Seven Physical Sciences students selected as 2023 Rose Hills Foundation Fellows and Scholars

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UCI School of Physical Sciences



Rose Hills Foundation Fellows (from left top row): Christopher Gonzalez, Anneka Miller Casas, Jennifer Sarah Pi, and Bryant Labajo Pahl. Jonathan Rodriguez not pictured.

The Rose Hills Foundation recently awarded five graduate fellowships (each with a stipend of $10,000) and two undergraduate scholarships (each with a stipend of $8,000) to UCI School of Physical Sciences students. This year, the foundation provided funding to 20 graduate and 50 undergraduate students across UCI.

Christopher Michael Gonzalez works with Professor Howard Lee investigating light-matter interactions at the nano scale by designing and fabricating metamaterials to produce novel optical behavior. This is a key step in developing ultra-thin tunable devices for the next generation of nanophotonic devices.

Bryant Labajo Pahl researches paleoclimate using cave stalagmites from Mexico, which he uses to reconstruct historical changes in hydroclimate and temperature.

> “This fellowship will help alleviate costs related to fieldwork and guest research travel,” said Labajo Pahl, who participates in monitoring excursions to help better interpret climate records.

Anneka Miller Casas researches how to improve data acquisition in Two-Dimensional Infrared Spectroscopy (2D IR) and how to apply it to different systems, including polymer films with unique thermal properties and enzymes used to capture carbon dioxide out of the atmosphere.

> “This fellowship means that I can focus on my research this summer,” shared Miller Casas. “This makes an enormous impact on how quickly I will be able to write up my results so that we can affect change in these areas.”

Jennifer Sarah Pi researches the structural properties of von Neumann algebras — mathematical objects originally introduced by John von Neumann in the 1940's to understand the math behind quantum mechanics. These objects have wide-ranging connections to subjects such as ergodic theory, quantum information theory and noncommutative analogs of probability.

> “The Rose Hills Foundation graduate fellowship has enabled me to attend conferences to present my research, to form new research connections and to learn about some of the connections of my field with other areas of specialization, especially in the realms of random matrix theory and quantum information theory,” said Pi.

Jonathan Rodriguez conducts research in mathematical oncology with a focus on Chronic Myeloid Leukemia (CML). CML has highly effective treatment options, but those treatments are only effective in around 90% of patients. Rodriguez employs mathematical models of blood cells interacting with each other to help illuminate why a patient might not respond to treatment, inform potential combination therapies and develop predictive tools for patient outcomes.

> “The Rose Hills Fellowship has been incredible thus far as it has given my family a nice financial cushion that has eased a lot of worries, especially given the cost of everything nowadays.” Rodriguez shared. “Ultimately, the fellowship has given me a nice sense of financial freedom, allowing me to focus more on my research and less on my personal economy.”

2023 Rose Hills Foundation Undergraduate Scholars

Emma Liao, Department of Chemistry

Paula Mendez-Lagunas, Department of Mathematics

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