Moraima (Castro-Faix) Matus-Nicodemos, Ph.D.

Ph.D. Science Education
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PROFESSIONAL SUMMARY

Ph.D. in the learning sciences with experience with qualitative and quantitative data analysis, communication of science to a general audience and outreach. Competencies include data analysis, collaboration, mentoring and outreach. Highly organized, result driven and analytical. Well-developed presentation, negotiation and inter-personal skills. Fluent in Spanish, English and Italian.

EDUCATION

Ph.D. Learning, Cognition, Instruction, & Development 2021
Rutgers University, Graduate School of Education

M.A. Education 2019
Rutgers University, Graduate School of Education

B.S. Biology, Minor: Genetics 2004
University of Puerto Rico, Aguadilla

SKILLS AND ABILITIES

- *Educational Research Methodology*
- *Research Design*
- *Interview questionnaire development*
- *Science Education*
- *Data Analysis*
- *Publication of Research*
- *Program management*
- *Data Presentation*
- *Excel, SPSS, Python*

ACHIEVEMENTS

Awards

Future Directions in Genetics Education Fellowship 2019
NCES Data Institute 2020
NCME/Chan-Zuckerberg Fellowship 2021

Certifications

Project Evaluation and Science Policy Certificate. 2021
Science Policy Academy LCC
Science Policy and Advocacy for STEM Scientists 2021
University of California-Irvine

Languages

Spanish-Native, Fluent; English-Fluent; Italian-Proficient; Portuguese-Elementary

Publications

Peer Reviewed Journal Articles

Castro-Faix, M., & Duncan, R. G. (2021). Cross-sectional study of students' molecular explanations of inheritance patterns. *Science Education*.

Castro-Faix M., & Duncan, R.G., (2020). Data Driven Refinements of a Genetics Learning Progression: Mapping an Understanding of Classical Genetics. *Journal of Research in Science Teaching.*

Castro-Faix, M.,Todd, A., Romine, W & Duncan, R. G. (2018, June). Do Alternative Instructional Approaches Result in Different Learning Progressions? Paper presented at the annual meeting of the International Society of the Learning Sciences. In J. Kay & R. Luckin (Eds.), *Rethinking Learning in the Digital Age: Making the Learning Sciences Count*: *The International Conference of the Learning Sciences (ICLS) 2018, Volume 2* (pp.808-815). London, UK: International Society of the Learning Sciences.

Policy Memo

Martínez-Orengo, N., Smith, M. R., Whitaker, D. T., & **Castro-Faix, M.** (2021). Policy Memo: Incorporating Graduate-level Internships to Strengthen the STEM Workforce and Trainee Career Prospects. *Journal of Science Policy & Governance*, *19*(01).

Book Chapters

Duncan, R. G. & Castro-Faix (2021). How can learning progressions support the development of genetics literacy? In M. Haskel-Ittah, & A. Yarden (Eds.), *Genetics Education for the 21st Century.* New York: *Springer.*

Handbook Chapters

Duncan, R. G. & Castro-Faix (under review). Learning Progressions in Genetics. In H. Jin, D. Yan & J. Krajick. *Handbook of Research on Science Learning Progressions. Routledge Taylor & Francis.*

Peer Reviewed Journal Articles- Under Review and In Revision

Narayanam B., La Porta J., Matus-Nicodemos R., Prabo de Maio D., Voskoboynik, Y., **Castro-Faix M.,** Summers S., & Covey L., (under review, 2019). Changes in polypyrimidine tract-binding protein I (PTBI) levels lead to cell-specific responses in phenotypically distinct transformed T-cells. *Journal of Immunology.*

EMPLOYMENT

Scientific Program Manager (Student Services Coordinator) **2021-present**

National Institutes of Health (NIH)-Columbus Technologies

In addition to scholarship administration (recruitment, budgeting, strategy, application review, certification, alumni tracking), I work closely in curriculum development, mentor evaluation and placement. Additionally, I am involved in IDP development and follow-up for each scholar. Frequent collaboration with other programs to organize integrative events, including seminars, networking lunches, peer-mentoring, informational panels, and volunteer activities.

- Managed the research group selection process for 15 UGSP scholars at different research laboratories within the multiple institutes and centers at the NIH.
- Leveraged social media and conferences to recruit applicants and this led to an increase in applications from the previous year) (From 65 in the previous application cycle to 90 in this year's application cycle)
- Designed and managed on-boarding process of new scholars when they enter their research training to ensure they had a smooth transition and increased program efficacy.

- Communicated the process with principal investigators (PI's) and other staff to ensure effective incorporation of the trainees and this encourages PI's to continue their engagement with the program.
- Provided direct and individual mentorship and guidance to trainees that prepares them for their career trajectories via individual counseling, alumni communication, and facilitated workshops
- Planned and executed events for the UGSP and as a part of the Office of Intramural Training and Education (OITE) team.

Graduate Research Intern-Remote **Summer 2020**
Southern Methodist University

Applied quantitative and qualitative research methodology to analyze data from a mathematics education project that included analyzing data collected to validate a learning progression which described learning in mathematics across grades K-2. This analysis included analyzing student interview data and teacher's feedback on the numerical and spatial reasoning learning progression.

- Used SPSS, Excel and Python to analyze quantitatively large datasets timely and prepared a progress report each week
- Analyzed qualitative data
- Ensured the safety of confidential datasets
- Demonstrated effective communication skills to communicate remotely
- Researched and created a matrix of the best practices in professional development and the supporting literature with the purpose of supporting the writing of a grant.
- Submitted manuscript to the American Educational Research Association (AERA) conference.
- Built assessment database using FileMaker Pro

Graduate Research Assistant **2013-2020**
Rutgers University, Graduate School of Education

Applied quantitative and qualitative research methodology to support the *I²LEAPS* project at Rutgers University. This included designing, implementing, and evaluating the effectiveness of curriculum and assessments in the life sciences for college level and high school Biology students. This work was published in Science & Education and The Journal of the Learning Sciences.

- Developed and validated assessments, surveys and interview protocols with the purpose of analyzing quantitative and qualitatively how students learned about genetics.
- Interviewed more than 300 students.
- Prepared and analyzed data for publication in the Journal of the Learning Sciences, Science & Education and the International Journal of Mathematics Education.
- Led collaborations with teachers, faculty, and university offices to design and implement a Qualtrics survey for 2000 middle school, high school and college students.
- Trained a team of four graduate students on structured interviewing.

Program Coordinator STEM Programs **2014-2015**
Rutgers University, Learning Centers

Coordinated the learning assistant program (LA) and the Rutgers Science Explorer. Assisted the directors in the day-to-day activities of the programs.

- Interviewed and hired prospective learning assistants (LAs); coordinated supervision and evaluation of LAs' daily activities.

- Managed a team of 75 undergraduate learning assistants and created a process to manage the scheduling of tutoring sessions using Google sheets; resulted in enhanced scheduling efficiency as it allowed easier access.
- Planned and delivered hands-on inquiry activities on topics such as biology, geology, and physics for elementary school audiences.
- Supported program administration with budgeting, progress reports, and planning.

Graduate Teaching Assistant **2010 - 2015**
Rutgers University, Division of Life Sciences

General Biology 101 Laboratory and Workshop

Taught two types of biology courses which included a newly designed workshop in biology that had the goal of empowering students by teaching them learning strategies.

- Taught students how to use learning strategies and tools in the context of biology and empowered them to learn on their own in other disciplines as well.
- Provided technical aid, such as proper safety protocols, microscope use, slide observations and simple genetics, to students during experiments.
- Generated quiz questions and evaluated laboratory reports.

Advanced Cell Biology (400 level)

This course consisted of a high-level biology course in which students designed their own study based on the different techniques taught. Involved in mentoring, advising and planning of the students' projects.

- Co-led pre-laboratory lectures and laboratory report evaluations.
- Assisted students in laboratory techniques such as bacterial cell culture, preparation of antibiotics, cancer cell culture, leishmania cell culture, cytotoxicity assay, RNA extractions, RT and PCR reaction, agarose gel electrophoresis, protein extraction and SDS-PAGE / Western Blotting.