

Randy F. Espinal

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EDUCATION

Bachelor of Science in Biochemistry | GPA 3.48

College of Science and Technology

Expected Graduation: May 2025

Temple University, Philadelphia PA

- Received scholarships and merit-based awards totaling over \$25,000.

RESEARCH EXPERIENCE

Undergraduate Research Assistant

January 2024 - Current

Undergraduate Research Program, Temple University

Principal Investigator: Dr. Eric Borguet

- Zirconium and cerium catalyzed Gly-Gly dipeptide hydrolysis
- Transition metal catalyzed hydrolysis of ATP
- Scientific writing, research proposal, data analysis and research presentations

Lab Assistant

September 2022 – December 2022

Temple Department of Chemistry, Temple University

Lab Coordinator: Dr. John B. Michel

- Assisted the lab coordinator in setting up general chemistry labs.
- Responsible for making copies, filing, and sorting papers as needed.
- Maintained lab equipment by cleaning glassware as needed.

TEACHING EXPERIENCE

Student Success Center Ambassador

August 2024 - Current

Temple Student Success Center, Temple University

- Delivered presentations detailing the tutoring and academic services offered by Temple University's Student Success Center in a lecture setting with class sizes ranging from 20-300 students.
- Participated in multiple tabling events in which the services of the SSC were advertised (Temple Global Gala, Experience Temple Day).

STEM Tutor

January 2023 - Current

Temple Student Success Center, Temple University

- Provided academic support to undergraduate students through one-on-one tutoring sessions for general chemistry courses, organic chemistry I & II, and calculus 1-3.
- Provided training for new tutor hires through in-person and virtual workshops with a focus on the essentials of tutoring and how to help students effectively learn.
- Developed personal, long-term relationships with students to create a safe, comfortable learning environment.

RESEARCH PRESENTATIONS

The 88th Intercollegiate Student Chemists Convention (ISCC), Muhlenberg College

March 2025

Oral Presentation, Inorganic Chemistry Honorable Mention Award

Title: "Catalytic Role of Transition Metals in ATP Hydrolysis"

Authors: [Randy Espinal](#), Thanuka Ralalage, Hao Li, Eric Borguet

CST Undergraduate Research Symposium, Temple University

March 2025

Poster Session

Title: "Zirconium and Cerium Catalyzed ATP Hydrolysis"

Authors: Randy Espinal, Thanuka Ralalage, Hao Li, Eric Borguet

CST Undergraduate Research Symposium, Temple University

November 2024

Poster Session

Title: "Zirconium and Cerium Catalyzed ATP Hydrolysis"

Authors: Randy Espinal, Sharan Dhar, Hao Li, Eric Borguet

RESEARCH INTERESTS

- Heterogenous catalysis
- Signal transduction pathways
- Pharmacokinetics
- Medicinal chemistry

LABORATORY TECHNIQUES

- Ultraviolet Visible Spectroscopy (UV-Vis)
- Fourier-Transform Infrared Spectroscopy (FT-IR)
- Nuclear Magnetic Resonance (^1H NMR and ^{31}P NMR)
- Precise pipetting
- Titrations
- Protein expression and purification
- SDS-Page

LANGUAGES

- English: Native language
- Spanish: Working Proficiency

COMPUTER SKILLS

- Igor Pro
- Microsoft Programs (Excel, Word, PowerPoint)

CERTIFICATIONS

- International Lifeguard Certification (12 ft), Ellis Education Services
- Standard First Aid Certification, Ellis Education Services
- Supplemental Oxygen Support Certification, Ellis Education Services

AWARDS

- Taggart Endowed Scholarship, Temple University (2024)
- Abraham and Ruth Clearfield Scholarship, Temple University (2022, 2023, 2024)
- Diamond Scholarship, Temple University (2021, 2022, 2023, 2024)
- Temple University Honors Program
- Honorable Mention in Inorganic Chemistry, 88th Intercollegiate Student Chemists Convention