Introducing URC’s new student representatives!
Miranda Roethler and Nicholas Foy

Miranda is a senior, biology major with a marine biology emphasis from Portland, OR.

Nick is a senior, chemistry major from Fullerton, CA.

Miranda's Experience:
I got involved in the URC during the summer of 2016, before my senior year. The URC provided funding for me to conduct an independent research project, looking at the effects of El Niño on temperature-sensitive anchovy species in San Diego Bay. I had a wonderful experience this summer and I am actually continuing my project into this year, as an honors project. I applied to be a URC representative because I think one of Oxy’s strengths as a school is getting undergrads involved in research of all kinds, and I think it’s worthwhile to showcase that, both to underclassmen thinking about getting involved in research and also prospective students. Also, I love talking about marine biology! I’m a research technician in the Vantuna Research Group, Oxy’s marine biology research lab run by Professor Daniel Pondella. Oxy’s strong marine science program continues to grow, and I have loved all of the classes and research opportunities in marine science that Oxy has offered me so far.

Nick’s Experience:
I started doing research 2 years ago with Professor Jeffrey Cannon in the chemistry department working on a total synthesis/methods project in organic chemistry. Since then, I’ve spent two summers at Oxy in the URC Summer Research Program (SRP). I’ve also been funded through the Academic Students Projects (ASP) program for research during the semester. I decided to apply for the URC representative position because I saw a good opportunity to tell prospective students about the culture of undergraduate research at Oxy. I didn’t know about research when I applied here, and I’m very fortunate to have chosen a school that does have such a strong program. Participating in undergraduate research has been transformative for me, and because of it I am applying for graduate schools this fall so that I can continue doing research.

Get involved with the URC! Check out our website:
oxy.edu/undergraduate-research-center

look inside for a recap of 2016!
Kenna Ruis, a biology major, spent her semester studying the rare grasshopper species Microtylopteryx hebardi - a unique species endemic to Costa Rica - with Professor Shana Goffredi as her mentor. Their uniqueness comes from their wide range of diet. While female diets are typically restricted to a few plant species, males of this species have a wide diet range. Kenna analyzed the morphological differences between male and female specimens by creating cross sections of the digestive tract area in the respective female and male bodies. She discovered a difference between the amount of ceca (digestive tissue). In males, the tissue comprised roughly 49% of the total ceca area, however in female it was 56%. She found significance in the size of their external circumference rather than in their internal, as it averaged the same size. Kenna went to Costa Rica as part of a Biology department research group to continue her research.

Cross sections of female grasshopper ceca (#44). Original section (left). Internal ceca circumference (center, green line). External circumference (center, blue line). Tissue area (right, blue shaded).

Cross sections of male grasshopper ceca (#43). Original section (left). Internal ceca circumference (center, green line). External circumference of ceca (center, blue line). Tissue area (right, blue shaded).

The Guise of Liberal Multiculturalism and Repression of Radical Antiracism: Who owns the narrative in the movement for Black liberation at Occidental?

Olivia Davis, a Critical Theory and Social Justice major, wrote about the events that occurred on campus last fall with Professor Donna Maeda as a mentor. “In the fall of 2015, students around the country— and even the world—, joined in solidarity protest— ing instances of institutional racism at their respective universities. Students held walkouts, die-ins, occupations, and even had top-level administrators and a college chancellor resign. [...] How are students of color, specifically black students, having similar experiences of marginalization at their very different institutions[...]? Using materials and interviews collected from Occidental College’s student movement for black liberation, I argue that the false narrative of multiculturalism across college campus’ under the influence of neoliberalism, is to blame for the subsequent student movements and extreme administrative retaliation that has been occurring across the country. Institutions claim to support racial change, but the conflict between the liberal multicultural narrative of the college and radical antiracist narrative of the student movements expose the irreconcilable differences.” Furthermore, Olivia speaks of her research experience as “incredibly empowering to be able to curate a project for a cause that I had been so invested in.” As a non STEM student, she values the opportunity to conduct research.

The Aesthetics of Liberty and Freedom: Labor in Mexican and Soviet Propaganda

Samuel Astorga is a History major, and with the mentorship of Professor Alexandra Puerto, he spent the summer at Oxy comparing Soviet and Mexican propaganda. He used a lens of Marxist criticism because it focuses specifically on questions of labor, and is therefore, “immensely helpful in demonstrating how artistic movements and economic circumstances shaped the “revolutionary” image of the laborer under Mexican and Soviet regimes and how laborers were ideolized in national propaganda.” Sam used art history articles and monographs regarding art and revolutions in the two countries. Ultimately, his research studied the similarities and differences in printed and painted art to prove his thesis that “Mexican and Soviet art sought to create positive representations of labor to prove they had succeeded in creating their socialist ‘utopias.’” He concluded his final research paper writing that “the portrayal of Mexican and Soviet art not only shows political goals, but the inherent conflicts in national identity formation.

Synthesis of an Artificial Electron-Relay for Cytochrome P450

Rebeca Fernandez, a Chemistry major, studied Cytochrome P450. You may ask, what is that? Cytochrome P450 is a ubiquitous protein found in bacteria and ukaroyotes that is investigated by scientists for its use as a catalyst to hydrolyte hydrocarbons. Rebecca writes that it is an “interesting protein because it activates the C-H bond (carbon-hydrogen bond). This reaction is currently one that is very difficult to accomplish and requires heavy chemicals that are both toxic and expensive.” This research has industrial and pharmaceutical applications because this reaction, an alkane to alcholo conversion, would allow for new synthetic pathways of pharmaceutical compounds. Over the course of the summer, Rebecca and other researchers at Oxy with Professor Michael Hill as their mentor, attempted various kinds of catalytic reactions. Although she graduated from Oxy, others from her research team will continue the research. Lastly, she said, “working late in the lab was one of the most satisfying things I have done during my time at Oxy.”
URC Deadlines to Note

**December**

2 NCUR Abstract Submission deadline  
5 First Spring semester ASP application deadline *

**January**

23 NCUR Notifications of Decision on Abstracts and online registration opens (link to register will be posted when available)  
30 Second [final] Spring ASP application deadline *  
ASP Conference Travel for NCUR 2017 application deadline*

**February**

1 Summer Research Program (SRP) 2017 Info Session 12-1:30pm  
3 Fall Semester funding final reports due email to urc@oxy.edu  
10 SRP 2017 application deadline*

*all applications are due @ 4pm on deadline dates

Contact us!  
Email: urc@oxy.edu Phone: (323)259-1414  
Location: Library, 2nd Floor, Old Wing, Room 253A  
Website: oxy.edu/undergraduate-research-center

Interested?! Learn more at: cur.org/ncur2017