Melissa V. Fernandez-de Céspedes, PhD MSc

Education

University of Florida - Institute of Food and Agricultural Sciences, *Hybrid, Florida Master Naturalist Program* **2022 – 2023**

New York University (NYU), *New York City, NY, PhD, Pathology* **2008 – 2014**

- **Doctorate in Virology/Immunology** from the Department of Pathology, 2014. (Graduate mentor: Dr. Nina Bhardwaj, Degree supervisor: Dr. Derya Unutmaz)
- **Dissertation**: *"Ion Efflux and Influenza Infection Trigger NLRP3 Inflammasome Signaling in Human Dendritic Cells"*

Florida International University (FIU), *Miami, FL, MSc, Chemistry* **2007 – 2010**

- **Master of Science in Chemistry**, 2010. Graduate mentor: Dr. Piero Gardinali
- **Thesis**: *"Assessment of Submerged Vegetation as Indicators of Irgarol Contamination"*

Florida International University, *Miami, FL, BSc, Chemistry, magna cum laude* **2003 – 2007**

- Mentors: Drs. John T. Landrum and Richard A. Bone

Florida International University, *Miami, FL, Cert., Chinese Studies* **2003 – 2007**

Work Experience

Associate Principal Medical Writer – Hepatology & Gastrointestinal Disease **2022 – 2023**
MedLogix Communications – Remote from Tampa, FL

- Mentored junior writers in improving writing skills and managing interpersonal conflicts
- Developed topline summaries for patient advocacy meetings and medical advisory boards
- Coordinating with staff at all levels to ensure timely delivery of products to clients

Associate Principal Medical Writer – Ophthalmology & Metabolic Disease **2022 – 2023**
Prime Global – Remote from Tampa, FL

- Engaged with the KOLs to understand and anticipate their needs and preferences
- Built and maintained deep external relationships with clients to become their trusted advisor on their publication plan
- Supported development of a reference guide for publication offering digital enhancements

Senior Medical Writer – Rare Diseases & Virology **2022**
Oxford Pharmagenesis – Remote from Tampa, FL

- Provided senior review on publication deliverables to support senior team members in achieving quality products on time
- Contributed to the development of symposia material, including slide deck content research, producing marketing material copy, post-survey creation, and on-site support
- Wrote several clinical manuscripts of which 2 were published and 2 were near submission
- Developed a PLS for a manuscript in collaboration with a patient reviewer
- Worked on initiating a Delphi Panel on a rare disease
- Contributed on a pitch that landed a new client

Lead Medical Writer – Rare Diseases **2020 – 2022**
Oxford Pharmagenesis – Remote from Tampa, FL

- Designed and developed abstracts, posters, slide decks, manuscripts, and standard response letters
- Served as the key liaison between key opinion leaders, pharmaceutical clients, and internal team members

- Cultivated relationships with key opinion leaders to execute a comprehensive strategic communications plan for pharmaceutical launch success and brand maintenance
- Developed a team EndNote library to host citations and PDFs of purchased publications, clinical study reports, historic product inserts, and other relevant documents required to produce deliverables; provided ongoing training for new writers on best practices
- Created Endnote output styles to reduce editorial load and standardize bibliographies

Postdoctoral Researcher specializing in HIV and coronavirus assembly **2015 – 2020**
National Cancer Institute (NCI) Center for Cancer Research (CCR), Frederick, MD

- Awarded the Fred Hutchinson Dr. Eddie Mendez Award for my commitment to diversity and inclusivity in the academic sciences, a meritorious presentation award, and 4 travel awards
- Excellent teamwork and collaboration skills demonstrated by managing a multifaceted and collaborative biochemical research program (2 post-baccalaureates, 1 college student, and 3 collaborating laboratories) resulting in the publication of 6 scientific manuscripts
- Effective strategic thinker demonstrated by the conceptualization, design, writing, and award of 3 federally funded grants for a total of $700,000 in research funding
- Excellent science communication and presentation skills resulting in repeat invitations to speak at education and outreach events by the National Institutes of Health, NYU, Georgetown, and the American Chemical Society

High School Teacher - Chemistry and Advanced Placement (AP) Chemistry **2014 – 2015**
Brandon High School, Brandon, FL

- Inspired underserved students to pursue knowledge, think critically, and use science concepts as evidenced by increasing the AP Chemistry exam passage rate by 25% compared to previous years
- Effective at managing multiple projects as demonstrated by planning, preparing, and executing 3 lesson plans simultaneously

Adjunct Chemistry Professor **2011 – 2013**
John Jay School of Criminal Justice, New York City, NY

- Effective science communicator as evidenced by ensuring the practical understanding of chemistry concepts in the classroom and recitation for application in the laboratory

Doctoral Pathology Student specializing in influenza and HIV immunology **2008 – 2014**
NYU, New York City, NY

- Effective strategic thinker demonstrated by the conceptualization, design, and writing of a federally funded training grant earning $192,000 in research funding
- Expert understanding of health and disease due to genetics, environmental status, injury, and infectious agents as evidenced by training in pathology, immunology, and pharmacokinetics
- Excellent science communication and presentation skills resulting in 2 first author publications and invitations to speak at international and national conferences

Graduate Student - Herbicides Phyto-pharmacokinetics in Aquatic Plants **2007 – 2008**
FIU, Miami, FL

- Knowledgeable of the human impact on Florida ecology, and the various government and research efforts enacted to measure and monitor conservation efforts
- Experienced at coordinating data collection, database maintenance, and statistical analysis of data as demonstrated by risk assessment analysis in a published peer-reviewed research paper
- Expert understanding of the application of analytical chemistry approaches to environmental monitoring as evidenced by the development and validation of a novel automated extraction method to detect triazine compounds extracted from plant material

Undergraduate Chemistry Student assisting a clinical trial in Age-Related Macular Degeneration **2003 – 2007**
FIU, Miami, FL

- Experience in coordinating data collection, database maintenance, and statistical analysis of data as demonstrated by management, processing, and analysis of clinical samples

Leadership Experience

Managing Editor of the CCR-FYI seasonal newsletter **2016 – 2018**
NCI CCR, Frederick, MD

- Experienced in managing a team for the production of communication materials
- Successful collaborator as evidenced by working with the Editor-in-Chief and CCR staff to produce timely quality publications
- Strategic thinker as it applies to publishing demonstrated by my development and implementation of a new editorial initiative – the Colloquium Edition – to increase authorship, personalize outreach to key communities, and promote writing and publishing opportunities
- Skilled at building relationships as evidenced by consistently identifying and recruiting new authors across the NCI community to commission quality content including conference reviews, historical perspectives in science, and work-life balance pieces

Co-chair of the CCR-FYI Steering Committee **2016 – 2018**
NCI CCR, Frederick, MD

- Successfully mentored a diverse group of individuals pursuing a common goal as evidenced by increased membership and engagement under my leadership
- Built and maintained strong relationships with the CCR Office of Training and Education (OTE) and the NIH Office of Intramural Training and Education (OITE) to assist in implementing training programs and services to support the overall training goals of the institute
- Utilized strategic thinking to identify new ways to reach and recruit fellows resulting in a 10-fold increase in membership, a 3-fold expansion in outreach activities, and increased awareness, visibility, and reputation of the organization across NIH campus
- Prepared reports of activities for internal review and external public reporting to communicate the needs of the fellows' community and design of program initiatives to address those needs

Co-Chair of the CCR-FYI Annual Fellows' Colloquium Planning Committee **2016 – 2018**
NCI CCR, Frederick, MD

- Social awareness as displayed by my enforcement of balanced gender and cultural representation in speaker and panelist selection as displayed by a diverse presentation agenda
- Experienced program manager as evidenced by my ability to lead a cross-functional team in the planning, organization, and execution of the annual CCR Fellows' Colloquium and subsequent Annual Retreat for 2 consecutive years
- Successful strategic thinker working in collaboration with team members to increase conference registration and attendance nearly 2-fold and retreat attendance 3-fold under my leadership

Honors and Special Scientific Recognition

2020 Recipient of the **Dr. Eddie Mendez Award,** Fred Hutchinson Cancer Research Center
2020 **Postdoctoral Scholar Travel Award** (meeting canceled due to COVID-19 pandemic), American Society for Virology
2019 **Postdoctoral Scholar Travel Award** ($500), American Society for Virology
2019 Meritorious Presentation **Travel Award** ($1,000), HIV-DRP
2017 **Postdoctoral Scholar Travel Award** ($500), American Society for Virology

2015 Sallie Rosen Kaplan **Postdoctoral Fellowship** for Women Scientists in Cancer Research, NCI
2007 American Chemical Society **Outstanding Student** Award, FIU
2007 Outstanding **Academic Achievement** in Arts and Sciences Award, FIU
2006 NIH MBRS Research Initiative for **Scientific Enhancement Fellowship**, FIU

Continuing Education

2019 Business of Science (by SciPhD). NCI CCR OTE, MD
2017 Flow Cytometry Training Course. NIH, MD
2017 Experimental Design Course. NCI CCR OTE, MD
2016 IMAGE Grant Writing Workshop. ASBMB, D.C.
2016 – 2017 Art of Science Communication Workshop. ASBMB, *virtual*
2016 K Grant Working Group Class. NCI CCR OTE, MD
2016 BioTech53 - Super Resolution Microscopy: Principles and Methods Workshop. FAES, MD
2015 – 2016 Scientists Teaching Science. NIH OITE, MD
2013 Fundamentals of Teaching. NYU, NY
2009 – 2013 Grant Writing for Scientists. NYU, NY

Volunteer Teaching Experience

2022 **Guest Scientist**. Citizen Science event, Girl Scouts
2022 **Guest Scientist**. Speaker series, Girl and Boys with Confidence Summer Camp
2016 Summer Journal Club **Leader** - Topic: Research on the micro-virome. NIH OITE, MD
2010 After school volunteer science **Instructor**. Citizen Schools, Isaac Newton Middle School for Math and Science, NY
2007 – 2008 Organic Chemistry Laboratory **Instructor**. FIU, FL

Mentorship and Outreach Activities

2022 **Panelist**. GMaP Postdoc Cohort Meeting, Fred Hutchinson Cancer Research Center (virtual)
2022 **Panelist**. Dr. Eddie Mendez Award Info Session, Fred Hutchinson Cancer Research Center (virtual)
2021 **Panelist**. Dr. Eddie Mendez Award Info Session, Fred Hutchinson Cancer Research Center (virtual)
2021 **Panelist**. Sallie Rosen Kaplan **Postdoctoral Fellowship** for Women Scientists in Cancer Research, NCI (virtual)
2019 **Mentor**. Outstanding Poster Award, Postbaccalaureate Fellow (Hannah Carter) - NIH OITE Postbac Poster Day, MD
2018 Oral Presentation **Judge** in Chemistry & Virology. NCI CCR-FYI, MD
2016 Oral Presentation **Judge** in Chemistry. NCI CCR-FYI, MD
2016 Oral Presentation **Judge** in Chemistry. NCI CCR-FYI, MD
2016 Poster **Judge** in Chemistry. Fairfax County Science Fair, VA
2016 Poster **Judge** in Chemistry. American Association for the Advancement of Science Annual Meeting, D.C.
2016 – 2020 Highschool **Mentor**. Career Readiness and Empowerment of Women, *virtual*
2015 – 2017 Chemical Society of Washington **Volunteer**. Education Outreach Committee, D.C.

Outreach Presentations

2019 **Panelist** for "What Can You Be with a PhD?" (Choosing a Traditional vs Non-Traditional Postdoc). NYU in association with Nature Careers, NY

2019 **Speaker**. Frederick County Public Schools, Secondary Science In-service day, MD
2019 Career **Panelist** for Project SEED. American Chemical Society, D.C.
2019 Summer Student Seminar Series **Speaker**. NCI-Frederick, MD
2018 Diversity Career **Panelist**. Georgetown University, Chemistry Department, D.C.
2016 Career **Panelist** for Project SEED. American Chemical Society, MD
2016 Post-doctoral **Speaker**. NCI Summer Student Orientation, MD

Notable Postdoctoral Scientific Presentations

11/04/2020 – Fred Hutchinson Cancer Research Center – virtual due to COVID-19
HIV-1 Envelope Glycoprotein Trafficking and Viral Transmission
06/19/2020 – American Society for Virology Conference – virtual due to COVID-19
HIV-1 Envelope Glycoprotein Trafficking and Viral Transmission
07/20/2019 – American Society for Virology Conference – University of Minnesota, MN
Role of HIV-1 Env cytoplasmic tail-dependent endosomal trafficking in Env incorporation into virions
04/03/2019 – HIV Dynamics & Replication Program Annual Think Tank – NCI-Frederick, MD
HIV-1 Envelope glycoprotein: molecular mechanisms of incorporation and host factors
07/14/2018 – American Society for Virology Conference – University of Maryland, MD
Role of host cell machinery in Env incorporation.
04/26/2018 – 2018 International Workshop on Structure and Function of the Lentiviral gp41 Cytoplasmic Tail – NCI-Frederick, MD
Role of host cell machinery in Env incorporation.
04/05/2018 – Virology Interest Group Seminar – NIH-Bethesda, MD
Towards a Better Understanding of the Mechanism of HIV-1 Envelope Incorporation.
02/12/2018 – Virology Program Group Meeting – UMD-College Park, MD
Towards a Better Understanding of the Mechanism of HIV-1 Envelope Incorporation.
06/15/2017 – Sallie Rosen Kaplan Discussion Day – NCI-Shady Grove, MD
Role of Rab11-FIP1C in HIV-1 envelope glycoprotein incorporation.

Scientific Publications

1. **Fernandez-de Céspedes MV**, et al. 2022. Rab11-FIP1C Is Dispensable for HIV-1 Replication in Primary CD4+ T Cells, but Its Role Is Cell Type Dependent in Immortalized Human T-Cell Lines. *J Virol*. 96(23):e0087622. PMID: 3654340
2. **Fernandez MV,** et al. 2020. Elucidating the Basis for Permissivity of the MT-4 T-Cell Line to Replication of an HIV-1 Mutant Lacking the gp41 Cytoplasmic Tail. *J Virol*. 94(23):e01334-20. PMID: 32938764
3. Hoffman HK, **Fernandez MV**, et al. 2019. Genomic tagging of endogenous human ESCRT-I complex preserves ESCRT-mediated membrane remodeling functions. *J. Biol. Chem.* 294(44):16266-16281. PMID: 31519756
4. **Fernandez MV**, et al. 2019. Cell authentication analysis of MT-4 cells distributed by the NIH AIDS Reagent Program. *J. Virol.* 93(24). PMID: 31554688
5. Buttler CA, Pezeshkian N, **Fernandez MV**, et al., 2018. Single molecule fate of HIV-1 Envelope reveals late-stage viral lattice incorporation, *Nat. Comm.* 10;9(1):1861. PMID: 29748537
6. **Fernandez MV**, et al. 2016. Ion efflux and influenza infection trigger NLRP3 inflammasome signaling in human dendritic cells. *J. Leukoc. Biol.* 99:723-734. PMID: 26574023
7. **Fernandez MV** and Gardinali PR. 2016. Risk assessment of triazine herbicides in surface waters and bioaccumulation of irgarol and M1 by submerged aquatic vegetation in Southeast Florida. *Sci Total Environ.* 541:1556-1571. PMID: 26490533
8. **Fernandez MV**, et al. 2014. Activation and measurement of NLRP3 inflammasome activity using IL-1β in human monocyte-derived dendritic cells. *J. Vis. Exp.* 87:e51284. PMID: 24894187
9. Manches O, **Fernandez MV**, et al. 2012. Activation of the noncanonical NF-κB pathway by HIV controls a dendritic cell immunoregulatory phenotype. *Proc. Natl. Acad. Sci.* USA 109:14122-14127. PMID: 22879398
10. Landrum JT, Chatfield DC, Mebel AM, Alvarez-Calderon F, **Fernandez MV**. 2010. The conformation of end-groups is one determinant of carotenoid topology suitable for high fidelity molecular recognition: A study of beta- and epsilon- end-groups. *Arch. Biochem. Biophys.* 493:169-174. PMID: 19850003

Reviews and Commentaries:

1. **Fernandez MV** and Freed EO. 2018. Meeting Review: 2018 International Workshop on Structure and Function of the Lentiviral gp41 Cytoplasmic Tail. *Viruses*. 24(5):548-550. PMID: 30405009
2. **Fernandez MV** and Freed EO 2017. "Expand and Click": A New Method for Labeling HIV-1 Envelope Glycoproteins. *Cell Chem. Biol.* 10 (11), 613. PMID: 28525770

Acknowledged in:

1. Dorsey M, et al. 2023. PEGylated Recombinant Adenosine Deaminase Maintains Detoxification and Lymphocyte Counts in Patients with ADA-SCID. *J Clin Immunol*. PMID: 36840835
2. Elalfy ES, et al. 2022. *Blood Adv*. Feb 28;7(4):611-619. PMID: 36018224
3. Lun CM, et al. 2021. Mechanism of Viral Glycoprotein Targeting by Membrane-Associated RING-CH Proteins. *mBio*. Mar 16;12(2):e00219-21. PMID: 33727347