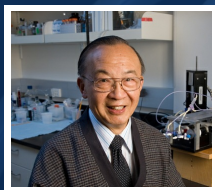


Tackling Cardiovascular Disease



Shu Chien

Director, Institute of Engineering in Medicine University Professor, Medicine Professor, Bioengineering and Medicine

CURRENT RESEARCH

Combining medicine and engineering to discover treatments for cardiovascular disease

Cardiovascular diseases such as heart attack and stroke are major causes of morbidity and mortality. According to the CDC, heart disease is the leading cause of death in the United States with approximately 600,000 deaths per year, accounting for one in every four deaths in the US. Improvements in the diagnosis, treatment and prevention of these diseases will benefit countless people, and the resulting improvements in patient health, well-being and productivity will have a major impact on society. Dr. Shu Chien of the University of California, San Diego's Institute of Engineering in Medicine is studying how vessel geometry and pressure affect flow patterns, and how that in turn affects gene and protein expressions in cells lining the blood vessels. This highly interdisciplinary work brings together engineering, biology and medicine to address the major health issue of cardiovascular disease and solve important clinical problems. His research spans from fundamental studies aimed at understanding the mechanisms that govern circulatory regulation to the clinical translation of novel discoveries. The results uncovered by this research have numerous implications for general cardiovascular health, both in the development of preventative measures as well as guidance for surgeons who are tasked with reconstructing or reconnecting vessels in the body. The strides Dr. Chien has made in this field were recognized by President Obama when in 2011 Dr. Chien was awarded the National Medal of Science, the only recipient out of seven nationwide who researches in an engineering discipline. Cardiovascular disease is a widespread problem that results in the death of more people than any other condition, and Dr. Chien is attacking this...

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AFFILIATION

 University of California, San Diego

EDUCATION

- Ph.D. in Department of Physiology, 1957
Columbia University
- M.D. in College of Medicine, 1953
National Taiwan University

AWARDS

- Roger Revelle Award, UCSD, 2014
- National Medal of Science, National Science Foundation, 2011
- Presidential Prize in Life Sciences, Taiwan, ROC, 2009
- Founders' Award, National Academy of Engineering, 2006
- Lifetime Achievement Award, Society of Chinese Bioscientists in America, 206
- and 1 more...

RESEARCH AREAS

Life Science, Cardiovascular, Regenerative Medicine, Stem Cell

FUNDING REQUEST

Your contributions will allow Dr. Chien to expand his research and develop experiments that extensively research the effects of blood flow dynamics. Human resources continue to be an extremely valuable resource for Dr. Chien's research, and acquiring enthusiastic young talent is an important element of success. Funding will enable the acquired talent to contribute to the development of the desired method of treatment for major cardiovascular diseases.