Ramón Emilio Fernández
Marks Hall Room 12, 861 Bedford Road, Pleasantville, NY 10570 E-mail: rfernandez@pace.edu

Research

My research threefold: Primarily, I am carrying out a comprehensive quantitative analysis of the high school mathematics courses of New York City public schools. Second, in the broad area of STEM education, I concentrate on Mathematics and Engineering Education with emphasis on policy and pedagogical innovations. Lastly, I have research collaborations in the areas of "technology for social good", and "the role of the university in the innovation ecosystem. I am also interested in the pedagogical preparedness of prospective and in-service teachers of mathematics, and STEM doctoral students.

Education

Stony Brook University, Stony Brook, NY 11794
Ph.D. TPI with emphasis on Engineering Education, Management, and Policy Aug 2016
Thesis: The mathematics course-completion of Bronx County public high school students: Education policy implications.

Master of Arts in Hispanic Cultural Studies May 2013
Bachelor of Science in Pure Mathematics with emphasis on teacher Ed. May 2009
Bachelor of Arts in Hispanic Languages & Literature with Honors May 2009

Bronx Community College of CUNY, Bronx, NY 10453
Associate of Science in Mathematics Dec 2006

Industrial Polytechnic Institute of Santiago, Santiago, Dominican Republic
Associate of Applied Science Industrial Electronic Engineering Technology Aug 2002

Employment

Pace University, Pleasantville, NY 10570
Assistant Professor and **Coordinator of Developmental Mathematics**
Department of Mathematics, Dyson College of Arts and Sciences, Sept 2016

Stony Brook University, Stony Brook, NY 11794
Affiliated Faculty, Department of Technology and Society,
College of Engineering and Applied Sciences Oct 2016

Publications

Fernández, R.E., Ferguson, D. L. (September, 2017). Understanding current issues in research and education in science and technology: A framework of knowledge and action sharing between universities and science and technology parks*. World Technopolis Review, 6(1).* 2.1-2.9.

Fernández, R.E., Ferguson, D. L. (November 2016). Contemporary Issues in Research and Education in Science and Technology: A Growing Need for Knowledge and Action Sharing Between Universities and Science and Technology Parks. *Proceedings of the UNESCO-WTA International Training Workshop*. UNESCO-WTA Cooperative Project, 125-135, Daejon Metropolitan City, Republic of Korea.

Fernández, R.E., Ferguson, D. L., & Magsi, K. (September, 2016). Academic, industrial, and governmental collaborations to support innovation and entrepreneurship: Policies, programs, and practices that enhance regional competitiveness. *Proceedings of the 2016 Tangerang Selatan Global Innovation Forum*. UNESCO and the World Technopolis Association, Tangerang Selatan, Indonesia.

Fernández, R.E., Ferguson, D. L., & Magsi, K. (June, 2016). Technological innovation and entrepreneurship: Education, social good and economic development. *World Technopolis Review, 5(1),* 19-29.

Ferguson, D. L., & **Fernández, R. E.** (September, 2015). The Role of the University in the Innovation Ecosystem, and Implications for Science Cities and Science Parks: A Human Resource Development Approach. *World Technopolis Review, v.4, no.3,* 132-143*.*

Fernández, R. E. (July, 2015). An effective policy for high school to college transition: The case of Bronx County public high schools*. Proceedings of the 7th International Conference on Education and New Learning Technologies, EDULEARN15*. The International Academy of Technology, Education and Development (IATED), *7,* 349-357, Barcenlona, Spain. DOI

Fernández García, R. E. (2013). La biografía difusa de Sombra Castañeda: Un análisis histórico-literario*.* (Order No. 1543922, State University of New York at Stony Brook). *ProQuest Dissertations and Theses,* 89. Retrieved from http://search.proquest.com/docview/1433075169?accountid=14172. (1433075169).

Fernández García, R. E., & Heiser John. (2008). Vertical transport in the urban atmospheric dispersion test [Abstract]. Department of Energy's Journal of Undergraduate Research, Volume III, 2008. https://www.osti.gov/scitech/servlets/purl/1051001

Fernández García, R. E., López, M., & Heiser, J. (2007). Redesign and update of the Brookhaven Atmospheric Trace Sampler (BATS) [Abstract]. Department of Energy's Journal of Undergraduate Research, Volume VII, 2007 https://www.osti.gov/scitech/servlets/purl/1051000

Fernández García, R. E., & Heiser, J. (2005). Urban dispersion program: Looking forward to a better understanding of air flow contamination and transportation in urban environments [Abstract]. Department of Energy's Journal of Undergraduate Research, Volume VI, 2006 https://www.osti.gov/scitech/servlets/purl/1050999

Submitted

Fernández, R. E. (July 2018). Four years of mathematics: how a policy mediates students' high school outcomes. Submitted to the American Educational Research Association 2019 Annual Meeting.

In Preparation

Fernández, R. E. (In Preparation). The mathematics course-completion of Bronx County public high school students: Education policy implications.

Fernández, R. E. (In Preparation). Curriculum-based external exit examinations: A case study of the mathematics Regents exams-taking of Bronx public high school students.

Fernández, R. E. (In Preparation). The effects of strong high school mathematics course-taking policies: The case of Bronx County public high school students.

Fernández, R. E. (In Preparation). Academic success and its relations to high school mathematics course-taking: A systematic review of the literature.

Professional Presentations/Talks

Fernández, R.E (2018, May). Having fun while thinking mathematically. Pace University's 45th Kappa Mu Epsilon Induction Ceremony, New York Kappa Chapter. Pace University, Pleasantville, NY.

Fernández, R.E (2018, March). Race and politics in the Americas: Historical, sociological, and psychological perspectives on race, nation, and culture. Delivered at Pace University's Mental Health Counseling Student Association (MHCSA), Pleasantville, NY. March 27, 2018.

Fernández, R.E (2017, November). Education policy, open educational sources, and assessment as they relate to course re-design. Symposium on Redesigning Math Education for Student Engagement & Success. Mercy College, Dobbs Ferry, NY. November 10, 2017.

Fernández, R.E (2017, September). Can Cultural Psychonalysis help guide our clinical practice?. Lecture deliverd at the course Recent Courses PSY 685 - Social and Cultural Foundations of Counseling-, Culture: Clarifications & Complications, Ethnicity. Pace University, Plesantville, NY. September 18, 2017.

Fernández, R.E (2017, May). An enthically underrepresented and economically disadvantage student's path to the professoriate: An entrepreneurial perspective. 12th National Dominican Student Conference, Babson College, Babson Park, MA.

Fernández, R.E (2017, March). Socio-Cultural Diversity in America: A socio-historical context. Lecture deliverd at the course Recent Courses PSY 685 - Social and Cultural Foundations of Counseling-, Culture: Clarifications & Complications, Ethnicity. Pace University, Plesantville, NY.

Fernández, R.E (2017, February). How Open Educational Resources can decrease students'economic anxiety and allow faculty to tailor texbooks to fit their students' specific needs. Best Practices conference: Alternative / Open Educational Resources, Pace University, Pleasantville, NY.

Fernández, R.E (2017, February). Cultural Indentity throughout an academic journey. Informing Clinical Spychology Master students by means of intertiwining academic and personal perspectives. Lecture deliverd at the course Recent Courses PSY 685 - Social and Cultural Foundations of Counseling-, on the topic about ethnitic y and stereotypes. Pace University, Plesantville, NY.

Fernández, R. E. (2016, May). A quantitative policy analysis of Bronx County public high school students' mathematics course-completion. Thesis defense, Department of Technology and Society, Stony Brook University, Stony Brook. NY.

Fernández, R. E. (2016, March). The mathematics course-completion of Bronx County public high schools students: Education policy implications. Job talk, Department of Mathematics, Pace University, Pleasantville, NY.

Fernández, R. E. (2015, October). *An effective policy for high school to college transition: The case of bronx county public high Schools*. Poster session presented at the 2015 SUNY STEM Conference, State University of New York, Albany, NY.

Fernández, R. E. (2015, July). *An effective policy for high school to college transition: The case of Bronx County public high schools.* Paper presented at the 7th annual International Conference on Education and New Learning Technologies, EDULEARN15, Barcelona, Spain.

Fernández, R. E. (2014, December). *The mathematics regents and Advanced Placement Mathematics course-taking of Bronx County public high school students: A quantitative policy analysis*. Preliminary examination defense. Presented at Stony Brook University's Department of Technology and Society*,* Stony Brook New York.

Fernández, R. E. (2014, November). *The critical role of K-12 mathematics and statistics education: A case study from Bronx public high schools*. Paper presented at Stony Brook University, Department of Mathematics' Series on Mathematics Education, Stony Brook, New York.

Fernández, R. E. (2014, September). *The academic pathway of an ethnically underrepresented male in higher education and the sciences*. Poster presented at Brookhaven National Laboratory in commemoration of the first Executive Committee and External Advisory Board Meetings of Stony Brook University's Alliance for Graduate Education and the Professoriate – Transformation (AGEP-T), Upton, New York.

Fernández, R. E. (2014, June). *The New York State mathematics Regents exams: An analysis of a high minority and low-achieving county*. Qualifying examination defense, presented at Stony Brook University's Department of Technology and Society, Stony Brook, New York.

Fernández, R. E. (2014, February). *The results of the New York State mathematics Regents exams in Bronx County public schools for the academic year of 2011-12*. Paper presented at Stony Brook University's Center for Inclusive Education and Chapin's Graduate Lectures Series, Stony Brook, New York.

Fernández, R. E. (2014, April). *Using outcomes and rubrics in Student Affairs: Using assessment to build a culture of evidence*. Paper presented at Stony Brook University's Campus Residences professional staff development series, Stony Brook, New York.

Fernández, R. E. (2014, April). *Applying various assessment approaches to gather credible, usable data: Using assessment to build a culture of evidence*. Presented at Stony Brook University's Campus Residences professional staff development series, Stony Brook, New York.

Fernández, R. E. (2012, September). *A realist theory of science*. Paper presented at the 25th year Anniversary Celebration of the Dr. W. Burghardt Graduate Turner Fellowship, Stony Brook, New York.

Awards, Fellowships, & Grants

- Inducted to Pace University's Kappa Mu Epsilon, New York Chapter 2018
- Honored with Stony Brook University's Hispanic Heritage Month Award 2015
- Session Chair "Experiences in Primary and Secondary STEM education" at EDULEARN15 . 2015
- Ford Dissertation Writing Fellowship: Honorable mention 2015
- Dr. W. Burghardt Graduate Turner Fellowship 2009-2016
- Turner Summer Research Grant 2012-2015
- Alliance for Graduate Education and the Professoriate-Transformation 2014-2016
- Center for Inclusive Education (CIE) Researcher of Distinction 2014
- Alliance for Graduate Education and the Professoriate **(AGEP)** 2011-2013
- S-STEM (Formerly CSEMS Scholarship) 2004-2009
- Honors for Senior Thesis in Hispanic Languages and Literature 2009
- The Louis Stokes Alliance for Minority Participation (**LSAMP)** 2007-2009
- Golden Key International Honour Society member 2008

  Petrie Foundation Scholarship Loan Program in Math Education 2008

University Teaching Experience

Pace University, Department of Mathematics

Instructor MAT 100: Fundamental Mathematics
MAT 103: Algebra
MAT 134: Introduction to Probability and Statistics for Nursing and the Health Sciences.

Stony Brook University, Department of Technology and Society

Instructor EST 400:
Co- Instructor EST 600: Technology Policy: Theory and Practice
Instructor EST 104: Projects in Technology and Society
EST 194: Patterns of Problem Solving in Engineering
STEP winter outreach program
MAT 125: Calculus I: **CSTEP** summer outreach program

Stony Brook University, Department of Mathematics

Instructor MAP 103: Proficiency Algebra

Stony Brook University, Department of Hispanic Languages and Literature

Instructor SPN 111 & 112: Elementary Spanish I & II
Co-Instructor SPN 311: Spanish Conversation & Composition for non-native speakers

Teaching Assistant

EST 650 Directed Study in Technology, Policy, & Innovation
EMP 504 Quantitative Methods in Management, MS course
EMP 518 Project Management for Engineers, MS course
EST 392 Engineering and Managerial Economics
EST 330 Natural Disasters: Societal Impacts & Technological Solutions
EST 194 Patterns of Problem Solving in Engineering

Brookhaven National Laboratory, Office of Educational Programs

STEM TA Teacher's Assistant: STEM-Prep Summer Institute (2008)

University Invited Lectures

Mercy College, Department of Modern Languages

ESP 320: Conversational Spanish II

Fall 2015: "The importance of language skills in the learning of science, technology, engineering, and mathematic (STEM) disciplines: The science of language learning"

Stony Brook University
Department of Mathematics, MAE 510 Intro to Methods of Teaching and Standards.
Fall 2015: "The Common Core State Standards of Mathematics: Policy implications for future and in-service teachers of mathematics"

Department of Technology and Society, EST 330: Natural Disasters: Societal Impacts and Tech Solutions
Spring 2014 "Introduction to the human ecology and disaster research schools
Fall 2013 Natural hazards & sustainable planning: The role of forecasting and structural engineering"
Spring 2013 "A technology policy framework for the study of natural hazards: The role of engineering & technological innovations in the four stages of mitigation"
EST 192 Introduction to Modern Engineering
Spring 2014 "A mathematical problem solving approach to energy efficiency"
EST 202 Introduction to Science, Technology, and Society Studies
Spring 2013 "A multidisciplinary approach to mathematics and engineering education"

University Service

Pace University
Department Service, Mathematics Department
Coordinator: Developmental Mathematics Curriculum (2016- To Date)
Supervisor: Part time Developmental Math Faculty (2016- To Date)

College Service, Dyson College of Arts and Sciences
Co-leader: Dyson Society of Fellows Weekend Retreat (October 2018).

University Service
Member: Latinx Student Initiative (2016- To Date)
CAP Instructor (2016- To Date)
Member: Core Curriculum: Assessment of Quantitative Literacy (2017- To Date)
Students Mentor: Spring 2018;

Sony Brook University
Department of Technology and Society
Founder and Chair: Community Building Committee (2015 - 2016)
Advisor: Community Building Committee (2016 – To Date)
Founding Member: Research group on Engineering and Technological Innovations for Developing Countries (2015 - present)

College of Engineering and Applied Sciences
Moderator: New Teaching and Research Assistant Workshop (August, 2015)

Student Affairs, Division of Residential Programs
Member: Educational & Diversity Initiatives Committee Meeting (2015- 2016)
Member: Student Success Committee (2014-2015)
Co-Chair: Assessment Committee (2013-2014)

Center for Inclusive Education
Graduate Mentor: Community of Student Mentors Program (2012-2016)

Disability Support Services
Examination reader, writer, and proctor (2011- 2016)

External Professional Service/Service to the Academic Community

American Educational Research Association (AERA).

Referee: Manuscript reviewer for the peer-reviewed research Journal *AERA Open* (2016-to Date)
Reviewer: Reviewed proposals manuscript, presentations, and special interest group proposals for the 2018 AERA Annual Meeting.

Session Chair (July, 2015). "Experiences in Primary and Secondary STEM Education". EDULEARN15, the 7th annual International Conference on Education and New Learning Technologies, Barcelona, Spain

Fernández, R. E. (2012, January 29). [Review of the book Social Media for School Leaders by Brian J. Dixon]. *Journal of Educational Technology Systems, Baywood Publishing Co., Inc.*

Administrative/Managerial Experience

Pace University
Department of Mathematics
Coordinator: Developmental Mathematics Curriculum (2016- To Date)
Supervisor: Part time Developmental Math Faculty (2016- To Date)

Stony Brook University, Department of Technology and Society
Graduate Assistant (2011-2016).
Graduate Student Coordinator (2014-2015)
Mentor Coordinator, Counselor, Mentor, Residential Director, Tutor Coordinator, and Tutor for the Collegiate Sciences and Technology Entry (CSTEP), the Science and Technology Entry (CSTEP), and the New York Science, Technology, Engineering, and Mathematics (NYSTEM) programs (summer 2011, 2010, and 2009).

Student Affairs, Department of Residential Programs
Assistant Coordinator and director of the STEM residential tutoring centers (2014-2016)
Quad Assistant (2013-2014)

Language Learning and Research Center, Department of Modern Languages
Graduate Consultant: Language learning software and center supervisor (2010-2011)

Bronx Community College, Department of Information Technology
Assistant to Supervisor, Hardware and Software Technician (2004-2007)
Student Government Senator (2005-2005)

Professional Memberships

- The New York Academy of Science
- American Educational Research Association
- Society for the Advancement of Hispanic Engineers, National and Stony Brook Chapter.
- American Association for the Advancement of Science
- National Council of Teachers of Mathematics

Selected Professional Training

Business
Social Entrepreneurship

Mathematics and STEM Education Research Methodologies
Calculators and Computers for Teachers
Analysis for Teachers
Computer Assisted Mathematics Problem Solving
Scientists Teaching Science
Qualitative Research Methodologies in Mathematics Education: Guided Data Analysis

New York State Academy of Sciences
Certified as Higher Education Science Instructor

Pedagogical and Professional Development Trainings

Scientists Teaching Science
Communicating Science Workshop "Improvisation for Scientists"
Communicating Science Workshop "Distilling your Message"
Communicating Science Workshop "Media Interviews"
NSF/NIH Grantsmanship Workshop Session 1, 2, and 3
CIE Practical Professional Series Workshop: "Navigating Large & Complex Organizations
Practical Professional Series Workshop: Giving & Receiving Constructive Feedback

Social and Behavioral Sciences

Multivariate Statistics for Social Science
Meta-Analysis in Social Psychology
Scientific and Technical Writing
Higher Education Policy
Effective Policy Making for high school to college transition

Student Affairs

Certified as Quantitative Analyst in Student Affairs
Trained in managing student crises

Technology, Policy, and Innovation (Interdisciplinary)

Science & Technology Policy
Data Analysis for Technology, Policy, and Innovation
Decision Making in Socio-Technological and Global Contexts

Internships

Department of Energy, Brookhaven National Laboratory

Pre-service Teacher Internship (PST): Mathematics and Science	June-August 2007
Teacher preparation Intern and Jr. Science Data Analyst	June-August 2007
Science Undergraduate Laboratory Internship (SULI)	June-August 2006.
Community College Internship (CCI)	June-August 2005

Skills

- Parametric and non-parametric data analyses,
- multi-criteria decision analyses (MCDA),
- multivariate, logistic, and quantile regression analyses,
- meta-analysis,
- data driven qualitative analysis,
- quantitative analysis,
- discourse theory,
- experimental and quasi-experimental designs.

Languages

English

Native or near native proficiency

Spanish

Native or near native proficiency

French

Working professional proficiency