Josselyn De León

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Education

Doctor of Philosophy, Chemistry **June 2024 – Present**
Texas A&M University, College Station, Texas

- PhD Candidate May 2026

Bachelor of Science and Arts, Chemistry **May 2024**
The University of Texas at Austin, Austin, Texas
Minor: Business Administration

- University Honors

Research Experience

Graduate Research Assistant **July 2024 – Present**
Texas A&M University, College of Arts and Sciences
Advisor: Prof. Lane A. Baker
Project Title: Miniaturized High-Throughput Electrochemical and Opto-electrochemical Platform for Nanocrystal Catalyst Studies

- Developed micro-Legion, a miniaturized opto-electrochemical platform for high-throughput electrochemical and optical measurements.
- Investigating copper nanocrystal electrodeposition using in situ dark-field microscopy to study nucleation and growth kinetics.
- Applying high-throughput electrochemical screening to optimize nanocrystal catalysts for electrochemical C–N coupling and urea synthesis.

Undergraduate Student Researcher **April 2023 – May 2024**
The University of Texas at Austin, College of Natural Science
Research Advisor: Dr. Michael Rose

- Developed MATLAB simulation tools to model cyclic voltammetry and extract redox potentials of [Fe]-hydrogenase models on silicon (111) surfaces.
- Synthesized lab data into computational workflows, optimizing the extraction of interfacial parameters and charge-transfer properties.
- Engineered the computational framework enabling advanced analysis of semiconductor band structures and interface density of states.

Texas Spacecraft Laboratory **Aug 2021 – May 2024**
The University of Texas at Austin, College of Engineering
Research Advisor: Dr. Brandon Jones

- Dr. Brandon Jones, an associate fellow of the America institute of Aeronautics and Astronautics, led a team of undergraduate students in designing and implementing CubeSat guidance, navigation, and control technology demonstration missions.
- Connected with over 800 students ranging from kindergarten through high school to demonstrate our work and provide insight into the world of science and technology.

Teaching Experience

Analytical Chemistry Teaching Assistant **January 2025 – May 2026**
Texas A&M University, College of Arts and Sciences

- Directed senior-level analytical chemistry laboratory sessions, mastering advanced instrumentation training including High-Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Mass Spectrometry (MS), and Atomic Absorption (AA) spectroscopy.
- Guided upper-level undergraduates through complex quantitative analysis, statistical data validation, and calibration curve methodologies.
- Evaluated technical lab reports, delivering critical feedback on data precision, error analysis, and adherence to scientific writing styles.

General Chemistry Teaching Assistant **August 2024 – December 2024**
Texas A&M University, College of Arts and Sciences

- Facilitated undergraduate chemistry laboratory sessions, training students in rigorous lab safety compliance and proper chemical handling techniques.
- Cultivated a collaborative learning environment through weekly office hours, breaking down complex chemical equations and concepts to improve student comprehension.
- Managed high-volume grading of lab reports and assignments with strict punctuality, delivering actionable feedback to streamline student-faculty communication.

Undergraduate Teaching Assistant **Aug 2022 – May 2023**
The University of Texas at Austin, College of Natural Science
Advisor: Dr. Bill Wolensensky

- Facilitated student learning in Differential Calculus by leading small-group discussions, resolving misconceptions, and providing individualized attention to ensure a more engaging and effective learning experience.
- Designed demonstrations to integrate within the lecture and discussion group to illustrate course concepts.

Publications

1. Ito, I.; Bailey, K. O.; **De Leon, J.**; Harvey, N. F.; Zhang, L.; Baker, L. A. Immersion-Controlled Nanoparticle Electrodeposition on a Patterned Pyrolyzed Photoresist Film Electrode for Single-Entity Electrochemistry Studies Using Scanning Electrochemical Cell Microscopy. Langmuir 2026, 42 (40), 29987-29995. https://doi.org/10.1021/acs.langmuir.6c03912

Presentations

Posters

- **De León, J.**, Jallow, A., Baker, L. Miniaturized High-Throughput Platform for Electrochemical and Optoelectrochemical Studies of Nanocrystal Catalysts. 2026 Pittcon. San Antonio, Tx, March 11th, 2026.

Professional Affiliations

- American Chemical Society (ACS)
- Electrochemical Society (ECS) Texas A&M Chapter
- Society for Electroanalytical Chemistry (SEAC)
- Latinx Graduate Student Association (LGSA) Texas A&M Chapter
- Graduate & Professional Student Government (GPSG)

References

Letters available upon request