elsa Yvonne Quiroz Villa

Center for Education Research & Policy Studies and Office of Research & Sponsored Projects
The University of Texas at El Paso [UTEP]
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EDUCATION

New Mexico State University, Las Cruces, NM

Ph.D., Curriculum & Instruction, 2010

Dissertation Title: *Interrupting the Formation of Teacher Identities: Using Inquiry to Shift From Teacher-Centered to Learner-Centered*

The University of Texas at El Paso, El Paso, TX

M.A., Teacher Education, 2006

M.S., Computer Science, 1991

B. S., Mathematics, 1967

PROFESSIONAL EXPERIENCE

Director, Center for Education Research & Policy Studies, College of Education, UTEP

- August 2015 – Present
- Responsibilities: Support all grant funded projects in the College through space provision, budget and accounting services, grant writing/review, and other supportive services
- Accomplishments: PI, *Developing Evidence-Based Learning Communities in STEM Gateway Courses: Increasing Persistence and Timely Completion of STEM*, Minority Science and Engineering Improvement Program (MSEIP), U.S. Department of Education, 2016-2019; co-PI, *Broadening Participation in Engineering: A Qualitative Study on Latina/o Persistence in and Beyond the Degree*, National Science Foundation, 2017-2020; PI *Improving Elementary STEM Education through Inquiry-Based Curriculum*, The Boeing Company, 2015-2016; contributed in the increase in grant submissions from and awards to faculty in the UTEP College of Education.

Research Assistant Professor, Office of Research & Sponsored Projects, UTEP

- August 2014 – Present
- Responsibilities: As a member of the proposal development team, support faculty and staff in developing and submitting successful grant proposals.

Special Assignment, College of Education, UTEP

- January 2015 – August 2015
- Responsibilities: Increase grant proposal submissions, facilitate intra-college and inter-university collaborations with an aim of increasing research productivity
- Accomplishments: Increase in grant development activity led to the appointment of director of the Center for Education Research & Policy Studies

Assistant Professor of Practice, Department of Teacher Education, UTEP College of Education

- August 2014 – December 2014
- Responsibilities: Teach elementary, middle, and secondary preservice teachers in mathematics and science methods and student teaching courses.

Research Assistant Professor and Co-Director, Center for Research in Engineering & Technology Education, UTEP College of Engineering

- June 2011 – August 2014
- Responsibilities: Co-lead development of graduate programs in engineering education; co-develop leadership engineering undergraduate program; co-build

- comprehensive research agenda with cross-disciplinary research associates; co-develop research proposals to increase engineering education knowledge base.
- Accomplishments: PI *Latinas in Computer Science and Engineering: A Qualitative Study Examining Identity and Agency for Resilience and Persistence*, National Science Foundation, 2012-2016; PI, *Building Capacity for Preparing Teacher Engineers for 21st Century Engineering*, National Science Foundation, 2012-2014; PI, *Hispanic Engineering Leadership Institute (HELI)*, Minority Science and Engineering Improvement Program (MSEIP), US Department of Education, 2011-2015; PI *Improving Elementary STEM Education through Inquiry-Based Curriculum*, The Boeing Company, 2012-2013, 2013-2014, 2014-2015; co-PI, *Developing Metacognitive Learners*, Minority Science and Engineering Improvement Program (MSEIP), US Department of Education, 2013-2017.

Research Associate, New Mexico State University, Las Cruces, NM

- Department of Curriculum & Instruction
- Responsibilities: Designed and developed science/education curriculum; conducted research and co-wrote scholarly papers; taught multicultural education course to pre-service teachers
- January 2010 – May 2011

Lecturer, The University of Texas at El Paso, El Paso, TX

- August 2005 – August 2010
- Department of Teacher Education
- Responsibilities: Taught elementary science and mathematics methods; contributed to securing funding from The Boeing Company to support pre-service teacher development

Director, The University of Texas at El Paso, El Paso, TX

- January 1994 – August 2005
- Engineering Programs Office, College of Engineering
- Responsibilities: Design and implement recruitment and retention programs; secure funding to support engineering programs for recruitment and retention, such as summer camp and scholarship support; support college-wide activities, such as pre-graduation ceremonies and accreditation site visits.
- Accomplishments: Led numerous grants funded by state and federal agencies, corporations, and foundations including Hewlett Packard Company, Agilent Technologies, Environmental Protection Agency through the Southwest Center for Research & Policy, Southwestern Bell Corporation, NASA, Naval Research Laboratories, General Motors, The Boeing Company, IBM, Texas Instruments, Intel, NSF, and JPL relating to retention of minority engineering students, mathematics and science education reform, and pre-college outreach.

Instructor, The University of Texas at El Paso, El Paso, TX

- College of Science (mathematics)
 - 1995 - 1996
- College of Engineering (computer science, education, university studies seminar courses)
 - 1993 – 2005

Instructor, El Paso Community College, El Paso, TX

- Division of Mathematics and Science (mathematics)
- 1991 - 1993

Teacher, Ysleta Independent School District, El Paso, TX

- 7th grade mathematics, 8th grade science

- Fall 1974 – Spring 1976
- Fall 1967 – Summer 1970

Teacher, New Deal Independent School District, New Deal, TX

- High school mathematics, including algebra, geometry, pre-calculus, trigonometry
- 1970 - 1973

CERTIFICATIONS & AWARDS

Best Paper, 2014 International Sun Conference on Teaching and Learning, "Affinity Research Groups in Practice: Apprenticing Students in Research," El Paso, Texas, March 2014.

Secondary Education in Mathematics and Science, State of Texas.

Trainer, Cooperative Learning, Johnson & Johnson, University of Minnesota.

REFEREED JOURNAL PUBLICATIONS

Villa, E. Q., Wandermurem, L., Hampton, E. M., & Esquinca, A. (2016). Engineering education through the Latina lens. *Journal of Education and Learning*, 5(4), 113-125. Doi: 10.5539/jel.v5n4p113

Villa, E. Q., & Baptiste, H.P. (Winter 2014). Creating an equitable classroom environment: A case study of a preservice teacher learning what it means to 'do inquiry.' *Multicultural Education*, 25-32.

Villa, E.Q., Kephart, K., Gates, A.Q., Thiry, H., & Hug, S. (2013). Affinity Research Groups in practice: Apprenticing students in research. *Journal of Engineering Education*, 102(3), 444-466.

Kephart, K., **Villa, E.**, Gates, A. Q., & Roach, S. (Summer 2008). The Affinity Research Group Model: Creating and maintaining dynamic, productive, and inclusive research groups. *CUR Quarterly*, (28)4, 13-24.

REFEREED BOOK CHAPTERS

Villa, E. Q., Esquinca, A., Hampton, E., & Hsu, P.- L-. (Forthcoming). Navigating hurdles into and through undergraduate engineering and computer science studies. In T. T. Yuen, E. Bonner, & M. G. Arreguá (Eds.), *(Under)Represented Latin@s in STEM: Increasing Participation Through Education and the Workplace*. New York, NY: Peter Lang Publishing.

Esquinca, A., & **Villa, E. Q.** (Forthcoming). Mentoring Latino/a college students to act and talk like engineers. In T. T. Yuen, E. Bonner, & M. G. Arreguá (Eds.), *(Under)Represented Latin@s in STEM: Increasing Participation Through Education and the Workplace*. New York, NY: Peter Lang Publishing.

Glazewski, K. D., **Villa, E. Q.**, Burbano, L., Costa-Guerra, B., & Pacheco, R. (Forthcoming). Leadership implications for creative partnerships: Experiences of emerging agency, identity, and participation among Latinx children in an afterschool film program. *National Forum of Educational Administration and Supervision*.

Esquinca, A., Mein, E., **Villa, E. Q.**, & Monarrez, A. (2017). Academic biliteracy in college: Borderland undergraduate engineering students' mobilization of semiotic resources. In D. Palreyman & C. van der Walt (Eds.), *Academic Literacies: Multilingual Repertoires in Higher Education* (pp. 41-57). Bristol, UK and Blue Ridge Summit, PA: Multilingual Matters.

- Villa, E. Q.** (2017). Using in-depth interviews as a primary source of data for developing case studies. In B. Flett & F. Bronia (Eds.), *SAGE Research Methods Cases – Education*. London: Sage Publications, Ltd. DOI: <http://dx.doi.org/10.4135/9781473958043>.
- Gates, A. Q., **Villa, E. Y.**, & Salamah, S. (2014). Developing communities of practice to prepare software engineers with effective team skills. In L. Yu (Ed.), *Overcoming challenges in software engineering education: Delivering non-technical knowledge and skills* (pp. 52-70). Hershey, PA: IGI Global.
- Baptiste, H. P., & **Villa, E. Q.** (2012). Affirmative action. In J. Banks (Ed.), *Encyclopedia of Diversity in Education* (Vol. 1), (pp. 35-40). Thousand Oaks, CA: Sage Publications Inc. doi: 10.4135/978452218533.n13
- Baptiste, H. P., & **Villa, E. Q.** (2012). Title VII of the Civil Rights Act of 1964. In J. Banks (Ed.), *Encyclopedia of Diversity in Education* (Vol. 4), (pp. 2180-2182). Thousand Oaks, CA: Sage Publications Inc. doi: 10.4135/9781452218533.n90
- Neakrase, J., Baptiste, H. P., Ryan, A. N., & **Villa, E. Y.** (2012). "Science for all" through reflective interactions: Analyzing online instructional models, learning activities, and virtual resources. In U. Demiray, G. Kurubacak, & T. V. Yuzer (Eds.), *Meta-communication for reflective online conversations: Models for distance education* (pp. 102-118). Hershey, PA: IGI Global.
- Villa, E.Q.**, & Kephart, K. (2010). Using inquiry to teach inquiry: A preservice science education model with possibilities for developing Hispanic ELLs' academic discourse. In D. Sunal, C. S. Sunal, & E. L. Wright (Eds.), *Teaching science with Hispanic ELLs in K-16 classrooms* (pp. 201-231) Charlotte, NC: Information Age Publications, Inc.
- Villa, E. Q.**, Calderón, M., & Luna, R. (2009). Tomorrow's math and science teachers: Using action research in teacher preparation. In Hulett, E.C. (ed.), *Action research in the classroom*. New Mexico University Printing Services: Portales, NM.
- Gates, A., Roach, S., **Villa, E.**, Kephart, K., della Piana, C., & della Piana, G. (2009). *The Affinity Research Group Model: Creating and maintaining effective research teams*. John Wiley & Sons, Inc. and IEEE-CS Press.
- Jones, V. R. J., & **Villa, E. Q.** (2006). Researching and writing the literature review. In E. Hampton & S. Peregrino (Eds.), *Research for mutual understanding in diverse communities* (pp. 41-55). Dubuque, IA: Kendall/Hunt Publishing Company.
- Hampton, E., Peregrino, S., & **Villa, E. Q.** (2006). Requesting approval to conduct research: The institutional review board. In E. Hampton & S. Peregrino (Eds.), *Research for mutual understanding in diverse communities* (pp. 163-171). Dubuque, IA: Kendall/Hunt Publishing Company.

REFEREED CONFERENCE PUBLICATIONS

- Mein, E. L., Convertino, C., Esquinca, A., & Villa, E. Q. (Accepted). Transforming student learning in pre-calculus at a Hispanic serving institution on the U.S.-Mexico Border. 2018 Annual Meeting of the American Educational Research Association. New York, NY.
- Cross, K., Forin, T., Jain, A, McNair, L. D., Miletic, M., Mina, M., **Villa, E.**, & Ingram, E. L. (2017). Influencing culture and curriculum via revolution. *Proceedings of the 2017 Frontiers in Education Indianapolis*, October 20, 2017.
- Esquinca, A., **Villa, E. Q.**, Hampton, E., Ceberio, M., & Wandermurem, L. (2015). Latinas'

resilience and persistence in computer science and engineering: Preliminary findings of a qualitative study examining identity and agency. *Proceedings of the 2015 Frontiers in Education Conference*, El Paso, TX.

- Villa, E. Q.**, Esquinca, A., Mein, E., Hug, S., & Golding, P. (2015). An engineering student leadership model for 21st century engineering: Using a socio-cultural theory to inform practice. *Proceedings of the 2015 Frontiers in Education Conference*, El Paso, TX.
- Hug, S., **Villa, E. Q.**, Golding, P., & Gandara, G. (2015). Work in progress: 'Learning to learn': Creating engineering classrooms for deep understanding. *Proceedings of the 2015 Frontiers in Education Conference*, El Paso, TX.
- Villa, E. Q.**, Hampton, E., Esquinca, A., Wandermurem, L., & Diaz, S. (2015). The fence builders: Case studies of Latinas constructing agentic selves toward studying engineering. *American Educational Research Association meeting*. Chicago, IL.
- Esquinca, A., Wandermurem, L., **Villa, E. Q.**, & Hampton, E. (2015). "Are you sure engineering is for me?" Latina engineering students' narratives of uncertainty. *American Educational Research Association meeting*. Chicago, IL.
- Esquinca, A., **Villa, E. Q.**, Mein, E., & Monarrez, A. (2014). Bilingualism as a meaning-making resource for learning engineering. *Proceedings of the 2014 Frontiers in Education Conference*. Madrid, Spain.
- Esquinca, A., Wandermurem, L., Nuñez-Mchiri, G., & **Villa, E. Q.** (2014). *Latina engineering students' narratives of resilience*. Paper presented at the Annual Meeting of the American Educational Research Association, AERA, Philadelphia, PA.
- Hsu, P.-L., & **Villa, E. Q.** (2014). *Cultural resources mediating identity development of females in engineering and computer science*. Paper presented at the Annual Meeting of the American Educational Research Association, AERA, Philadelphia, PA.
- Villa, E. Q.**, Nuñez-Mchiri, G., Esquinca, A., Hampton, E., & Wandermurem, L. (2014). *Accumulating aspirational capital for Latinas to pursue and persist in engineering*. Paper presented at the Annual Meeting of the American Educational Research Association, AERA, Philadelphia, PA.
- Mein, E., Esquinca, A., Ortiz-Galarza, M., Gallardo, R., & **Villa, E. Q.** (2013). *Social and linguistic capital among transfronterizo engineering students on the US-Mexico border*. Paper presented at the 2013 Annual Meeting of the American Educational Research Association, AERA, San Francisco, CA.
- Esquinca, A., Mein, E., **Villa, E. Q.**, Ortiz-Gallardo, M., & Paez, C. (2013). Social and linguistic capital among transfronterizo engineering students on the US-Mexico border. Annual Meeting of the American Educational Research Association.
- Hug, S., Thiry, H., & **Villa, E. Q.** (2012). *Mastering new narratives in the computing fields: Latina counter narratives of research practice*. American Education Research Association Annual Meeting.
- Thiry, H., Hug, S., & **Villa, E. Q.** (2012). *Cultivating care: The Affinity Research Group model for mentoring Hispanic undergraduates*. Paper presented at the 2012 American Education Research Association Annual Meeting.
- Villa, E. Q.**, & Glazewski, K. (2011). *Expressions of emerging agency, identity, and participation among Latino children in an afterschool film program*. 2011 AERA Meeting.

- Villa, E. Q.** (2009). *Forging pathways to social justice: An emerging collective of educators democratizing traditional classrooms*. 2009 AERA Meeting.
- Hug, S., Thiry, H., Gates, A., **Villa, E.**, & Kephart, K. (2009). Developing the identity of a scientist: Situated learning theory as a framework for apprenticing Hispanics into scientific research. In *Proceedings of the ASEE Understanding Interventions that Broaden Participation in Research Careers*, Washington, D.C.
- Kephart, K., **Villa, E.**, Everett, L., & Pennathur, A. (2009). Cultivating authentic engineering discourse: Results of faculty development efforts. In *Proceedings of the American Association of Engineering Education Conference*.
- Roach, S. & **Villa, E.** (2008). Enhancing peer-led team learning through cooperative learning. In *Proceedings of the American Association for Engineering Education Conference*. Pittsburgh, PA.
- Kephart, K. & **Villa, E.Q.** (2008). Demonstrating sustainable success: Using ethnographic interviews to document the impact of the Affinity Research Group Model. In *Frontiers in Education Conference Proceedings*: Saratoga Springs, NY.
- Everett, L., Pennathur, A., Jones, V., Kephart, K., & **Villa, E.** (2007). Cultivating authentic engineering discourse: Transitioning from an NSF CCLI to a Phase 2 Project. In *Proceedings of the 2007 American Society for Engineering Education Annual Conference*: Hawaii.
- Roach, S., & **Villa, E.** (2007). Reaching out across disciplines: Learning from each other to produce more graduates in computer science. In *Second Annual Technology Workforce Development Workshop: Best Practices 2007*, 6-7.
- Everett, L., & **Villa, E.** (2006). Assessment results of multi-intelligence methods used in Dynamics. In *Proceedings of the 2006 American Society for Engineering Education Annual Conference & Exposition*.
- Everett, L., Pennathur, A., & **Villa, E.** (2006). The effect technology and a structured design problem have on student attitudes about theory in a dynamics class. In *Proceedings of the 2006 American Society for Engineering Education Annual Conference & Exposition*.
- Everett, L., & **Villa, E. Q.** (2005). Increasing success in a dynamics course through multi-intelligence methods and peer facilitation. In *Proceedings of the 2005 American Society for Engineering Education Conference & Exposition*: Portland, Oregon.
- Everett, L., Pennathur, A., & **Villa, E.Q.** (2006). The effect technology and a structured design problem have on student attitudes about theory in a dynamics class. In *Proceedings of the 2006 American Society for Engineering Education Annual Conference & Exposition*.
- Everett, L., & **Villa, E.** (2005). Increasing success in a dynamics course through multi-intelligence methods and peer facilitation. In *Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition*.
- Villa, E.**, Diaz-Rios, R.L., Stafford, S., & Gandara, G. (2001). K-16 partnerships: Casting a broad net for filling the critical gaps in engineering. In *Proceedings of the 2001 ASEE/IEEE Frontiers in Education Conference: Reno, Nevada*.

Morell, L., Toro, Z., **Villa, E. Q.**, Diaz-Rios, L., & Lloyd, S. (1999). Why are they still here? Findings from a preliminary study of Hispanic undergraduate women in engineering. In *Proceedings of the 1999 ASEE Conference*: Charlotte, NC.

Herrera, J.M., Stafford, S., **Villa, E.Q.**, & Piñon, S. (1997). Excellence in Technology, Engineering & Science (ExcITES): A collaborative model for pre-college outreach and recruitment. In *Proceedings for the Conference for Industry and Education Collaboration*, American Society for Engineering Education: Tampa, Florida.

Della-Piana, C., **Villa, E.Q.**, & Pinon, S.D. (1996). Using cooperative learning in a freshman summer engineering orientation program. In *Proceedings of the 1996 American Society for Engineering Education (ASEE) Annual Conference*: Washington, D.C.

TECHNICAL PUBLICATIONS

Kreinovich, V., Bernat, A., Villa, E., & Mariscal, Y., Parallel computers estimate errors caused by imprecise data. In V.M. Nesterov and B.M. Hecrepob (Eds.), *Interval computations*, 1991, No. 2, pp. 31-46. St. Petersburg, Russia: Institute for New Technologies.

Villa, E., Bernat, A., and Kreinovich, V., Estimating errors of indirect measurement on realistic parallel machines: routings on 2-D and 3-D meshes that are nearly optimal. In V.M. Nesterov and B.M. Hecrepob (Eds.), *Interval computations*, 1993, No. 4 (pp. 154-175). St. Petersburg, Russia: Institute for New Technologies.

Kreinovich, V., Bernat, A., Borrett, W., Mariscal, Y., & Villa, E. (1994). Monte-Carlo methods make Dempster-Shafer formalism feasible. In R.R. Yager, J. Kacprzyk, & M. Pedrizzi (Eds.), *Advances in the Dempster-Shafer theory of evidence* (pp. 175-191). New York: John Wiley & Sons, Inc.

EDUCATION CONFERENCE PRESENTATIONS

Esquinca, A., & **Villa, E.** "You are Leaders": Latinx College Students Learning to Act and Talk Like Engineers. 14th Interamerican Symposium on Ethnography and Education, El Paso, UTEP, September 21, 2017.

Villa, E., & Moreno, E., "An Inquiry Pedagogical Approach for Fostering Autonomy," A Better Beginning Conference for Beginning Teachers, El Paso, UTEP, September 26, 2009.

Villa, E., Hill, C., Moreno, M., & Muñoz, M., "Preservice Teachers and Action Research: Connecting Theory with Practice in an Inquiry Classroom Environment," Conference for International Research in Cross-Cultural Learning and Education (CIRCLE), El Paso, Texas, July 2009.

Villa, E. "Forging Pathways to Social Justice: An Emerging Collective of Educators Redressing Traditional Classrooms. American Education Research Conference, San Diego, April 2009.

Villa, E., Baptiste, H.P., & Calderón, M., "Toward Social Justice for Tomorrow's Classrooms: A Prospective Model for Transforming Pre-Service Teacher Identities," National Conference, Association for Teacher Education, Multicultural Division. Dallas, Texas, February 2009.

Villa, E., & Baptiste, H.P., "Pre-Service Teachers Participating in and Developing Learning Communities: Possibilities for Creating Equity and Social Justice in Diverse Classrooms," National Association for Multicultural Education, New Orleans, Louisiana, November 2008.

Villa, E., Calderon, M., & Luna, R., "Pre-Service Teachers Participating In and Developing Mathematics and Science Learning Communities: Possibilities for Impacting Teacher

Preparation Programs," 1st Summer International Conference on Education, The University of Texas at El Paso (UTEP), July 2008.

Villa, E., Calderon, M., & Luna, R., "Tomorrow's Math and Science Teachers: Using Action Research in Teacher Preparation." Sixteenth Annual Action Research Conference. Center for Teaching Excellence. Taos, New Mexico, June 5-7, 2008.

Everett, L., Licon, M., & **Villa, E.,** "Learn to Distinguish Problems from Exercises and Experience a Problem-Based Lesson," 2005 Sun Conference on Teaching and Learning, El Paso, Texas, March 2005.

Solis, B., & **Villa, E.,** "You Can't Do It Alone: Students Collaborating to Excel," 2005 Sun Conference on Teaching and Learning, El Paso, Texas, March 2005.

Moya, J., Munter, J., Gonzalez, V., & **Villa, E.,** "Engineering Course Redesign: From Gatekeeper to Gateway," 2003 Frontiers in Education Hewlett Packard Company Symposium, Boulder, Colorado, November 2003.

Gonzalez, V., Moya, J., Munter, J., & **Villa, E.,** "Cooperative Learning and Mobile Classrooms: Collaboration and Course Redesign," Sun Conference on Teaching and Learning, El Paso, Texas, March 2003.

Moya, J., Munter, J., & **Villa, E.,** "Redesigning Engineering Programs: Impacts of the Critical Revisioning of Engineering/Computer Science Coursework at a Predominantly Hispanic-Serving Institution," National Conference On Race and Ethnicity, New Orleans, Louisiana, May 2002.

Mijarez, M., **Villa, E.Q.,** & Diaz-Rios, L., "Looking Ahead to ABET 2000: Creating Innovation in a MAES Student Chapter through the Cooperative Approach," MAES Symposium Proceedings, January 2000 and American Society for Engineering Education Conference Poster Session, St. Louis, Missouri, June 2000.

Diaz-Rios, L. & **Villa, E.Q.,** "TAME El Paso's Science Advisors Program: A New Paradigm for Industry Partnerships in Education," Conference for Industry and Education Collaboration, American Society in Engineering Education, San Jose, California, January 1996.

Villa, E.Q., "Cluster Study Groups in College Level Mathematics," Expanding Minority Opportunities Conference, Arizona State University, Tempe, Arizona, January 1995.

TECHNICAL PRESENTATIONS

Villa, E.Q. (1992). Estimating errors of indirect measurement on realistic parallel machines: routings on 2-D and 3-D meshes that are nearly optimal. International Conference on Interval Computation. Lafayette, Louisiana.

PROFESSIONAL ACHIEVEMENTS

Current Grants

- Principal Investigator, "Developing Evidence-Based Learning Communities in STEM Gateway Courses: Increasing Persistence and Timely Completion of STEM," U.S. Department of Education, with Drs. C. Mariani, E. Mein, A. Esquinca, C. Convertino, P. Golding, and A. Duval, October 2016 to September 2019, \$689,243.
- Co-Principal Investigator with PI Alberto Esquinca and co-PI Erika Mein, "Broadening Participation in Engineering: A Qualitative Study on Latina/o Persistence in and Beyond the Degree," National Science Foundation, March 2017 to February 2020, \$456,076.

- Senior Personnel with PI Ann Gates, "IUSE/PFE:RED: Toward a Model of Change for Preparing a New Generation for Professions in Computer Science," National Science Foundation, July 2015 to June 2020, \$1,433,781.
- Senior Personnel with PI Ann Gates, "INCLUDES: Building Upon CAHSI's Success to Establish a Networked Community for Broadening Participation of Hispanics in Graduate Studies," National Science Foundation, January 2017 to December 2018, \$299,425.

Recently Expired Grants

- Co-Principal Investigator, "Developing Metacognitive Learners to Persist and Achieve Timely Completion of Engineering," U.S. Department of Education, with Drs. Peter Golding (PI) and Erika Mein, October 2013 to September 2017, \$491,611.
- Principal Investigator, "The Hispanic Engineering Leadership Institute (HELI): A Model for 21st Century Engineering," October 2011 to September 2015, \$615,015.

Sampling of past grants:

- Principal Investigator, "Improving Elementary STEM Education through Inquiry-Based Curriculum," The Boeing Company, September 2015 to August 2016, \$45,000.
- Principal Investigator, "Improving Elementary STEM Education through Inquiry-Based Curriculum," The Boeing Company, September 2014 to August 2015, \$45,000.
- Principal Investigator, "Improving Elementary STEM Education through Inquiry-Based Curriculum," The Boeing Company, with Drs. Eric Hagedorn, William Medina-Jerez, and Ms. Debra Little, September 2013 to August 2014, \$45,000.
- Principal Investigator, "Building Capacity for Preparing Teacher Engineers for 21st Century Engineering," **National Science Foundation**, with Drs. Eric Hagedorn, David Carrejo, and Patricia Nava, September 2012 to August 2014, \$287,703.
- Co-Principal Investigator, "CCLI Phase 2: Building Support Structures for Full Adoption of the Affinity Research Group Model," **National Science Foundation**, with Drs. Ann Q. Gates, Steve Roach, and Kerrie Kephart, September 2009 to August 2013, \$399,457.
- Principal Investigator, "Improving Elementary STEM Education through Inquiry-Based Curriculum," The Boeing Company, with Drs. Eric Hagedorn, William Medina-Jerez, and Ms. Debra Little, September 2013 to August 2014, \$50,000.
- Co-Principal Investigator, "The Affinity Research Group Model," **National Science Foundation**, with Drs. Ann Q. Gates and Steve Roach, August 2005 to May 2010, \$304,811.
- Senior Personnel, "Cultivating Authentic Discourse for the 2020 Engineer," **National Science Foundation**, Dr. Louis Everett, PI, September 2006 to May 2010, \$500,000.
- Principal Investigator, "HP Scholars Summer Internship Transition Program," Hewlett Packard Company, \$49,962.98, 2008; \$35,900, 2007; \$50,809, 2006.
- Co-Principal Investigator, "Improving Elementary Math and Science through Inquiry Curriculum," with Dr. Elaine Hampton, Boeing, \$5,000; 2007, 2008, 2009.
- Senior Personnel, "Reaching Out Across Disciplines: Learning from Each Other to Produce More Graduates in Computer Science," Texas Higher Education Coordinating Board, Dr. Steve Roach, PI, March 2006 – August 2008, \$284,882.

- Co-Principal Investigator, "Creating Learning Communities at UTEP to Increase Throughput," Texas Engineering Technology Consortium, with Drs. Benjamin Flores and Judith Munter, 2003-2005, \$139,767.
- Principal Investigator, The Xerox Foundation, Scholarships and Outreach at UTEP, 1998-Present; from \$3,500 in 1998 to \$11,500 in 2004.
- Principal Investigator, "Engineering Retention Initiative Symposium," Hewlett Packard Company, 2003-04, \$225,000.
- Principal Investigator, "Minority Program for Excellence in Engineering," General Motors Foundation, 1995 to 2005, \$50,000 annually.
- Co-Principal Investigator and Coordinator, NSF Computer Science, Engineering & Mathematics Scholarship Program, "Scholars for the Engineering Workforce of the Future," with Drs. Rafael Gutierrez, Roberto Osegueda, and Helmut Knaust, 2003 to 2005, \$400,000.
- Co-Principal Investigator, "Redesign of Critical Gatekeeper Courses," with Drs. Louis Everett and John Moya, The Boeing Company, 2002, \$40,000.
- Principal Investigator, "Diversity in Education Initiative," Hewlett Packard Company/Agilent Technologies, 1997-2002, with El Paso Independent School District, \$250,000.
- Principal Investigator, "Peer Study Groups in Algebra at El Paso Community College," Coalition to Increase Minority Degrees, Arizona State University, 1993, \$2,500.

Workshop Leader

Affinity Research Group Model, University of Buffalo, February 2009; Auburn University, August 2008; Consortium for Advancing Hispanic Serving Institutions (CAHSI), Miami, October 2008; Texas A&M Corpus Christi, June 2007; SACNAS, Dallas, October 2010.

Peer-Led Team Learning, Texas A&M Corpus Christi Computer Science Faculty and Students, June 2007, Corpus Christi, Texas.

"Creating Learning Opportunities – Building Active Learning Problems to Create Conceptual Conflict for Enduring Understanding," Frontiers in Education Conference, October 2007, Milwaukee, Wisconsin.

Teaching Enrichment Institute for UTEP Engineering Faculty, September 2004 to present

Mathematics Cooperative Learning Institute, Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Juárez, México, December 2004.

ABET Strategic Planning, UTEP College of Engineering, The University of Texas at El Paso, 2001.

Resource Team Member

Texas Leadership Institute for K-8 Science Education, The American Physical Society/Teacher-Scientist Alliance Institutes, Austin, Texas, 1999.

Invited Presenter

Panel on Gender, Diversity, and Competencies in STEM Pathways, The National Academies' Symposium on Assessing Hard-to-Measure Cognitive, Intrapersonal, and Interpersonal Competencies, Washington DC, December 2015.

National Center for Women & Information Technology, "Fostering Gender Equity Using Affinity Research Groups," Boulder, Colorado, May 2007.

Engineering Strategy Workshop, Kentucky Council on Postsecondary Education, Louisville, Kentucky, 2000.

Society for the Advancement of Chicanos and Native Americans (SACNAS) Conference, Keynote Speaker for K-12 Teachers, "Advancing K-16 Education: The Critical Crossroads," Albuquerque, New Mexico, October 2003.

PROFESSIONAL ACTIVITIES/SERVICE

Advisory Board Member, University of Texas Rio Grande Valley, NSF STEP grant (2014-present).

Invited Participant

Education Summit, "Quality Learning for All through Education for Sustainability," co-sponsored by National Association of Multicultural Education and Kappa Delta Pi, Cleveland, OH, November 13, 2016.

Invited Committee Member

ACM Education Board Retention Committee to address the issue of retention in 4-year, post-secondary CS education programs, specifically the retention of women and URM students in CS1 and CS2, November 2016 to present.

National Science Foundation (NSF) Panel Review Member, 2016, 2015, 2014, 2013, 2012, 2011, 2004, 2003, 2001, 1994.

Participant, Institutes – American Physical Society Scientist-Teacher Alliance Institute, Washington, D.C. 1999; Foundation Cooperative Learning (1994), Advanced Cooperative Learning (1996), Cooperative Learning Leadership (1999), Creative Conflict (2000), Meaningful and Manageable Assessment (2000), Leading the Cooperative School (2001) - University of Minnesota Cooperative Learning Center.

Session/Panel Moderator - 2002 Frontiers in Education Conference, Reno, Nevada; 2004 Frontiers in Education Conference, Savannah, Georgia.

Scientist Member, El Paso Independent School District Team, National Science Resources Center, Washington, D.C., 1997.

Founding Member – Informal Science Education Association of El Paso with Region XIX Education Service Center.

Textbook Reviewer – John Wiley & Sons publishers, mathematics methods textbooks, 2007.

Peer Reviewer – Interdisciplinary Journal of Problem-Based Learning, 2014, 2015; Frontiers in Education, 2012, 2013; ASEE Frontiers in Education Conference, 2009, 2001.

Invited Participant – Strategic Alliance, USA/Mexico, 2001.

Standing Committee Member – Committee on Transfer Issues, Texas Higher Education Coordinating Board, 1992-1993.

Grant Reviewer- Coalition to Increase Minority Degrees, Arizona State University, 1992 – 1999.

Committee Member – Tri-City Water Festival (2000-01), Recycle Day (2000), Earth Day (1998-99); Conference on Improving High School Achievement in Mathematics, Charles A. Dana

Center Texas Statewide Systemic Initiative (1999); Latino Initiative through GEM Consortium (2004 to present); Marker Paper Selection for Master Science Teacher certification, Texas Education Agency – Division of Educator Standards, Austin, March-2006; Committee to set passing score for Texas Examinations of Master Teachers Master Science Teacher EC-4 certification test, Texas Education Agency – Division of Educator Standards, July 2006; Teachers for a New Era, UTEP, Professional Development Sites committee, 2007 - present.

Advisory Committee Member – Latinos in Engineering Radio Series, Radio Bilingüe, 2002.

PROFESSIONAL ORGANIZATIONS

American Society of Engineering Education (ASEE), 1997 to present
American Education Research Association (AERA), 2008 to present
Golden Key International Honour Society, 2011 to present
National Science Teachers Association (NSTA), 2008 to present
National Council of Teachers of Mathematics (NCTM), 2008 to present
National Association for Research in Science Teaching (NARST), 2010 to present