

Fueling a Healthy Economy

Health is big business in San Francisco, accounting for 20 percent of the city's workforce and contributing \$28 billion annually to its economy – more than tourism or technology – according to a 2014 economic impact report.

UC San Francisco plays a huge role in that vast sector. Founded 150 years ago, UCSF is now the city's second-largest employer, with nearly 23,000 faculty and staff. Before the end of the decade, various stakeholders will invest close to \$5 billion in the construction of five new medical centers, including UCSF Medical Center at Mission Bay.

UCSF also is recognized for its catalytic role in spinning off biotech companies at Mission Bay, including QB3, a consortium run by UCSF, UC Berkeley, and UC Santa Cruz. UCSF Mission Bay is now a \$31-billion, 60-acre campus and represents the largest single redevelopment project in the city.



A FISHY FIX FOR INFLAMMATION

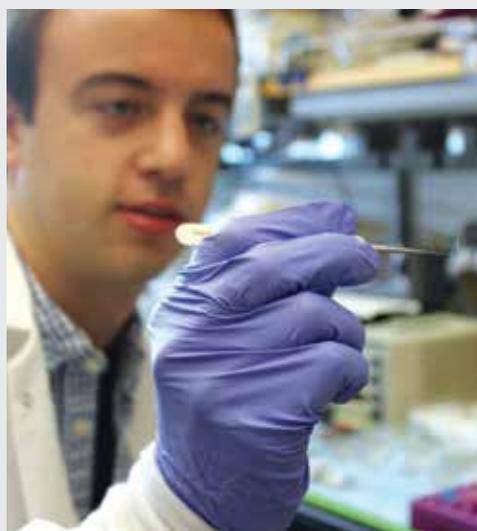
Doctors implant more than a half million stents annually to prop open patients' blocked arteries and restore their blood flow. But often, inflammation triggers a process that reblocks the vessel as the area heals. UC San Francisco researchers are exploring ways to halt that process using potent compounds produced naturally from fish oil.

Following an injury, the body first generates compounds that promote inflammation and then a second set of compounds that stop or resolve the inflammation. Fish oil contains eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), two omega-3 fatty acids that are the key precursors for the "pro-resolving" signaling compounds.

Michael Conte, MD, chief of vascular and endovascular surgery – with collaborators Tejal Desai, PhD '98, chair of UCSF's Department of Bioengineering and Therapeutic Sciences, and Charles Serhan, MD, of Harvard University – is developing ways to deliver these compounds to prevent ongoing inflammation in stented blood vessels.

Desai's lab focuses on therapeutic microtechnology and nanotechnology, including stents with unique surface textures that can reduce reblockage and absorb the fish oil-derived compound, allowing it to slowly disperse into the artery.

"This idea has huge potential," says Conte, who holds the Edwin J. Wylie, MD, Chair in Vascular Surgery. "The development of devices that could locally deliver these naturally occurring compounds to improve artery healing could have a broad impact in cardiovascular medicine and surgery."



Graduate student Kevin Lance holds up a tiny "wrap."