

Institute for Advanced Study

Distinguished Speakers Series

Biomedical Sciences in the New Century

Professor Shu Chien

University of California at San Diego

About the speaker:

Professor Shu Chien joined UCSD in 1988 and became the founding chair of the Department of Bioengineering in 1994. As principal investigator on the Whitaker Foundation Development Award (1993) and Leadership Award (1998), Professor Chien played a major role in establishing UCSD's bioengineering program as one of the top two programs in the United States. As founding Director of the Whitaker Institute of Biomedical Engineering at UCSD, he helps foster collaborations among the faculty of UCSD and with research institutes and biomedical companies in San Diego. In September 2006, Professor Chien was named the inaugural holder of the Y.C. Fung Endowed Chair in Bioengineering at the UCSD Jacobs School of Engineering. He is a member of the US National Academy of Sciences, US National Academy of Engineering, American Academy of Arts and Sciences, and the Institute of Medicine. Professor Chien co-founded Celladon Corporation and serves as a consultant to AVIVA Biosciences and BioDuro. He received his MD from the National Taiwan University and his PhD in Physiology from Columbia University, where he was a professor from 1969 to 1988.

Professor Chien's research focuses on how the forces of blood flow impact the cardiovascular system. His studies are leading to new understanding about the onset of atherosclerosis and hypertension, and to experimental treatments for heart disease using gene therapy and engineered tissue. At the molecular level, he is discovering how mechanical forces signal gene expression to cause cell growth, migration and cell death. Most recently, UCSD was issued a US patent for his proposed gene therapy to prevent arteries from re-clogging after balloon angioplasty and bypass surgery. Professor Chien takes a multidisciplinary, integrative approach that combines engineering and biomedical sciences. He employs an array of technologies including nanotechnology, DNA microarrays, bioinformatics, cell biophysics and biomechanics in his research.