

Ilinca M. Giosan

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EDUCATION

PhD in Biology | Boston University & University of Bucharest

September 2021 – January 2026

- Thesis focus: peripheral role of HDAC6 in chronic and acute pain mechanisms
- Advisors: Venetia Zachariou, PhD & Alexandru Babes, PhD

MA in Biochemistry | CUNY Hunter College, New York, NY

August 2018 – August 2020

- Thesis focus: olfactory receptor mRNA modifications in olfactory neurons
- Advisor: Paul Feinstein, PhD

BA in Chemistry | CUNY Hunter College, New York, NY

August 2014 – May 2018

Concentration in Biochemistry

WORK EXPERIENCE

Non-dilutive Funding and Research Lead | TruDiagnostic (Remote)

Sept 2024 – Present

Led the development, submission, and management of high-impact scientific grants and manuscripts in the field of epigenetics, collaborating with academic and industry partners.

Grant Leadership

- **Grant Writing & Strategy:** Led the writing, editing, and submission of multiple federal grant proposals. Successfully secured a \$320K NIH SBIR Phase I award (Award Number: 1R43AG097165-01) and a \$5K microaward; contributed significantly to proposals submitted to DoD, NIH SBIR, and ARPA-H. Synthesized scientific aims, technical feasibility, budgeting, and timelines into cohesive submissions.
- **ARPA-H Proposal Leadership:** Served as lead project coordinator and primary writer for a \$47M ARPA-H proposal. Oversaw communication, document integration, and alignment of research goals across collaborators from Harvard, Yale, Duke, UCLA, and industry partners. Selected as one of the finalist teams.
- **Grants Administration:** Prepared full application packages including budget spreadsheets, justifications, biosketches, facilities/equipment sections, and letters of support. Managed federal submissions via NIH ASSIST, SAM.gov, and Grants.gov.
- **Grants Project Management:** Developed detailed Gantt charts, tracked milestones, and managed submission timelines for multi-agency proposals. Led internal coordination meetings and maintained alignment across interdisciplinary teams.

Manuscript Development

- **Writing & Coordination:** Directed the development of six scientific manuscripts, overseeing content planning, editing, and formatting. Managed contributions across internal researchers and external collaborators. Co-authored manuscripts with Harvard researchers; several pre-printed, others in late-stage drafting.
- **Mentorship:** Supervised two research interns through manuscript preparation, providing hands-on guidance in literature review, figure design, scientific writing, and formatting for submission.
- **Manuscript Project Management:** Maintained timelines and deliverables for manuscript submissions in parallel with grant schedules. Facilitated communication and version control across co-authors and reviewers.

Additional Responsibilities

- **Collaboration & Communication:** Acted as primary liaison between internal scientific teams and external academic collaborators across both grant and manuscript projects.
- **Technical Tools:** Proficient in Microsoft Office (Excel, Word, PowerPoint) and Google Drive. Familiar with AWS, Claude, and Notion; adaptable to new tools and platforms.

RESEARCH EXPERIENCE

Doctoral Researcher | Laboratory of Dr. Venetia Zachariou, Boston University, Boston, MA

July 2021 – Aug 2024

Studied the role of HDAC6 in the peripheral nervous system in the maintenance and induction of acute and chronic pain models in mice by inhibiting enzymatic activity using pharmacological compounds and genetically modified mouse models.

- **Animal maintenance/models:** Maintained and genotyped mouse colonies. Delivered AAV8 viruses in sciatic nerve of rodents. Performed sciatic nerve injections and assessed the effects of the intervention in various pain models including spared nerve injury (SNI), paw-incision, chemotherapy induced peripheral neuropathy (CIPN), Complete Freund's Adjuvant (CFA). Assessed oxycodone induced hyperalgesia and withdrawal hypersensitivity.
- **Behavioral assays:** Performed behavioral assays to test mechanical allodynia (von Frey, brush stroke assay), thermal hypersensitivity (Hargreaves', cold plantar, cold/hot plate assays), and affective behaviors (open field test, elevated plus maze, marble burying, locomotor activity, and novel object recognition).
- **Molecular assays/microscopy:** Harvested mouse dorsal root ganglia, sciatic nerve, whole brains, and serum for qPCR, Western Blot, and ELISA. Cryostat sectioned whole brains and dorsal root ganglia for RNAscope in-situ hybridization. Imaged using confocal microscopy.
- **Bioinformatics:** Analyzed large RNA-sequencing datasets using Excel and various ontology tools including g:Profiler, Enrichr, and IPA.
- Supervised undergraduate and graduate students through projects and techniques.

Associate Researcher | Laboratory of Dr. Achillefs Ntranos, Mount Sinai, New York, NY

August 2020 – June 2021

Studied the role of cytokines and chemokines in the induction of EAE in mice.

- **Animal maintenance:** Maintained mouse lines.

- **Molecular assays/flow cytometry:** Cultured extracted spleen cells under different conditions and performed intercellular staining of cytokines for flow cytometry analysis. Analyzed data using FlowJo to establish the optimal staining concentrations for flow cytometry analysis. Performed nucleation of cells and assisted in single-cell sequencing.
- Isolated PBMCs from human blood samples.

Graduate Research Assistant | Laboratory of Dr. Harris P. Zeigler, Hunter College, New York, NY **February 2019 – August 2020**

Studied mouse whisking behavior to understand the function of the barrel cortex and how the brain uses information delivered by the whiskers.

- **Animal maintenance/behavioral assays:** Maintained and genotyped mouse lines. Used genetically modified mice to measure their ability to perceive information about their environment using 3-dimensional stimuli, using novel object recognition and y-maze. Studied their feeding patterns over the course of different timepoints.
- **Data analysis:** Collected data using AnyMaze and designed protocols to better suit experimental needs. Collaborated with PhD students to design data analysis programs in MatLab and GraphPad Prism.
- Supervised 4 undergraduate students through individual projects and poster presentations.

Graduate Research Assistant | Laboratory of Dr. Paul Feinstein, Hunter College, New York, NY **May 2017 – July 2020**

Studied neuronal connections and glomeruli formation in the olfactory bulb and olfactory cortex.

- **Cell culture/molecular biology assays:** Maintained, cultured/sub-cultured, and cryopreserved mammalian cell lines. Transfected and electroporated recombinant DNA into cells to understand modifications on olfactory receptors. Transformed recombinant DNA into *E. coli* bacteria. Extracted and purified DNA/RNA for PCR and qPCR for cloning protocols and genotyping protocols.
- **Confocal microscopy:** Live-imaged electroporated cells to understand ligand binding to proteins using confocal microscopy.
- Sectioned mouse brains using cryostat and assisted in immunohistochemistry.
- Supervised 2 students through cloning projects.

PUBLICATIONS

Giosan, I. M., Serafini, R. A., Ramakrishnan, A., Tuffy, M. J., Zimering, J., Babes, A., ... & Zachariou, V. (2025). HDAC6 inhibition ameliorates sensory hypersensitivity and reduces immune cell signatures in the dorsal root ganglia in murine chronic pain models. *Molecular Pharmacology*, 100034.

Giosan, I., Lin, A., Aparicio, A., Guo, T., Balagué-Dobón, L., Carreras-Gallo, N., ... & Dwaraka, V. B. (2025). Uncovering dynamics of age-related epigenetic changes with an interpretable deep-learning framework. *Research Square*. Under Review at *NPJ Aging*.

Gomez J. L., Ventriglia E. N., Frangos Z. J., Sulima A., Robertson M. J., Sacco M. D., Budinich R. C., Giosan I., Xie T., ... & Michaelides M. (2025) "A μ opioid receptor superagonist that produces analgesia with minimal adverse effects". Under review at *Nature*.

Serafini R. A., Giotti B., Luebbbers A., Pryce K. D., **Giosan I. M.**, Tuffy M., Farzinpour Z.,... & Zachariou V. (2025) "RGS4 actions in Dorsal Root Ganglia Regulate Molecular and Behavioral Maladaptations in Murine Pain Models." Under Review at *Science Signaling*.

Serafini, R. A., Frere, J. J., **Giosan, I. M.**, & Nwaneshiudu, C. A. (2025). SARS-CoV-2-induced sensory perturbations: A narrative review of clinical phenotypes, molecular pathologies, and possible interventions. *Brain, Behavior, & Immunity-Health*, 100983.

Carreras-Gallo, N., Chen, Q., Balagué-Dobón, L., Aparicio, A., **Giosan, I. M.**, Dargham, R., ... & Lasky-Su, J. A. (2024). Leveraging DNA methylation to create Epigenetic Biomarker Proxies that inform clinical care: A new framework for Precision Medicine. *medRxiv*.

Pryce, K. D., Serafini, R. A., Ramakrishnan, A., Nicolais, A., **Giosan, I. M.**, Polizu, C., ... & Zachariou, V. (2023). "Oxycodone withdrawal induces HDAC1/HDAC2-dependent transcriptional maladaptations in the reward pathway in a mouse model of peripheral nerve injury." *Nature Neuroscience*, 1-16.

Serafini, R. A., Frere, J. J., Zimering, J., **Giosan, I. M.**, Pryce, K. D., Golyner, I., ... & Zachariou, V. (2023). "SARS-CoV-2 airway infection results in the development of somatosensory abnormalities in a hamster model." *Science Signaling*, 16(784).

CONFERENCE PRESENTATIONS

I. M. Giosan, R. A. Serafini, A. Ramakrishnan, M. Tuffy, L. Shen, V. Zachariou "HDAC6 Inhibition Reduces Immune Cell Signatures in the Dorsal Root Ganglia in Murine Chronic Pain Models." ASPET. Washington DC. May 2024. **Poster Winner.**

I. M. Giosan. "Inhibition of HDAC6 and HDAC1,2 for the management of neuropathic pain." NYC Pain Symposium. May 2023. **Oral Presentation.**

I. M. Giosan, R. A. Serafini, J. Zimering, K. D. Pryce, A. Ramakrishnan, M. Jarpe, M. Tuffy, L. Shen, V. Zachariou. "HDAC6 Inhibitor Action in the Dorsal Root Ganglia Alleviates Allodynia in Peripheral Nerve Injury Model." ASPET. St. Louis. April 2023. **Poster.**

I. M. Giosan, J. Zimering, A. Serafini, K. Pryce, V. Zachariou. "HDAC6 inhibitor action in the dorsal root ganglia alleviates allodynia in peripheral nerve injury model." IASP. Toronto. September 2022. **Poster.**

I. M. Giosan, R. A. Serafini, J. Zimering, K. D. Pryce, A. Ramakrishnan, M. Jarpe, L. Shen, V. Zachariou. "Targeting HDAC6 in the dorsal root ganglia for the management of peripheral nerve injury." ASPET. Philadelphia. April 2022. **Poster.**

ADDITIONAL EXPERIENCE

Adjunct Lecturer | Chemistry Department, Hunter College, New York, NY **2019 – 2020, 2025 – present**

- Taught undergraduate students "Inquiries into the Nature of Matter Laboratory" and "Essentials of Organic Chemistry Laboratory".
- Performed distillation and filtering, recrystallization, titration, liquid chromatography techniques.