



# FRANCES ZENON MELENDEZ PHD

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## Summary

Experienced Life Sciences Program Director, Microbiologist, Researcher and Professor with excellent client and project management skills. Action-oriented with strong ability to communicate effectively with technology, scientific, executive, and business audiences.

Disciplined, Proficient, Award-winning, Proactive, Highly motivated, Adaptable, Dependable, Ambitious, Meticulous, Organized, Multi-task-oriented, Innovative, Responsible, Customer-service focused and Analytical.

## Skills

Strong Leadership Skills, Sound decision-making abilities, Time management, Process improvements, Instruction & Assessment skills, Analytics and problem resolution, Research and development, Compliance and regulations, Project management, Quality assurance, Strong GMPs, Client-focused, Excellent communication, Operations management, Bilingual, Training and development.

## Experience

Puerto Rico Science Technology and Research Trust- Puerto Rico Department of Education | San Juan, PR  
**STEM Program Director**  
03/2019 - Current

- \*Manage the material, human and fiscal resources of the agency to implement the strategic initiative of “STEM Instruction Development Approaches Increasing Law STEM Awards and the Retention of Educators to Achieve the Goal of Increasing Academic Students”) (HSI STEM Project and the US Department of Education), contributing to high-quality education at every level.
- \*Coordinate and maintain scientific project goals.
- \*Develop a 5-year STEM Plan for Puerto Rico, including vision, goals, and strategies for systemically improving STEM education across the island.
- \*Develop and implement policies and procedures.
- \*Develop and implement learning strategies for faculty and students.
- \*Function as key liaison between the PRDE, the PRSTR, the Puerto Rico STEM/CTE Council and other stakeholders, incorporating their input into the STEM plan.
- \*Design, implement and evaluate curricular strategies of Sciences Programs Research effective STEM programs and incorporate best practices into PRDE’s overall STEM strategy.
- \*Provide and effective academic and student support services
- \*Supervises the technical and administrative activities and provides guidance to a staff of professional and support personnel.
- \*Establish and manage budget for STEM initiatives to maximize the use of available resources.
- \*Ensured institutional effectiveness and compliance with all of the accreditation criteria.
- \*Provide inspirational leadership and direction to all associates and ensure the continued development and management of a professional and efficient institution.
  - o Leading needs analysis, including state of current STEM instruction and student achievement
  - o Establishing and/or refining standards for STEM education
- \*Ensure the delivery of high quality academic and administrative services.
  - o Establishing STEM-focused schools
- \*Facilitate cross-departmental collaboration and strengthen internal communications with faculty and staff throughout the institution.
  - o Partnering with academic program directors to integrate STEM with other subjects
- \*Create and promote a positive multicultural work environment that supports consistency throughout the institution’s strategy, operational methods and needs.
  - o Refining instruction and evaluation tools
  - o Preparation, certification and professional development of STEM teachers

\*Collaborate with PRDE academic program directors in planning, development, implementation, analysis and documentation of STEM curriculum, best practice models, instruction and evaluation tools.

\*Provide leadership and support to efforts of PRDE “Regional Educational Offices” (OREs) increasing diversity, expanding access to STEM education, and improving student achievement and outcomes in STEM areas.

\*Provide leadership to and support to efforts of PRDE OREs to improve STEM teacher’s retention and attraction

\*Coordinate partnerships and collaborations to support efforts of PRDE to improve diversity, student achievement in STEM areas and STEM teacher’s retention and attraction; integrate PRDE into the broader STEM ecosystem, including:

- Foster STEM diversity role model programs working with organizations and corporate partners.
- Provide leadership and support to research studies in STEM initiatives
- Participate in the Puerto Rico STEM/CTE Council.
- Supervise and lead public policy creation and implementation regarding STEM/CTE initiatives.
- Deliver written and/or oral presentations to staff, ORE’s and other groups and stakeholders.

Universidad Ana G. Méndez | Carolina, PR

**Life Sciences Program Director**

*01/2017 – 03/2019*

\* Assistant Director of “Competency Development Approaches: Increasing STEM Awareness and Retention to Narrow the Achievement Gap of Hispanic Students” (HSI-STEM Project of the US Department of Education).

\*Provide scientific advice, consultation and leadership in designing, coordinating and maintaining scientific project goals.

\*Develop and implement policies and procedures.

\*Develop and implement learning strategies for faculty and students.

\*Serve as liaison to control administrative staff on office support services for extensive organization needs.

\*Design, implement and evaluate curricular strategies of Sciences Programs.

\*Provide and effective academic and student support services

\*Supervises the technical and administrative activities and provides guidance to a staff of professional and support personnel.

\*Ensured institutional effectiveness and compliance with all of the accreditation criteria.

\*Provide inspirational leadership and direction to all associates and ensure the continued development and management of a professional and efficient institution.

\*Ensure the delivery of high quality academic and administrative services.

\*Facilitate cross-departmental collaboration and strengthen internal communications with faculty and staff throughout the institution.

\*Create and promote a positive multicultural work environment that supports consistency throughout the institution's strategy, operational methods and needs.

Universidad Ana G. Méndez | Carolina, PR  
**HSI-STEM Assistant Director**

01/2017 -03/2019

\*Assistant Director of “Competency Development Approaches: Increasing STEM Awareness and Retention to Narrow the Achievement Gap of Hispanic Students” (HSI-STEM Project of the US Department of Education). \*Provide scientific advice, consultation and leadership in designing, coordinating and maintaining scientific project goals. \*Develop and implement policies and procedures.

\*Develop a 5-year plan for the School of Science and Technology.

\*Function as a key liaison between Universidad Ana G. Méndez and other educational institutions.

\* Research and implement effective STEM programs.

\*Establish and manage budget for STEM initiatives to maximize the use of available resources.

\*Implement STEM strategy, including:

-Leading needs analysis, including state of current STEM instruction and student achievement.

-Establishing and/or refining standards for STEM education.

-Preparation, certification and professional development of STEM faculty.

-Develop and Implement Faculty Advisor Program.

-Develop and implement Tutors and Mentors Program

-Develop and Implement POGIL and PLTL strategies. \*Develop and implement learning strategies for faculty and students. \*Serve as liaison to control administrative staff on office support services for extensive organization needs.

\*Provide conferences and seminars of STEM to different public. \*Design, implement and evaluate curricular strategies of Sciences Programs. \*Provide and effective academic and student support services.

Universidad Ana G. Méndez | Carolina, PR  
**Professor**

01/2016 -03/2019

\*Offered courses of Microbial Ecology and Diversity- BIOL-208; Laboratory of Microbial Ecology BIOL-208L; General Mycology BIOL 308, Laboratory of General Mycology BIOL 308L), General Microbiology (BIOL-206), Parasitology & Lab (BIOL-423) and Food and Water Microbiology & Lab (BIOL-383).

\*Challenged and motivated students through in-depth lectures and discussions.

\*Served as faculty sponsor for Microbiology student Character, STEM Student Association and other extracurricular activities.

\*Documented all student information including service plans, treatment reports and progress notes.

\*Identified, and manage administrative or academic issues in students and made references to appropriate services and resources.

University of Puerto Rico | Humacao, PR  
**Professor**

08/2014 - 12/2014

\* Offered the courses of Genetics Laboratory-BIOL3306 and General Biology Laboratory-BIOL3013 among others.

\*Tracked class attendance and student progress.

\*Developed lesson plans to teach course materials according to schedule.

\*Employed scientist and quantitative reasoning and critical thinking competencies to encourage student learning and build community within the classroom.

\*Developed and maintained effective frameworks, standards and requirements.

Universidad Ana G. Méndez | Gurabo, PR  
**Professor**

08/2014 - 12/2014

\*Instructed the courses of Immunology – BIOL322 and Introduction of Scientific Investigation-GESC264 among others.

\*Developed lesson plans to teach course materials according to schedule.

\*Developed, administered and graded tests and quizzes in a timely manner.

\*Developed and implemented interesting and interactive learning media to

increase student understanding of course materials.

\*Utilized creative instruction methods to promote student learning objectives.

\*Adapted methods of instruction, as well as classroom materials to address student needs.

UPR-Medical Sciences Campus-  
Comprehensive Cancer C | San Juan, PR  
**Research Microbiologist-Virologist**  
08/2009 - 05/2014

\*Experience in Laboratory working with infectious diseases and techniques such as cell culture (primary macrophages, primary microglia, neurons) HIV virus, ELISA validation, Western Blot, electrophoresis, proteomic labeling, and clinical cohort, among others.

\*Experience work with patients and clinical samples.

\*Created technical and research documents such as environmental impact reports.

\*Trained personnel on laboratory functions.

\*Designed and directed experiments using multiple wet lab molecular techniques.

\*Experience using chromatography, filtration system, protein purification, protein chemistry, analytical techniques, and statistics.

\*Technical writing skills and ability to present data in meetings (national or international)

\*Proficiency in Microsoft Office (Excel, Word, Power Point), e-LIMS and e-LAB among others.

\*Experience in peer review of analytical data of clinical patients using statistics programs such as Graph Pad Prism.

\*Strong knowledge on aseptic techniques, gowning techniques, assembly of aseptic processing lines and room classifications.

## Education and Training

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UPR-Medical Sciences Campus | San Juan, PR

**Ph.D.** in Microbiology

2014

Cum laude graduate

3.64 GPA

\* Outstanding Award Recipient in Microbiology an Medical Zoology Department at University of Puerto Rico, Medical Sciences Campus

\*Young Investigator travel Award Recipient, Conference on Retroviruses and Opportunistic Infections (2013).

\*Young Investigator travel Award Recipient, Society of Neuroimmune Pharmacology (2014).

University of Puerto Rico | Humacao, PR

**Bachelor of Science** in Microbiology

2009

Magna cum laude graduate

3.81 GPA

Undergraduate Research: Department of Chemistry, University of Puerto Rico at Humacao, 2007-2008 (Research Adviser: Dr. Alegría)

• Description of research project: Study the synthesis of nano compounds using the chromatography techniques.

Undergraduate Research: Department of Microbiology, University of Illinois, Urbana, Champaign 2008-2008 (Research Adviser: Dr. James Slauch)

• Description of research project: Transcriptional Regulation of the *hilE* Gene Involved in *Salmonella* Typhimurium Invasion- This research was performed to understand the transcriptional regulation of *hilE* in *Salmonella*. Starting with a *hilE-lacZ* transcriptional fusion, we monitored *hilE* expression using Lactose MacConkey medium. We performed transposon mutagenesis and then isolated transposon insertions. Finally, we determine the site of insertion using PCR and DNA sequencing and these techniques allow us to identify genes that regulate *hilE* transcription.

Undergraduate Research: Department of Physics, University of Puerto Rico at Humacao Campus, 2008-2009 (Research Adviser: Dr. Rogelio Furlan)

- Description of research project: Study of Interactions of DNA with Intense Electric Fields- In this work we are investigating the deposition of nanofibers formed of or containing DNA, using a processes assisted by intense electric field. For this purpose, we are using diluted DNA samples and also DNA samples as part of a polymeric solution using polyethylene oxide (PEO) that is a biocompatible polymer. The biocompatible nanofibers under study can find application as sensors, as structures for the incorporation of metallic nanoparticles, aiming at optical applications, as structural material for the growing of cells, among others

## Activities and Honors

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\*Society of Puerto Rico Microbiologist Board of Directors

\*Society of Puerto Rico Microbiologist Member

\*PVC Higher Education Services Member

\*Boletín Síntesis (UNE Newsletter) Writer

## Publications

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1. 18O proteomics reveal increased human apolipoprotein CIII in Hispanic HIV-1+ women with HAART that use cocaine. Zenón F, Jorge I, Cruz A, Suárez E, Segarra AC, Vázquez J, Meléndez LM, Serrano H. *Proteomics Clin Appl.* 2016 Feb;10(2):144-55. doi: 10.1002/prca.201400204. Epub 2015 Nov 19. PMID: 26255783
2. HIV-infected microglia mediate cathepsin B-induced neurotoxicity. Zenón F, Cantres-Rosario Y, Adiga R, Gonzalez M, Rodriguez-Franco E, Langford D, Melendez LM. *J Neurovirol.* 2015 Oct;21(5):544-58. doi: 10.1007/s13365-015-0358-7. Epub 2015 Jun 20. PMID: 26092112
3. Cocaine potentiates cathepsin B secretion and neuronal apoptosis from HIV-infected macrophages. Zenón F, Segarra AC, Gonzalez M, Meléndez LM. *J Neuroimmune Pharmacol.* 2014 Dec;9(5):703-15. doi: 10.1007/s11481-014-9563-z. Epub 2014 Sep 11. PMID: 25209871
4. Macrophage derived cystatin B/cathepsin B in HIV replication and neuropathogenesis. Rivera LE, Colon K, Cantres-Rosario YM, Zenon FM, Melendez LM. *Curr HIV Res.* 2014;12(2):111-20. Review. PMID: 24862331

## Certifications

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\*Project Based Learning (PBL) - 2018

\*Certificate of Training in "Avalúo del aprendizaje estudiantil en las instituciones de nivel superior" - Assessment processes -2018

\*Process Oriented Guided Inquiry Learning (POGIL) - 2017

\*Certificate of Judge in the Puerto Rico Society of Microbiologist Annual Meeting- 2018

\*Certificate of Intellectual Property in no-academic activities - 2017

\*Certificate of Training in Copyright in Academia2017

\*Training Certificate in "Formación y desarrollo de competencias profesionales en los docentes"-2017

\*Training Certificate in Effective Communication -2017

\*Training Certificate in Student Retention -2017

## Additional Information

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TRAINING COURSES:

Process Oriented Guided Inquiry Learning (POGIL) – February 9-10, 2018.

- Uso de las Tecnologías: El portafolio electrónico en el Contexto Educativo- August 25, 2017.
- IRB Training for Faculty – May 4, 2017.
- Principios del diseño instruccional- May 18, 2017.
- Investigación y destrezas de información- April 21, 2017.
- Retención: una gestión colaborativa- March 3, 2017.
- Aspectos de disciplina y seguridad en la sala de clases. – March 3, 2017.
- Comunicación Efectiva – March 31, 2017.
- Formación y desarrollo de Competencias profesionales en los docentes- March 14, 2017.
- Modern and Multivariate Methods and Models – February 16, 2018.
- Los derechos de autor y el uso Justo en la Academia – February 13, 2017.
- La propiedad intelectual en Actividades no Académicas – February 6, 2017
- ITAS General Employee Training - September 30, 2015.
- Evidence and Proof (ORA-U) - September 29, 2015.
- Food and Drug Law: FDA Jurisdictions (ORA-U) - September 25, 2015.
- Expected Conduct of FDA Personnel (ORA-U) - September 25, 2015.
- A Tour of FDA (ORA-U) - September 25, 2015.
- Orientation to ORA and FDA Fieldwork (ORA-U) - September 24, 2015.
- FDA Annual Records Management Training Course - September 24, 2015.
- FDA FY15 Computer Safety Awareness Course - July 15, 2015.
- Introduction to Incident Command System (ICS-100) - August 2015.
- Biosafety Complete Training Series- August 2015.
- Introduction to Biosafety - August 2015.
- CITI Good Clinical Practice Training - August 2015.
- Scientist Teaching Science Online Course- 2014
- Responsible Conduct in Research Compliance Program - June 2014.
- Handling and packaging of infectious substances- January 2014.
- Global Harmonization System Orientation Course - November 2013.
- Individual Developmental Plan Workshop - 2013.
- Blood -Borne pathogens Seminar - September 2012.
- Proteomics Core Workshop: Tools for Protein Expression Validation - November 2013.
- “Hands on Workshop on Scientific Writing” - University of Puerto Rico, Medical Sciences Campus August 11-12, 2011.
- Theoretical and Practical Training on Flow Cytometry Techniques - University of Puerto Rico, Medical Sciences Campus. September 20 -21 ,2011.
- Biosafety - University of Puerto Rico, Medical Sciences Campus. October 7, 2011.
- Fundamentals of Proteomic & Two-Difference Gel Electrophoresis (2D-DIGE) Theoretical and -Hands-on Workshop – University of Puerto Rico, Medical Sciences Campus. October 25-28, 2011.
- Human Research Curriculum Completion Report – University of Puerto Rico, Medical Sciences Campus. March 27, 2012.
- CITI Health Information Privacy and Security (HIPS) 2 Curriculum Completion Report- University of Puerto Rico, Medical Sciences Campus. March 28,2012.
- Biomedical Waste Management- August 2009.
- Radiation Safety Introductory Course- August 2009.
- General Session and Occupational Health & Safety in the Animal Resources Center- University of Puerto Rico, Medical Sciences Campus. August, 2009.
- Aseptic Surgery; Anesthesia and Analgesia- University of Puerto Rico, Medical Sciences Campus. August 21, 2009.