

## UCSB research hub could spawn major medical breakthroughs

By SARA BUSH, NEWS-PRESS CORRESPONDENT

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A state-of-the-art new research facility at UCSB will do more than simply house a bioengineering department on campus.

The new building could be the birthplace of a cure for cancer or other radical medical breakthroughs.

"Our research in bioengineering will have profound impact on the field of medicine with broad implications for society through improved understanding, diagnosis and treatment of disease," said Frank Doyle, associate dean for research, College of Engineering.

The three-story, 48,000-square-foot building will house the university's Center for BioEngineering and Institute for Collaborative Biotechnologies. It will contain 15 faculty offices, several conference rooms, an auditorium, a classroom, and laboratory space for as many as 110 researchers.

UCSB recently secured funds for the project, nearly four years after plans were approved by University of California Regents. The economic downturn put construction on hold but UCSB Chancellor Henry T. Yang's recently secured \$26.5 million in state funding.

The rest of the money for the \$74.3 million dollar project will come from Garamendi bonds, which allow the university to pay off the bonds using revenues gained from the research done in the building.

Officials expect to break ground on the project this summer near the southeast corner of the UCSB library.

The purpose of the "research hub" is to pull together students and faculty members from multiple disciplines. Dr. Doyle said that type of collaboration has been happening on campus for decades, but sometimes it's a matter of luck that researchers and research groups with complementary research find each other and work together.

In 2007 the Chronicle of Higher Education ranked UCSB second in the nation for its biomedical engineering research impact, but the hub will take bioengineering on campus to the next level, said Samir Mitragotri, professor of chemical engineering and founder of the university's Center for BioEngineering.

Researchers involved in cross-disciplinary collaborations on and off campus have already accomplished amazing feats. For example, in Dr. Mitragotri's lab, researchers developed nanoparticles to selectively deliver chemotherapy to tumors with minimal impact to healthy tissue. And in Dr. Doyle's lab, researchers have created an artificial pancreas that can deliver optimal doses of insulin to diabetes patients without constant blood-glucose testing.

"The building is going to try to pull in those researchers so there's a better chance of amplifying or accelerating projects and studies with the same kinds of focus," said Dr. Doyle.

The new facility may make it easier to create an undergraduate major and a Ph.D. program in bioengineering. UCSB only offers an undergrad concentration in bioengineering through its College of Creative Studies, and a Ph.D. emphasis in bioengineering.

A student interested in the field would have to study another course and pick up the concentration or emphasis, Dr. Doyle said.



Professors Frank Doyle, left, and Samir Mitragotri stand in the future location of a state-of-the-art bioengineering research hub at UCSB. They expect the hub to lead to a new undergraduate major and doctoral program while benefiting the South Coast economy.

PETER VANDENBELT PHOTO

Having a research hub could make UCSB more competitive in the bioengineering field, where there are a growing number of job opportunities worldwide, he said.

A report released by the U.S. Department of Labor's Bureau of Labor Statistics estimates 62 percent job growth in the field from 2010 to 2020.

"This investment in campus resources reflects UCSB's growing prominence in research at the interface of the life sciences and engineering. We already enjoy a reputation for research excellence in these fields but this investment will ensure that we continue to grow and excel in our endeavors as they require more complex laboratory facilities to conduct the research," Dr. Doyle said.

The new hub also could have an impact on the local community, although it is not yet clear what kind of new jobs the new facility might generate, Dr. Doyle said.

Because bioengineering is a technology-driven discipline, there is potential for tech spinoffs that start at UCSB, then incubate and grow in the community, he explained.

"So, directly and indirectly, there are possibilities for the regional economy to benefit," Dr. Doyle said.

email: [news@newspress.com](mailto:news@newspress.com)