

UC SANTA BARBARA

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UCSB Receives \$3.2 Stem Cell Grant From State

The University of California, Santa Barbara will receive \$3.2 million from the California Institute for Regenerative Medicine (CIRM) in support of the development of a state-of-the-art facility in the newly established Center for Stem Cell Biology and Engineering at UCSB, according to an announcement by CIRM today. The renovation project has a total budget of \$6.3 million. A website about the center is located at: <http://www.stemcell.ucsb.edu/>.

Research in the new center addresses challenging problems in stem cell biology related to the molecular mechanisms of pluripotency (the ability of the stem cell to become any other type of cell in the body), self renewal and differentiation, using both human embryonic stem cells, induced pluripotent stem cells, and stem cells in simpler organisms. Bioengineering research in the center will investigate novel methods for stem cell growth, differentiation, sorting and delivery, via interdisciplinary application of novel technologies in biomaterials, nanosystems, micro-processing and systems biology.

The long-term goal of the center is the development of stem cell-based therapeutics for a range of human diseases.

"The CIRM Special Project will provide crucial funding that will greatly stimulate growth of stem cell research on the UCSB campus," said Dennis Clegg, chair of the Department of Cellular, Molecular and Developmental Biology (MCDB). "It will

facilitate new, interdisciplinary research projects that would otherwise be impossible due to federal restrictions and lack of suitable space."

The UC Santa Barbara project will encompass renovation of 10,337 square feet in the building called Biological Sciences 2, a seven story building in the biology corridor of campus.

"With this CIRM grant, we will build a state-of-the-art laboratory facility as the centerpiece of the new Center for Stem Cell Biology and Engineering," said Michael Witherell, Vice Chancellor for Research. "The completion of this project will be a very important milestone for stem cell research at UCSB. We are ready to go."

The mission of the center is to foster interdisciplinary stem cell research and teaching; to support collaboration and exchange of ideas among a wide range of disciplines; and to provide a platform for growth in the emerging field of regenerative medicine. UCSB has entered into a collaborative agreement with five institutions to form the Southern California Stem Cell Scientific Collaboration (SC3), which will allow for shared expertise and facilities. Multiple collaborations with California biotechnology companies, already under way, will result in rapid translation and application of the research.

Renovation on parts of three floors will accommodate the following three program elements:

- Space for collaborative work with James Thomson, a preeminent stem cell scientist and adjunct professor at UCSB, who is increasing collaborative research with UCSB molecular biologists. Thomson was the first to isolate human embryonic stem cells, in 1998, and has continued to be a leader in the field of stem cell research, most recently when he showed that human skin cells can be reprogrammed to a pluripotent state. Thomson is establishing a satellite laboratory at UCSB, while maintaining his position as the John D. MacArthur Professor of Anatomy at the School of Medicine and Public Health, and Director of Regenerative Medicine of the Morgridge Institute, at the University of Wisconsin, Madison.
- Space for two new distinguished faculty members who will hold the Ruth Garland Chair, in the area of molecular mechanisms, and the Mellichamp Chair, in the area of bioengineering.

· Renovation of space for core facilities. These include an innovative "Deep Sequencing Core," equipment rooms, meeting rooms, and offices. The Deep Sequencing Core will house a high throughput sequencing apparatus that will enable important new molecular genetic approaches to key questions. These core facilities will be used by 25 current UCSB researchers with ongoing stem cell projects, as well as newly recruited faculty members.

CIRM, the funding agency, was established in 2004 with the passage of Proposition 71, the California Stem Cell Research and Cures Act. The statewide ballot measure, which provided \$3 billion in funding for stem cell research at California universities and research institutions, was overwhelmingly approved by voters. It called for the establishment of an entity to make grants and provide loans for stem cell research, research facilities, and other vital research opportunities. To date, the CIRM governing board has approved 156 research grants totaling almost \$260 million, making CIRM the largest source of funding for human embryonic stem cell research in the world. For more information, please visit www.cirm.ca.gov.

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