



# Retinal Engineering Center

## **Co-directors**

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The mission of the **Retinal Engineering Center (REC)** is to combine the wealth of engineering and medical expertise and resources in the San Diego area to develop a retinal implant capable of restoring vision to patients suffering from any of several retinal diseases. There is a paramount need for such a device, especially given the growing elderly population prone to the most common form of retinal disease: age-related macular degeneration. Improved retinal prostheses will also benefit those suffering from the second most common retinal disease: retinitis pigmentosa, which affects all age groups, notably children with a genetic predisposition.

REC leverages the unique light-detecting and neural-interfacing nanotechnologies developed at UC San Diego. While harnessing the eye's natural capacities, these nanotechnologies are capable of addressing several fundamental challenges plaguing patients who have existing retinal implants.

Building on the interdisciplinary collaborations between the Jacob's School of Engineering and the School of Medicine, REC's research will include nanophotonics, microfabrication, medical device packaging, power and wireless telemetry, neuronal stimulation, and biological interfaces.

REC aims at producing a high-density, high-resolution, long-term visual prosthesis that enables blind patients to perform basic tasks. The effort will provide the UC San Diego community an opportunity to directly contribute to a medical device that will improve the quality of life for patients of all ages. This will help motivate student involvement and prepare young bioengineers for jobs in the medical industry. In addition, the project will create opportunities for patenting technologies developed at UCSD.

