

Jesus Espino

Biomedical Engineering BS

Phone: (915) 300-3031

E-mail: jespi753@gmail.com

LinkedIn: <https://www.linkedin.com/in/jesus-espino-30b346214/>

SUMMARY

Recent RIT graduate and upcoming graduate student at the University of Kentucky. Although current B.S. was undertaken in biomedical engineering, expecting to make the transition into computational biology and bioinformatics for future research fields. Prospective fields of interest include computational biology, genomics, developmental biology, and regenerative medicine.

EDUCATION

Rochester Institute of Technology

May 2026, **Bachelor of Science**, Major in Biomedical Engineering, *summa cum laude*

GPA: 3.940/4.0

Notable Coursework: Cell and Molecular Biology for Engineers I & II, Quantitative Physiology I & II, Tissue Engineering, Fundamental Bioinformatics Analysis, Bioinformatics Languages, Biosystems Process Engineering, Intro to Biomaterials Science, Probability and Statistics, Computer Science I

RESEARCH EXPERIENCE

Undergrad. Research Assistant, RIT DNA Computing Research Group, Rochester, NY (Aug. 2024-May 2026)

- Investigated biomedical applications of an implantable biomarker-detection device operated by a toehold-mediated strand displacement (TMSD) artificial neural network (ANN).
 - Planned and executed experiments regarding microfluidic mixing in preparation for device prototyping.
 - Explored blood analogue mixtures used to model viscous and shear-thinning properties of human blood for integration into a microfluidic device.

Undergrad. Research Assistant, RIT Microscale BioSeparations Lab, Rochester, NY (Jan. 2025 - Aug. 2025)

- Led a personal project focused on successfully executing electrokinetic separations of bacterial and yeast cells based on discriminatory characteristics of viable and non-viable cells.
 - Fabricated microfluidic PDMS channels using soft lithography.
 - Maintained plated and suspension cultures of *E. coli*, *S. typhimurium*, *B. cereus*, *B. subtilis*, and *S. cerevisiae* cells.
 - Labelled and imaged cells using live-dead staining assays under fluorescence microscopy.
 - Utilized ImageJ (FIJI) and MATLAB for image manipulation and data analysis of fluorescence signals, including the generation of electropherograms resulting from electrokinetic separations.
 - Prepared a manuscript for my first paper submission based on the findings of the project.

Intern, Process & Analytical Dev., BlueRock Therapeutics, New York, NY (Jul. 2023 - Jan. 2024)

- Developed a personal project in which I evaluated the roles and efficacy of media components in a differentiation process for human iPSCs into MbDA neurons with regards to gene expression profiles.
 - Practiced human iPSC culture and differentiation in 2D and 3D cultures, including bioreactors.
 - Analyzed results from FACS, qPCR, cell counting, metabolites samples, and raw material testing over various timepoints in the differentiation process.
 - Wrote and organized personal Benchling ELN entries.
 - Managed inventories of raw materials and EPSCs cryopreserved in liquid nitrogen.
 - Presented project findings, including the discovery of redundant media components in the differentiation process, as part of a company-wide co-op seminar series.

AWARDS AND HONORS

RIT Presidential Scholar (Fall 2021- Spring 2025)

- Awarded to incoming freshman and current students on the basis of exceptional academic performance and achievements.

RIT Dean's List (Fall 2021 - Fall 2024)

- Maintained a GPA over 3.40 for every semester while attending RIT.

CLUBS AND ORGANIZATIONS

RIT Libraries, Resource Assistant and Student Supervisor (Aug. 2021– May 2026)

- Assist and direct patrons with finding resources within library collections.
- Oversee and train circulation desk staff.
- Contribute to student employee discussions regarding the administration of RIT Libraries.

RIT Biomedical Engineering Society, Member and Mentor (Jan. 2024- May 2025)

- Attended club networking events with students and faculty of RIT's biomedical engineering department.
- Mentored a first-year biomedical engineering student regarding their experiences and future goals within our major.

RIT Biotech Club, Member and Secretary (Aug. 2021– May 2024)

- Participated in club discussions and guest interviews on a variety of subjects concerning areas of research and recent developments in biotechnology.
- Facilitated club activities alongside other executive board students.

PUBLICATIONS

[1] **Espino J,** Mendiola-Escobedo C, Vaghef-Koodehi A, Lapizco-Encinas B. Electrophoresis: An Effective Viability Assessment Method Across Cell Domains. (Accepted by Analytical Chemistry)

SEMINARS AND PRESENTATIONS

[1] 2025 Undergraduate Research Symposium at RIT "Electrokinetic Separation Between Live and Dead Cells" (Rochester, NY, July 2025)