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2014 CSUPERB Report to the Doris A. Howell Foundation

CSUPERB's mission is to develop a professional biotechnology workforce by mobilizing and supporting collaborative CSU student and faculty research, innovating educational practices, and responding to and anticipating the needs of the life sciences industry.

Celebrating and Supporting Undergraduate Researchers

Looking back over four years of final reports from Howell-CSUPERB Scholars (2008-2014), 98.7% either graduated or continued in their degree programs. This graduation rate is over three times greater than the average CSU science, technology, engineering and math (STEM) graduation rates.

November 2014

Program Highlights

• Between 2001-2014 the Doris A. Howell Foundation for Women’s Health Research and CSUPERB jointly awarded a total of $403,355 to 141 CSU undergraduate researchers

• Alicia Zamudio Montes de Oca (San Diego State University, 2013 Scholar) received a Barry Goldwater Scholarship and Excellence in Education Honorable Mention.

• Charles Mordaunt (CSU Fullerton, 2013 Scholar) is now a PhD student in the Biochemistry, Molecular, Cellular, and Developmental Biology graduate program at UC Davis.

• Matthew Dalphin (CSU Fullerton, 2014 Scholar) is now a doctoral student in the biophysics program at University of Wisconsin, Madison.

• Matthew Siracusa (CSU Fullerton, 2014 Scholar) was chosen to present as a Glen Nagel Award Finalist at the 2014 CSUPERB Research Symposium and went on to present his work at the 2013 Experimental Biology Conference in Boston.

• Kenya Covarrubias (CSU Fresno, 2013 Scholar) was selected to carry out collaborative research with faculty and students in the Physical Sciences and Mathematics Departments at Chiang Mai University, Thailand.

• Laura McIntyre (San Diego State University, 2013 Scholar) is now a doctoral student in the cell and molecular biology program at UC Irvine.
PROGRAM AT-A-GLANCE

Howell Scholars graduate or continue in college at much higher rates (98.7%) than STEM students overall at California State University campuses.

Howell Scholars spent significant extra-curricular hours in research laboratories each week; they work hard at becoming scientists while still full-time students.

Howell Scholars make significant gains building skills and perspective needed to become biomedical scientists and clinicians during their tenure as scholars (usually one-two academic terms). Undergraduate research experiences are high-impact experiential learning opportunities.

Data based on final reports from 2012-2014 scholars (n=35)

Between 2001-2014, the Howell Foundation and CSUPERB have jointly funded a total of $403,355 in scholarships to 141 undergraduate CSU students at 20 campuses across California.
Notable Quotes from 2013 and 2014 Howell-CSUPERB Research Scholars

“The Doris A. Howell Foundation grant allowed me fully immerse myself in my research rather than divide my time between research and a part time job. It allowed for a flexible research schedule amid my classes. It also had an enormous impact on the level of confidence I have regarding my research skills. After this experience I definitely feel capable of pursuing and succeeding in a career involving medical research.” – Kenya Covarrubias (CSU Fresno, 2013 Scholar)

“I simply want to say thank you to my donor. You granted me an opportunity that would have been impossible without you. Your generosity will never be forgotten. Thank you for allowing me to participate in a research project which I could present at a conference, as well as help with funding my education.” - Ashley Moran (CSU Long Beach, 2013 Scholar)

“The experience that stands out most to me was the opportunity to attend a Howell luncheon and meet Dr. Howell and the other members of the Foundation. The experience was so inspirational and it meant so much to be able to share that opportunity with my mentor, Dr. Doran. It was truly an honor to be in the presence of so many proponents of women’s health.” – Erin Fletcher (San Diego State University, 2013 Scholar)

“… I was able to gain experience in the lab setting that I never would have obtained through my undergraduate studies alone. By participating in research, I have learned how to work with others as a team, how to read publications and apply the information to my own experimentation, and how to handle situations where experiments do not work as planned where it is necessary to apply other methods. I was able to attend research symposiums where I was able to learn about others’ research all over the state and the world. By working as a research scholar, I have become a better student, a better scientist, and more of a well-rounded individual.” - Samariah Bautch (CSU Fresno, 2014 Scholar)

“… investigating the affect of alterations in channels transporting calcium in cardiomyocytes, my knowledge of women’s health was enhanced. I am a woman and like many others I thought heart disease was something only a man had to worry about. In actuality, heart disease is the leading cause of death among American women. Now more than ever, I understand the importance of having female researchers investigate diseases that affect women. I want to be one of those researchers so that one day my research might help improve the quality of life of women.” - Amanda Brambila (San Diego State University, 2014 Scholar)

“The biggest and most valuable part of this experience has been my increase in confidence and self-efficacy. From coming up with creative solutions to problems we encountered to building my presentation and speaking skills, I feel like I have grown as a student, researcher and a person. I now feel confident in my ability to see the "big picture" idea of sexual health and see how it translates into education, clinical practice, social media, pop culture, and research...I feel confident in my ability to peer educate people my age, my ability to have serious discussions with other professionals such as my mentor, and to present my ideas and defend my research decisions with clinicians such as the Medical Director of the Health Center. My transformation from mentee to independent researcher in only a short semester has proven to me that I have capabilities that I never thought possible.” - Cassandra Porter (CSU Chico, 2014 Scholar)

“A memory that I will always remember during my time as a Howell-CSUPERB scholar was when I presented my data to my lab. The results were amazing and… the whole lab was blown away. My lab members gave me great compliments and my advisor, Roland Wolkowicz, said he had goosebumps at how good the results were. I was surprised at the lab’s response and at that time I first felt like a real science researcher. I am very grateful to Howell-CSUPERB program for this amazing experience.” – Yen Luu (San Diego State University, 2014 Scholar)
CSUPERB partners with the Doris A. Howell Foundation for Women’s Health Research to jointly fund promising undergraduate student research projects in topics related to women’s health. Together the Howell Foundation and CSUPERB recognize that research experience is critical to engaging, retaining and graduating students interested in careers in women’s health. Oftentimes undergraduate research experiences offer students’ their first opportunity to “feel like a scientist.”

Program Goals: The Howell Foundation and CSUPERB grant $3500 scholarships to undergraduate students to support mentored research experiences. The sponsors hope for (1) increased persistence and graduation rates and (2) stronger desire on the students’ part to continue in women’s health research, whether that means continuing on in graduate school, medical school, or a job in an organization addressing women’s health issues. To address the second success metric, the final report surveys were expanded in 2012 to assess student attitudes. Based on the Scholars’ final reports, the program is meeting both goals.

Applicant Demographics: 91.3% Scholars (2012-2014) do not have family members or close friends who work as a biotech, clinical or biomedical professional. 91% had research experience before becoming a Howell Scholar (14% had previously worked full-time over a summer). Scholars (2012-2014) are African American (4%), Asian (26%), Latina/o (22%) and White/Caucasian (48%).

Persistence Toward Degree and Continuation in Relevant Career Paths: 98.7% of Howell-CSUPERB Scholars (2008-2014) graduated or continued in their degree programs – three times greater rates than the average CSU STEM retention and graduation rates. Since 2009 we have asked Howell-CSUPERB Scholars about their future plans. 96% (76) of the Scholars report they plan to follow research or medical careers.

Sponsored Student Reviews: 98% of Scholars (2008-2014) report being satisfied/very satisfied with the experience.

CSUPERB is quite pleased with these outcomes and is committed to continuing this impactful program to encourage more students to engage in women’s health research.

Matthew Siracusa (CSU Fullerton, 2014 Scholar) was selected as a finalist for the CSU system-wide Glen Nagel Undergraduate Research Award competition. He presented his research results at the 26th annual CSU Biotechnology Symposium at the Santa Clara Marriott.

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Please find the complete Howell-CSUPERB program information on the CSUPERB website:
http://www.calsite.edu/csuperb/awards/howell-about.shtml