Three students receive NSF Graduate Research Fellowship Awards

The fellows are changing their fields and lifting up those around them.
Friday, April 18, 2025
Tatiana Overly
UC Irvine Physical Sciences Communications



The new fellows, from left to right: Berenice Rojas, Makayla Luevano and Tré Willingham.

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UC Irvine

Three students from the UC Irvine School of Physical Sciences recently received the prestigious 2025 National Science Foundation Graduate Research Fellowship (NSF

GRFP) award. The fellowship is a five-year program that provides full financial support for three years, and it recognizes outstanding students pursuing research in STEM graduate programs. This year, the NSF awarded half the number of fellowships compared to previous years, making the selection process exceptionally competitive.

“We are very proud of Graduate Research Fellows, who are the embodiment of excellence within the School of Physical Sciences,” said Franklin Dollar, Associate Dean of Graduate Studies and professor in the UCI Department of Physics & Astronomy. “Not only do they pursue research in innovative and impactful fields, they also perform a broad range of mentorship and training efforts aimed at lifting up those around them. When the nation funds these three students, they are investing in the hundreds of other people that these students engage with as well.”

Makayla Luevano, Chemistry

Makayla Luevano is a fourth-year undergraduate student majoring in chemistry who will be enrolling in the Chemistry Ph.D. program at Georgia Tech in the fall, where she’ll work with Dr. Henry La Pierre. Luevano’s work aims to develop a fundamental understanding of the molecular properties and synthetic protocols of lanthanide and actinide elements – elements critical for fields like quantum information science, nuclear waste disposal and medical imaging. Luevano is particularly interested in expanding the known oxidation states of lanthanides – work that could have significant implications for understanding periodic trends and the behavior of chemical elements.

At UC Irvine, Luevano conducts research with Professor William J. Evans on the rare earth elements, working to expand their known reactivity and isolating interesting molecular species to further the field of inorganic synthesis. One day, Luevano hopes to lead her own research group at an academic institution where she can mentor the next generation of scientists.

"Receiving the NSF Graduate Research Fellowship is both an incredible honor and a profound opportunity. Like many others, I have struggled throughout my academic journey, often being met with skepticism based on my lived experience and struggling to find others like me," said Luevano. "Through research and the opportunities presented to me by Professor Evans and my mentors within the lab, I have found a space not only to belong but to make meaningful impact. With this

new support, I’m eager to explore my chemical curiosity to my full potential by continuing to make new and exciting molecules that push the boundaries of our knowledge, while mentoring the next generation of scientists along the way.”

Berenice Rojas, Chemistry

Berenice Rojas is a second-year Ph.D. student studying atmospheric chemistry. Rojas emigrated from Mexico to the U.S. at the age of 12 and was immediately exposed to the health and environmental inequalities faced by the underserved communities in her border community. It was an experience that inspired her to one day pursue research aimed at solving similar environmental challenges, something she made happen as an American Chemical Society (ACS) Bridge Fellow – a program designed to strengthen the pipeline of doctoral students from historically marginalized groups.

"The ACS Bridge Program has played a key role in supporting my transition into graduate school,” said Rojas “Through the program, I've gained a strong sense of community that has been helpful in navigating the early stages of graduate life and building confidence as a first-generation student.”

At UC Irvine, Rojas conducts research with Professor James Smith, focusing on the composition of organic particles emitted from non-tailpipe vehicle emissions, particularly brake wear emissions. Her recent work involves analyzing filter samples collected during controlled laboratory experiments and comparing the chemical profiles with ambient air data from a two-month field campaign near the I-710 freeway in Long Beach. Rojas aims to identify potential organic chemical markers for non-tailpipe emissions so she and others can understand their impacts on human health.

Rojas' goal is to advance our understanding of air pollution, especially in historically underserved communities. She aspires to work as a professor or in a research-focused position in industry where she can mentor future scientists. "Receiving this award is a tremendous honor. The NSF fellowship provides me with resources and support so I can focus on my research and outreach," Rojas said. "It strengthens my commitment to advancing our understanding of organic markers from non-exhaust emissions and inspires me to help drive progress toward a cleaner, healthier and more equitable world."

Tré Willingham, Physics and Astronomy

Tré Willingham is a first-year Ph.D. student in physics, with a concentration in Chemical, Applied, and Materials Physics (ChAMP). As a Cal-Bridge scholar, Willingham is part of a program that supports traditionally underrepresented students from California's community colleges and CSU system in pursuing advanced degrees in the sciences.

Willingham's UC Irvine research focuses on condensed matter physics, which aims to understand the physical properties of materials. Under the guidance of Professor Javier Sanchez-Yamagishi, Willingham explores quantum materials and how compressing them to one or two dimensions confines their electrons, unveiling exotic electronic and structural phenomena. He is currently developing a high-temperature squeezing technique to confine high-melting-point semiconductors, such as germanium, so he can study their behavior at the nanoscale.

After completing his studies, Willingham aspires to establish a laboratory where he can mentor future physicists and explore fundamental questions in condensed matter physics.

"The NSF GRFP is truly a monumental achievement for me. It marks a significant step forward in my career as a researcher, and is not only meaningful for its prestige, but it also gives me the freedom to conduct bold, high-impact quantum materials research," Willingham said. "Having received this award, I am also able to serve as a visible example for others who do not always see themselves reflected in science. I hope it shows what's possible and encourages more young Black men to imagine themselves as future scientists."

2025 NSF GRFP Honorable Mentions

Massee Said Akbar, Physics and Astronomy

Emma Brass, Chemistry

Erin M Eason, Chemistry

Kara Greene, Chemistry

Jay R Krishnan, Physics and Astronomy

Eric Ma, Chemistry

Ava C McIlvaine, Earth System Science

Chad Moorman, Chemistry

Alexis Claire Ravenscroft, Chemistry

Silas Joseph Scribner, Chemistry

Ahoora Tamizifar, Mathematics

Makayla Annette Ward, Earth System Science

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