

Student Profile

Bianca Ceballos – Chemistry PhD Program



Your Time at UCI

What made you decide to pursue a graduate degree?

My interest in science developed because it was an opportunity to work on interesting and important problems that would not only satisfy my curiosity, but also have the potential to influence communities.

Why did you choose to come to UCI?

While making my decision, I was looking for a department where I would be challenged to grow and learn as a student and I found that community at UCI. The UCI chemistry department checked all of my boxes as far as what I wanted to get out of my graduate school experience: 1. Great program with interesting research, 2. Supportive faculty mentors, and 3. Graduate students with a good work life balance.

If you are conducting research, how would you explain your research and its significance to your grandparent?

Nature has discovered that the best way to store and use energy is by making and breaking chemical bonds. Inspired by nature, my friends and I in the Yang group are pursuing artificial photosynthesis technology that uses transition metal catalysts to convert carbon dioxide (CO_2) and water into fuels like hydrogen (H_2) or formic acid (HCO_2H).

My work focuses on the fundamental study of metal hydrides which are key intermediates in the catalytic cycle to do these important fuel forming reactions. By understanding the barriers of the energy landscape for these fuel forming reactions we hope to find new strategies to reach our target products.

What are your hobbies/passions outside of research?

As a first generation graduate student, I have benefited from outreach and mentorship programs. As a result, I have taken up leadership roles on campus where I have contributed to efforts to increase science literacy through outreach programs with the Boys & Girls Club and professional development opportunities for women as the Vice-President of the women in chemistry graduate student club Iota Sigma Pi (ISP). I plan to continue to support women and minorities in science fields through participating in outreach and mentorship programs in addition to my research pursuits.

In my free time I enjoy hiking, camping, and finding new restaurants to try.

Reflections

What advice do you have for a new graduate student in your program?

Don't take failed experiments personally. It's easy to get wrapped up in your mistakes and the things that don't go right in lab. Learn from the mistakes you make and let yourself celebrate the small accomplishments along the way.

Career

How do you hope to make a difference?

I believe in the power of ideas and that any idea, however small or ambitious, can affect positive change in communities. Because of this sentiment, I believe that science plays an important role in public service to allow people to benefit and engage with new scientific ideas or discoveries. I plan to continue to value participation in outreach and mentoring opportunities alongside my research pursuits.