Tu/Thur. | 12:00-1:20p.| Paul Berg Hall and SIM1 G1002
Teaching the future leaders in medicine!
3 Credits
Fall 2015 & Winter 2016

The focus of MED223 is to fine tune critical thinking skills by analyzing original publications and understand the current complexities of the cardiovascular system. Students will attend a lecture series presented by prominent external speakers on Tuesday’s and learn new approaches and medical advances from Stanford faculty on Thursday’s. Assigned reading will be discussed and interpreted in class (1-2 papers per class).

Make up class: October 27th | Cardiovascuclar Institute Retreat
http://med.stanford.edu/cvi/support-our-research/2015-cv-research-at-stanford.html
Lecture Date: 09/24/2015
Education & Training
MD, University of Birmingham
Internship, Mount Auburn / Harvard Medical School
Fellowship, UCLA - School of Medicine
Internship, University of Birmingham

I direct the Computational Arrhythmia Research Laboratory, whose goal is to define the mechanisms underlying complex human heart rhythm disorders, to develop bio-engineering-focused solutions to improve therapy that will be tested in clinical trials. The laboratory has been funded continuously since 2001 by the National Institutes of Health, AHA and ACC, and interlinks a disease-focused group of clinicians, computational physicists, bioengineers and trialists.

Lecture Date: 10/01/2015
Education & Training
Ph.D, Stanford University, Electrical Engineering
M.D, Stanford University, Medicine
Fellowship, Stanford University Medical Center
Residency, Stanford University Medical Center

Stanford researchers are creating a micro-device that physicians could guide through the body to help diagnose and treat clogged arteries and other diseases. Tethered to the outside world by a thin wire, a tiny machine creeps through blood vessels, searching out deadly plaques and obliterating them with a zap of a laser. While a laser will come later, I am focusing on a tiny eye that could give physicians an unprecedented view into blood vessels.

Lecture Date: 10/08/2015
Education & Training:
MD, Harvard University, Medicine
Fellowship, University of California San Francisco, General Cardiology
Residency, University of California San Francisco, Internal Medicine

My clinical research interests include the evaluation of donors and recipients for heart transplantation; mechanisms of adverse outcomes after heart transplantation, including cardiac allograft vasculopathy and antibody-mediated rejection; and development of non-invasive diagnostic approaches for post-transplant monitoring.

Lecture Date: 10/22/2015
Education & Training:
PhD: McGill University, Epidemiology & Biostatistics
MD: McGill University
Fellowship: Stanford University
Residency: McGill University Health Center

Research: Genetic Epidemiology, Genetic Determinants of Complex Traits related to Cardiovascular Medicine, Coronary Artery Disease related pathway analyses and integrative genomics, Mendelian randomization studies, risk prediction for major adverse cardiovascular events, cardiovascular medicine related pharmacogenomics, ethnic differences in the determinants of Insulin Mediated Glucose Uptake, pharmacoepidemiology of cardiovascular drugs & outcomes

Lecture Date: 10/29/2015
Education & Training:
MD: University of Birmingham
Internship: Mount Auburn / Harvard Medical School
Fellowship: UCLA - School of Medicine
Internship: University of Birmingham

My research applies imaging technology to translate promising basic science findings into clinical application and to better understand the pathophysiology of coronary artery disease in men and women.

Lecture Date: 11/05/2015
Education & Training:
MD: University of Birmingham
Internship: Mount Auburn / Harvard Medical School
Fellowship: UCLA - School of Medicine
Internship: University of Birmingham

All things considered: Cost-Effective Analysis, especially of new technology, Clinical Outcomes, Research Randomized Clinical Trials with cost, quality of life endpoints (coronary angioplasty, stents, and bypass surgery; diabetes management), Clinical Guidelines Development
Patient Outcomes Research in Cardiac Arrhythmias.
My area of professional expertise is living matter physics, the creation of theoretical and computational models to predict the acute and chronic response of living structures to environmental changes during development and disease progression. My specific interest is the multiscale modeling of growth and remodeling, the study of how living matter adapts its form and function to changes in mechanical loading, and how this adaptation can be traced back to structural alterations on the cellular or molecular levels.

My group successfully established primary 3D organoid cultures of diverse tissues and used them to achieve the first in vitro conversion of primary intestine, stomach and pancreas tissue to adenocarcinoma. These organoid systems comprise a robust in vitro system which we are exploiting for the functional validation of putative oncogenic loci which are identified in whole-genome cancer surveys such as TCGA. We collaborate extensively with systems biologists to interrogate large-scale cancer genomics datasets in organoids. We are also applying organoid models to cancer drug discovery.