

Cesar Isaacs Dominguez

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Education

Ph. D. in Analytical Chemistry – Texas A&M University, College Station, TX 2026 – Present

B.S. in Chemistry – University of Florida, Gainesville, FL 2022 – 2026
Minors in: Physics, Materials Science & Engineering

Research Background

Graduate Researcher – Texas A&M University, College Station, TX 2026 – Present
Supervised by Prof. Lane A. Baker

- Developing expertise in analytical electrochemistry and chemical instrumentation to optimize scanning electrochemical cell microscopy to study metal nanocrystal catalysts.

Undergraduate Researcher – University of Florida, Gainesville, FL 2025 – 2026
Supervised by Prof. Austin M. Evans

- Conducted research in polymer chemistry, using controlled radical polymerization to synthesize ultra-high molecular weight polyacrylates and polyacrylamides which were processed by electrospinning to produce uniform aligned nanofibers.

Awards and Grants

Dr. Dionel Avilés '53 and Dr. James Johnson '67 Fellow 2026 – Present
Funding for high-achieving scholars promising a distinguished career.

Michelin Science Scholar Program 2025 – 2026
Recognition for promising undergraduate researchers in polymer chemistry.

Army Educational Outreach Program Internship 2025
Summer internship to conduct research for the United States Army.

University of Florida College of Liberal Arts and Sciences Dean's List 2023 – 2025
Recognition for outstanding academic achievement.

Florida Bright Futures Academic Scholar 2022 – 2026
Merit-based award due to academic performance and community service.

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Experience

Teaching Assistant – University of Florida, Gainesville FL 2025
Mechanical Engineering Design I

- The course covered fracture and failure prevention of shafts, screws, welds, gears, and so on due to static and variable loading.

Teaching Assistant – University of Florida, Gainesville FL 2024
Introduction to Analytical Chemistry

- Teaching assistant for analytical chemistry, covering topics in statistics, experimental error, electrochemistry, spectrophotometry, and sensors.

Laboratory Safety Manager – University of Florida, Gainesville, FL 2022-2024
Aifantis Lab

- Managed laboratory safety protocols for Prof. Katerina Aifantis' lab, ensuring compliance with safety guidelines established by UF's EH&S.

Community Outreach

Physics Tutor 2023 – 2026
Society of Hispanic Professional Engineers

- Provided individualized tutoring to dozens of students in physics to improve their academic performance.

Battery Recycling Drive 2023 – 2025
Li-ion Next-Generation Batteries at UF

- Initiated a battery recycling drive in collaboration with Prof. Katerina E. Aifantis, George A. Smathers Libraries, and the Miami Herald, collecting and recycling over 200 batteries.

Chemathon Volunteer 2024 – 2026
University of Florida Chemistry Club

- Communicated complex scientific concepts to visiting high school students from across Florida while guiding chemistry lab tours.

Robotics Instructor 2022 – 2023
Society of Hispanic Professional Engineers

- Volunteered to teach a class of 30 fifth-grade students in VEX IQ robotics, guiding them through the full engineering process from design principles to final assembly.

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Publications

1. Stevens, K.; Mali, R.; Ahmed, S.; Marquez, J.; Gao, G.; Lott, M.; Eades, C.; Goswami, S.; **Dominguez, C. I.**; Majumder, A.; Panda, K.; Meyhofer, E.; Malen, J.; McGaughey, A.; Reddy, P.; Evans, A. M.; Sumerlin, B. Reconciling Stereocontrol and Ultra-High Molecular Weight in the Radical Polymerization of Acrylamides (*expected*) **2026**
2. **Dominguez, C. I.**; Marquez, J.D.; Eades, C. B.; Sumerlin, B. S.; Evans, A. M. Electrospinning of Ultra-High Molecular Weight Polymers into Aligned Nanofibers and Their Application in Chemical Separations. *RSC Appl. Polym.* **2026**. <https://doi.org/10.1039/D6LP00187D>

Presentations

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| UF Chemistry Leadership Board Meeting – Gainesville, FL
<i>Oral Presentation</i>
Electrospinning of UHMW Vinyl Polymers | 2026 |
| Michelin Science Scholar Research Presentation – Greenville, SC
<i>Oral Presentation</i>
Electrospinning of UHMW Vinyl Polymers | 2026 |
| Undergraduate Chemistry Research Showcase – Gainesville, FL
<i>Poster Presentation</i>
Increased Thermal Conductivity in Electrospun Ultra-High Molecular Weight Polymer Fibers | 2025 |
| SHPE Undergraduate Research Symposium – Gainesville, FL
<i>Poster Presentation</i>
Using Computer Models to Predict and Prevent Fracture of Battery Materials | 2024 |
| Mechanical and Aerospace Engineering Poster Competition – Gainesville FL,
<i>Poster Presentation</i>
Using Computer Models to Predict and Prevent Fracture of Battery Materials | 2024 |