New Faculty Recruitment

Latha Palaniappan, MD, MS was recently recruited by the Cardiovascular Institute, Stanford Primary Care and Population Health, and Cardiovascular Medicine as a new faculty member. Her innovative research focuses on health disparities, epidemiology, and prevention. She will be focusing her clinical efforts on Precision Health in Primary Care, working with colleagues at Stanford to start evidence based genetic and pharmacogenetic testing in primary care. Prior to this role, she was the Medical Director of Clinical Research at Palo Alto Medical Foundation (PAMF) and co-founder of the Prevention and Awareness for South Asians program (PRANA).

Natalie Lui, MD, MAS is joining the Division of Thoracic Surgery as an Assistant Professor. She studied physics as an undergraduate at Harvard and attended medical school at Johns Hopkins University. She completed residency in General Surgery at the University of California, San Francisco, including research in the UCSF Thoracic Oncology Laboratory and a Masters in Advanced Studies in clinical research. She did her fellowship in Thoracic Surgery at Massachusetts General Hospital, including visiting rotations at Memorial Sloan Kettering and the Mayo Clinic. Her clinical focus extends to all aspects of general thoracic surgical diseases, and her research focus is in thoracic oncology.

Division of Pediatric Cardiology in the Department of Pediatrics is pleased to announce **Lillian Su, MD** as Clinical Assistant Professor. Dr. Su is a pediatric cardiac intensivist, and her clinical responsibilities will be focused in the Cardiovascular Intensive Care Unit (CVICU) at Lucile Packard Children's Hospital. Her research interests focus on the utilization of simulation training and education to improve patient care and team functionality in the critical care environment. Dr. Su will also lead the Children's Heart Center Simulation Program as its Medical Director.

CVI Welcomes New Associate Director, Hana Lee, MPH

CVI is excited to welcome Hana Lee, MPH, as the new Associate Director. Previously, she was the Director of Strategic Initiatives at the Stanford Center for Population Health Sciences and an epidemiologist at the University of California, San Francisco. She received M.P.H in Epidemiology/Health Policy and Management at the Johns Hopkins Bloomberg School of Public Health and B.A. in Psychology at the University of San Francisco. Her broad expertise, creativity, and enthusiasm for strategic discoveries will be an asset to the growth and diversity of the Stanford Cardiovascular Institute.

Save the Date: UPCOMING CVI SYMPOSIA

PCBC Workshop: Stem and Progenitor Cells in Cardiovascular Precision Medicine
APRIL 25, 2017

2nd Annual Stanford Drug Discovery Conference
APRIL 24, 2017

CARDIOVASCULAR RESEARCH SYMPOSIUM
MAY 21-23, 2017
DUKE STANFORD

Stanford - China Cardiovascular Research Symposium
SEPTEMBER 21–22, 2017

2017 Stanford Drug Discovery Conference

April 24, 2017 | 8:30 am – 6 pm | Li Ka Shing Center for Learning & Knowledge (LKSC)

Advances in basic research and technology now affords us the unique opportunity to test novel diagnostic methods and therapeutics. The conference takes advantage of the collective experience and expertise from industry, academia, policy and venture capital towards drug discovery and personalized medicine.

WELCOME

Joseph Wu, MD, PhD
Director , Stanford Cardiovascular Institute; Simon H. Stertzer Professor of Medicine (Cardiology) & Radiology

David Entwistle, MHSA
President and Chief Executive Officer, Stanford Health Care

Christopher G. Dawes, MBA
President and Chief Executive Officer, Lucile Packard Children's Hospital

KEYNOTE SPEAKERS

Thomas Südhof, MD, PhD
2013 Nobel Laureate; Avram Goldstein Professor, Stanford School of Medicine and Professor, by courtesy, of Neurology and of Psychiatry and Behavioral Sciences

Robert Califf, MD
Donald F. Fortin Professor of Cardiology, Duke School of Medicine; Former Commissioner of U.S. Food and Drug Administration

BENCH TO BEDSIDE: CARDIOVASCULAR MEDICINE

Daria Mochly-Rosen, PhD
George D. Smith Professor in Translational Medicine; Founder and President, SPARK Global

Shaun R. Coughlin, MD, PhD
Director, Cardiovascular Research Institute, UCSF

Eric Olson, PhD
Professor, Chairman of Molecular Biology; UT Southwestern Medical Center, Dallas

Stephen Quake, PhD
Lee Otterson Professor in the School of Engineering and Professor of Bioengineering of Applied Physics and, by courtesy, of Physics; Co-President of the Chan Zuckerberg Biohub

SESSION CHAIR

Helen M. Blau, PhD
Donald and Delia Baxter Foundation Professor, Stanford; Director, Baxter Laboratory for Stem Cell Biology

INDUSTRY - PROMISES & CHALLENGES

James (Jay) E. Bradner, MD
President, Novartis Institutes for BioMedical Research

Sean E. Harper, MD
Executive Vice President, Research and Development, Amgen

David Altshuler, MD, PhD
Executive Vice President, Global Research and Chief Scientific Officer, Vertex Pharmaceuticals

Andrew Plump, MD, PhD
Chief Medical and Scientific Officer, Takeda Pharmaceuticals

SESSION CHAIR

Robert A. Harrington, MD
Arthur L. Bloomfield Professor of Medicine; Chair, Stanford Department of Medicine

BENCH TO BEDSIDE: CANCER THERAPIES

Alan Ashworth, PhD
Director, UCSF Helen Diller Family Comprehensive Cancer Center; Senior Vice President, Cancer Services of UCSF Health

Gideon Bollag, PhD
Chief Executive Officer of Pelxxikon

Shivaani Kummar, MD
Professor of Medicine (Oncology) and of Radiology (Molecular Imaging Program), Stanford

SESSION CHAIR

Beverly S. Mitchell, MD
Director, Stanford Cancer Institute; George E. Becker Professor in Medicine and Professor, by courtesy, of Chemical and Systems Biology

REGISTER & SUBMIT POSTERS
cvi.stanford.edu

Organizing Committee: Joseph C. Wu, MD, PhD; Sanjay V. Malhotra, PhD; Mark Mercola, PhD

Stanford Cardiovascular Institute

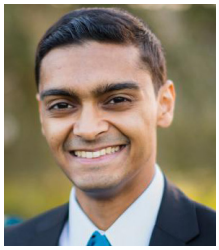
CIRM California Institute for Regenerative Medicine

Stanford Cancer Institute

Stanford study creates a score card index for heart-damaging chemotherapy drugs

By Krista Conger

Researchers at the Stanford University School of Medicine used heart-muscle cells made from stem cells to rank commonly used chemotherapy drugs based on their likelihood of causing lasting heart damage in patients.



Arun Sharma, PhD

Wesley McKeithan

Drugs known as tyrosine kinase inhibitors can be an effective treatment for many types of cancers, but they also have severe and sometimes fatal side effects. Using lab-grown heart cells, Stanford researchers were able to assess the drugs' various effects on heart-muscle cells, including their survival and ability to beat rhythmically and effectively, to respond appropriately to electrophysiological signals, and to communicate with one another.

The researchers found that their assay can accurately identify those tyrosine kinase inhibitors already known to be the most dangerous in patients. In the future, they believe their system may prove useful in the early stages of drug development to preemptively screen new compounds for cardiotoxicity.

"This type of study represents a critical step forward from the usual process running from initial drug discovery and clinical trials in human patients," said **Joseph C. Wu, MD, PhD**, Director of the Stanford Cardiovascular Institute and a professor of cardiovascular medicine and radiology. "It will help pharmaceutical companies better focus their efforts on developing safer drugs, and it will provide patients more effective drugs with fewer side effects."

Validating the researchers' newly designed cardiac safety index on drugs with extensive clinical track records is necessary before the assay can be used to predict with confidence the likely clinical outcomes of drugs still under development.

Arun Sharma, **Wesley McKeithan**, and their colleagues created heart muscle cells called cardiomyocytes from induced pluripotent stem cells, or iPS cells, from 11 healthy people and two people with kidney cancer. They grew the lab-made cardiomyocytes in a dish and tested the effects of 21 commonly used tyrosine kinase inhibitors on the cells.

They found that treatment with drug levels equivalent to those taken by patients often caused the cells to beat irregularly and begin to die. The cells also displayed differences in the electrophysiological signaling that controls their contraction. The researchers used these and other measurements to develop a "cardiac safety index" for each drug.

The current study mirrors another program by Wu's lab that was published in April of 2016 in Nature Medicine. That research focused on the toxic effect of a chemotherapy drug called doxorubicin on iPS cell-derived cardiomyocytes. Doxorubicin, which indiscriminately kills any replicating cells, is increasingly being replaced by more targeted, cancer-specific therapies such as the tyrosine kinase inhibitors tested in the current study.

Stanford co-authors are former instructor of the Cardiovascular Institute Paul Burridge, PhD; graduate student Wesley McKeithan; postdoctoral scholars Praveen Shukla, PhD, Haodi Wu, PhD, and Alexandra Holmström, PhD; Visiting Scholar Tomoya Kitani, MD; Cardiovascular Institute instructors Nazish Sayed, MD, PhD, Elena Matsa, PhD, and Jared Churko, PhD; medical student Anusha Kumar, undergraduate student Yuan Zhang; assistant professor of medicine Alice Fan, MD; associate professor of medicine Sean Wu, MD, PhD; and professor of medicine Mark Mercola, PhD, in a study published in **Science Translational Medicine**.

Read more: *https://http://stm.sciencemag.org/content/9/377/eaaf2584*

About the Stanford Cardiovascular Institute

The Institute currently consists of over 231 faculty members representing physicians, surgeons, engineers, basic and clinical researcher. The mission of the Institute is integrating fundamental research across disciplines and applying technology to prevent and treat cardiovascular disease.

Cathy Hutton,MBA

Hana Lee, MPH

To support cardiovascular research and education at CVI, please contact: **Cathy Hutton**, Senior Associate Director, Medical Center Development at cathy.sutton@stanford.edu or **Hana Lee**, Associate Director, Cardiovascular Institute at hanalee@stanford.edu.

For more information: http://med.stanford.edu/cvi/support-our-research.html and http://cvi.stanford.edu.

Late Breaking Science & Exchange of Ideas at the 2016 AHA Scientific Session

Erik Ingelsson, MD

Joseph Woo, MD

Robert Harrington, MD

November 12-16, 2017. New Orleans, LA

The American Heart Association's Scientific Session is among the leading cardiovascular conferences for basic, translations, clinical and population science.

The Stanford Cardiovascular Institute faculty members presented over 36 talks and 85 abstracts on topics including, a special session on "Advanced Topics in the Classical Arena – Big Results from Big Data in CV Trials" (**Kenneth Mahaffey, MD**), "Leveraging Big Data for Precision Health- The Power of Unified Data Sets for Discovery of Novel risk Predictors" (**Erik Ingelsson, MD**) and "New Approaches to Repair the Damaged Cardiovascular System – IPS Cells to Develop new Cardiovascular Drug Therapies" (**Joseph C. Wu, MD, PhD**).

A few of our leading faculty, including **Joseph Woo, MD** and **Robert Harrington, MD** also shared their personal best advice and keys to success for trainees during the Early Career Sessions at the AHA.

Abstracts from the American Heart Association's 2016 Scientific Sessions and Resuscitation Science Symposium are available in Circulation, http://circ.ahajournals.org/content/supplements.

L-R: Joseph Wu, MD, PhD; Elena Matsa, PhD; Sang Ging Ong, PhD; Won-Hee Lee, PhD; Haodi Wu, PhD; Mingtao Zhao, PhD; Jared Churko, PhD

The Stanford CVI hosted its annual festive dinner at the Bon Ton Café for over 35 members and trainees. In addition to sampling tasty cajun-creole food, the group celebrated the accomplishments of many CVI members who presented their research work at the AHA meeting. **Joseph C. Wu, MD, PhD**, Director of the CVI, welcomed dinner guests and congratulated them on their outstanding accomplishments.

The future of cardiovascular research and medicine lies in the fellows and students whose outstanding research will shape new treatments and understanding of health and disease. CVI is proud to support their work by facilitating travel to conferences like the AHA through travel award stipends. See page 10 for recent awardees.

AHA Launches Precision Medicine Platform with Amazon Web Services

The American Heart Association (AHA) and the Amazon Web Services (AWS) announced a new collaboration - the AHA Precision Medicine Platform, a secure cloud service that provides a central repository of data to facilitate collaboration and accelerate scientific discovery. The Platform will allow researchers to leverage large sets of collective data to uncover unique risk predictors and special patient characteristics.

"These findings could help stratify individuals, groups, and entire populations according to their risk of cardiovascular disease and likely response to treatments. The project will pull scientist out of silos and bring them all in the same room" said Joseph C. Wu, MD, PhD, Director of the Stanford Cardiovascular Institute.

Healthcare and research organizations such as AstraZeneca, Intermountain Medical Center Heart Institute, Duke Clinical Research Institute, Cedars-Sinai Health Institute and the Stanford Cardiovascular Institute will all contribute to this AHA Precision Medicine Platform with many additional groups to follow.

amazon web services

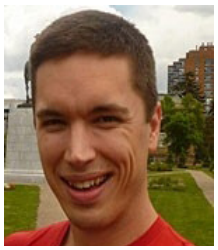
American Heart Association®

life is why®

NIH awards $26.4 million to Stanford researchers for physical activity study

By Tracie White

Michael Snyder, PhD



Stephen Montgomery, PhD

Euan Ashley, DPhil, MRCP

Stanford researchers have been awarded two grants totaling $26.4 million as part of the largest program ever funded by the National Institutes of Health to study the biological mechanisms of physical activity.

Michael Snyder, PhD, professor and chair of genetics, and **Stephen Montgomery, PhD**, assistant professor of pathology and of genetics, were awarded $15.7 million. They will lead a research team using advanced technological tools to identify and characterize the wide range of molecules that form during or after exercise.

"Our grant is to collect genomic, transcriptomic and epigenomic information and learn about how these relate to the effect of exercise," Snyder said. "We will be determining how exercise affects the body's biochemistry at a detailed level never analyzed previously."

Montgomery added, "A lack of physical activity is a major factor in multiple diseases. This program provides an exciting opportunity to learn the molecular mechanisms underlying physical activity, with the goal of enabling new approaches to improving or maintaining individual health."

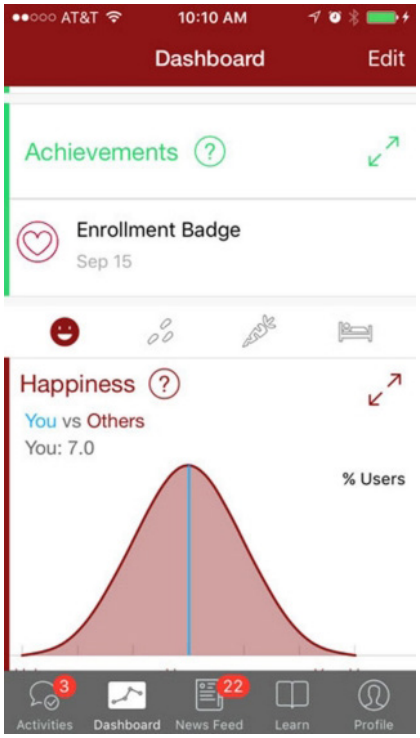
A second grant of $10.7 million was awarded to **Euan Ashley, DPhil, MRCP**, Associate Professor of Cardiovascular Medicine and of Genetics, to establish and lead a bioinformatics center for data storage available to all the researchers across the NIH program.

"The role of the bioinformatics center will be data sharing, data integration with other datasets, and novel analytics," Ashley said.

The NIH program, called Moleculsar Transducers of Physical Activity in Humans, will award a total of $170 million to researchers across the United States over the next six years to study the molecular changes that occur during and after exercise, with the goal of advancing the understanding of how physical activity improves and preserves health.

Read more: http://med.stanford.edu/news/all-news/2016/12/researchers-awarded-more-than-26-million-for-activity-study.html

Related: Importance of Assessing Cardiorespiratory Fitness in Clinical Practice: A Case for Fitness as a Clinical Vital Sign: A Scientific Statement From the American Heart Association Read more: http://circ.ahajournals.org/content/134/24/e653



MyHealth app 2.0 for sharing data on heart health

Resolved to improve your heart health in the new year? A newly updated app could keep you on track.

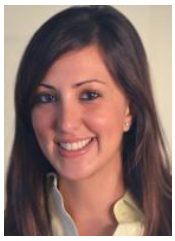
Researchers at the Stanford University School of Medicine have launched MyHeart Counts 2.0, a major update to the popular research app that allows users to share heart health and activity data with researchers. The upgrades include the Stanford Coaching Module, which will test a series of four health interventions — prompts and suggestions aimed at improving heart health; more user feedback; graphics showing user data; and an improved user interface.

The original MyHeart Counts, launched in the spring of 2015 on Apple's ResearchKit platform, has enrolled more than 54,000 participants — more users than any other ResearchKit app.

Read more: https://med.stanford.edu/news/all-news/2017/01/stanford-updates-app-for-sharing-data-on-heart-health.html

Studying a paradox in mortality rates from heart disease

By Tracie White



Fatima Rodriguez, MD, PhD

There's an interesting, well-known paradox in the field of heart disease that caught the attention of **Fatima Rodriguez, MD**, a cardiology fellow at Stanford and cardiovascular researcher.

"Despite higher risk factors for heart disease, Hispanics somehow seem to die less often from cardiovascular disease, and in fact all causes," Rodriguez says. "It's controversial. Some people say it's not real, that it's just a statistical phenomenon."

Spurred by her interest in the controversy, Rodriguez set out to discover whether perhaps this "paradox" could be due to the fact that so many different Hispanic groups — about 20 groups with origins from different countries—get lumped together for most health studies.

In the resulting study published in **JAMA Cardiology**, Rodriguez and colleagues report wide differences in cardiovascular mortality rates and their causes among the three major Hispanic ethnic groups in the U.S. — those with origins from Cuba, Mexico and Puerto Rico. The study concludes that the current method of lumping together all Hispanics masks a wide variation between cardiovascular mortality rates and their causes, skewing the data.

"When we put everybody in one bucket, we are missing a lot of the important details," Rodriguez says.

Using 10 years of national data collected by the National Center for Health Statistics from death certificates from 2003 to 2012, researchers separated reported causes of mortality for the only three Hispanic ethnic groups recorded: Mexican, Cuban and Puerto Rican. They then calculated mortality rates for these sub-groups and compared them to non-Hispanic whites. Results showed that Mexicans and Puerto Ricans died on average 10 years before whites and Cubans. They also found that Puerto Ricans experienced higher mortality rates from heart attack and hypertension while Mexicans showed higher rates of death due to stroke.

Read more: http://scopeblog.stanford.edu/2017/01/18/mortality-rates-from-heart-disease-vary-among-hispanic-ethnic-groups-stanford-study-finds/

Published study: http://jamanetwork.com/journals/jamacardiology/fullarticle/2598391

Douglas Owens part of task force recommending new statin treatment guidelines

By Beth Duff-Brown

Douglas Owens, MD

The U.S. Preventive Services Task Force now recommends adults ages 40 to 75 with no history of heart disease — but who nevertheless have at least one risk factor and an elevated risk of cardiovascular disease — take a low- to moderate-dose statin.

The independent panel of experts in prevention and evidence-based medicine issued the recommendation in the Nov. 15 issue of **JAMA**.

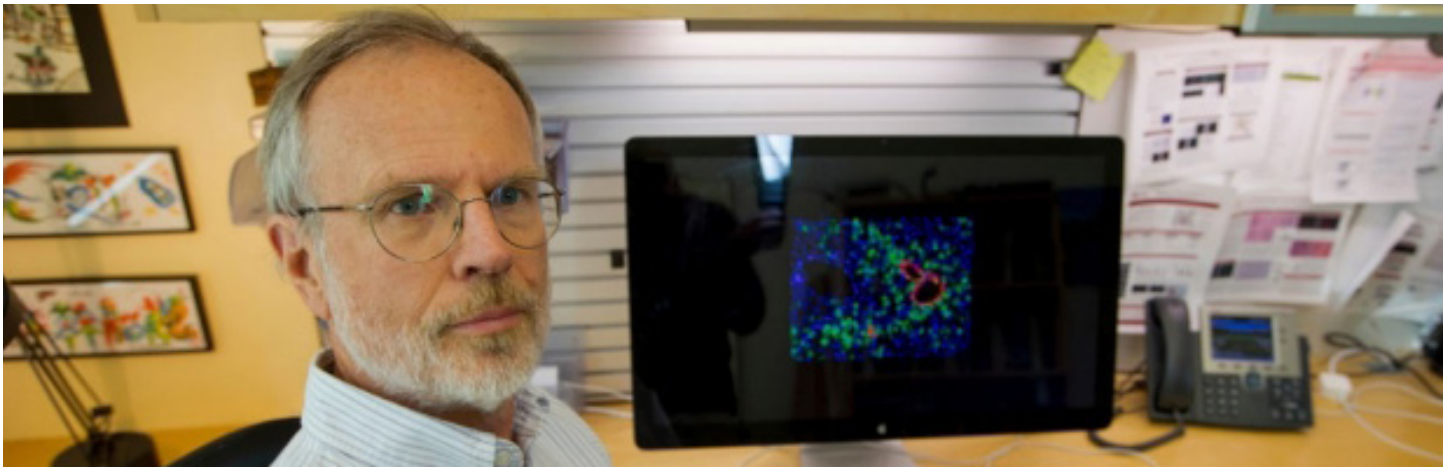
An estimated 505,000 adults died of coronary heart and cerebrovascular disease in 2011. The prevalence of heart disease increases with age, ranging from about 7 percent in adults ages 45-64 to 20 percent in those 65 and older. It is somewhat higher in men than in women.

Douglas Owens, MD, was a member of the task force when the guideline was developed. He is a Professor of Medicine at the School of Medicine and director of the Center for Health Policy and Center for Primary Care and Outcomes Research.

Beth Duff-Brown, the communications manager at Stanford Health Policy, recently asked Owens some questions about the new statin guidelines.

Read more: http://med.stanford.edu/news/all-news/2016/11/5-questions-douglas-owens-on-new-statin-recommendation.html

Published study: https://www.ncbi.nlm.nih.gov/pubmed/27838723



Roeland Nusse wins $3 million Breakthrough Prize for his contributions to the understanding of signaling molecule Wnt.

Roeland Nusse, PhD, the Virginia and Daniel K. Ludwig Professor in Cancer Research and a Howard Hughes Medical Institute investigator, was honored with a 2017 Breakthrough Prize in Life Sciences. The Breakthrough Prizes, initiated in 2013, honor paradigm-shifting research and discovery in the fields of life sciences, fundamental physics and mathematics. In total, about $25 million was awarded this year.

“Roel’s pioneering work has provided deep insights into an essential molecular signaling pathway that controls normal embryonic development and adult tissue repair, and that contributes to cancer when it is not properly regulated. His work has served as a model for many others in our field and accelerated further studies of these critical processes,” said Stanford President Marc Tessier-Lavigne, PhD. “We are grateful that the Breakthrough Prize recognizes the work of scientific leaders who are inspiring others to pursue discovery that is truly transformative, benefiting all of humanity.”

“Roel has devoted his career to identifying one of the major signaling molecules in embryonic development, and clarifying its role in cancer development and in tissue regeneration,” said Lloyd Minor, MD, Dean of the School of Medicine. “The importance of Wnt signaling in these processes cannot be overestimated. His work has been the foundation of much of modern developmental biology, and we are very proud of his contributions.”

Nusse’s more recent work has focused on understanding how Wnt family members control the function of adult stem cells in response to injury or disease. In 1996, he identified the cell- surface receptor to which Wnt proteins bind to control cells’ functions, and in 2002 he was the first to purify Wnt proteins — an essential step to understanding how they work at a molecular level.

“My work has shifted significantly over the years due to the influence of my Stanford colleagues, although it has always been focused on Wnt,” said Nusse. “When I arrived at Stanford, I was studying the involvement of the Wnt proteins in mouse development and cancer. I then switched to fruit flies, and then to the study of adult stem cells. Stanford has supported me during this evolution of my research career.” Nusse’s lab is currently devoted to understanding how Wnt signaling a!ects the function of adult stem cells in the liver to help the organ heal after injury, as well as what role Wnt signaling might play in the development of liver cancer. “The Breakthrough Prizes are a sign of the times,” said Nusse.

“Together with the recently announced Chan Zuckerberg Initiative, they show how the wealth of Silicon Valley is now making an impact not just in the field of computer science, but also in biomedical fields. This is very exciting.”

Read more: https://med.stanford.edu/news/all-news/2016/12/roeland-nusse-wins-breakthrough-prize.html

Recently Awarded Projects

Euan Ashley, DPhil, MRCP

FEDERAL DRUG ADMINISTRATION

Accuracy and Integration of Large Scale Data from Genome Sequencing and Mobile Sensors

Daniel Bernstein, MD

DEPARTMENT OF DEFENSE

Non-Cardiomyocyte MicroRNAs Mediate Susceptibility to Right Heart Failure

James Spudich, PhD

SAVING TINY HEARTS SOCIETY

The Effects of Pediatric-specific HCM Mutations on b-cardiac Myosin Power Generation

Tierney Seda, MD

NATIONAL MARFAN FOUNDATION

Children and Adolescents with Marfan Syndrome: 10,000 Healthy Steps and Beyond

Irving Weissman, MD

U.S.-ISRAEL BINATIONAL SCIENCE FOUNDATION, BSF

Natural Chimerism and Darwinian Selection

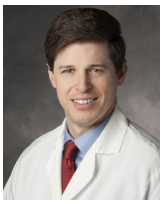
Alexander R. Dunn, PhD

HOWARD HUGHES MEDICAL INSTITUTE | *HHMI Faculty Scholar*

Marius Wernig, MD

HOWARD HUGHES MEDICAL INSTITUTE | *HHMI Faculty Scholar*

New Clinical Trials



Ronald Witteles, MD A phase 3 multicenter, randomized, double-blind, extension study to evaluate the safety of daily oral dosing of tafamidis meglumine (pf-06291826) 20 mg or 80 mg in subjects diagnosed with transthyretin cardiomyopathy (TTR-CM).

Heart Month Community Talk from Stanford Health Care

Come Get Heart Smart! February is American Heart Month and Stanford Health Care encourages you to keep your heart healthy. Join us for a free community event and meet Stanford Medicine experts who will discuss the latest in preventing heart disease, common risk factors, and options for treatment.

Saturday, February 18, 2017 | 8:30 a.m. - 12 p.m.
Crowne Plaza Palo Alto | 4290 El Camino Real, Palo Alto, CA 94306
stanfordhealthcare.org/for-patients-visitors/events.html

Cardiovascular Postdoctoral Research Fellowships (T32)

The Stanford Cardiovascular Institute offers a unique platform to train the next generation of basic and translational scientists. The program is designed to train the next generation of postdoctoral scholars by exposing them to cardiovascular imaging research, mechanisms and innovations in vascular disease and myocardial biology. Mentors for the program are drawn from members of this collaborative Institute, including medicine, materials science, bioengineering, imaging, and health research and policy.

Available Fellowships!

Multidisciplinary Training in Cardiovascular Imaging

The Multi-Disciplinary Training Program in Cardiovascular Imaging at Stanford is funded by the National Institute of Biomedical Imaging and Bioengineering of the National Institutes of Health. The program trains a total of four fellows in three complementary areas: Clinical, Engineering, Molecular Imaging. With the impact of cardiovascular disease on US and world health and the rapid advances in imaging technologies and cardiovascular biology, it is critical that fellows be provided a broad, multi-disciplinary, and collaborative training program to foster their ability to translate CV imaging research into clinical application.

For more information: med.stanford.edu/cvi/education/cvis-t32.html

Mechanisms and Innovations in Cardiovascular Disease

This program trains a total of six fellows over two years in the following areas: Vascular Reactivity and Thrombosis, Vascular Regeneration and Development, Metabolic or Lifestyle Influences on Vascular Outcomes, Proteomic Markers and Genetic Determinants of Vascular Disease, Gender and Ethnicity Differences in Vascular Disease and Vascular Bioengineering.

For more information: med.stanford.edu/cvi/education/cvi_fellowship_training_program.html

Research Training in Myocardial biology

The Multi-Disciplinary Research Training Program in Myocardial Biology at Stanford (TIMBS) trains postdoctoral fellows from six complementary areas: Genetics and Genomics, Cellular Signaling, Molecular Imaging, Physiology and Phenotyping, Cardiac Development and Regeneration, Outcomes Research and Population Science.

For more information: med.stanford.edu/cvmedicine/education/timbs.html

The Future of Cardiovascular Research Symposium

November 21, 2016 The CVI postdoctoral fellows organized an afternoon symposium to present and discuss their ongoing research in clinical and translational science. Topics included, biomaterial engineering, CM/CA+ single cell analysis, and cardiovascular imaging. Over 97 postdoctoral fellows from the CVI, Departments of Radiology, Cardiovascular Medicine, Mechanical Engineering, Pulmonary and Vascular Surgery attended this symposium.

Special speakers, including included Kelly LaMarco, PhD, Science Editor of Science Translational Medicine Journal, Crystal Botham, PhD, Director of Strategic Research Development and Biosciences Writing Academy and Deborah Rosenfeld MA, LMFT, Assistant Director of Curriculum, Stanford School of Medicine Career Center also led career development discussions.

Alexandre Ribeiro, PhD won the Best Postdoctoral Research Presentation for his talk, "Engineering Single hPSC-cardiomyocytes with Microcontact Printing to Assay Contractile Defects Induced by Drugs and Disease States".

Thanks to the Planning Committee: Tina Baykaner, MD; Chia Yu Alex Chang, PhD; Svenja Dannewitz, PhD; Anna-Margaretha Hedwig Karmann, PhD; Elias Levy Itshak Salfati, PhD; Amber Rae Smith, PhD; Maureen Wanjare, PhD; and Joe Zhang, PhD

Faculty lead for the committee: Mark Mercola, PhD

2017 Spring Travel & Exchange Idea Awards

The Cardiovascular Institute is delighted to support travel awards to national conferences to exchange ideas and showcase innovations in research.

Fahd Yunus, MD
PI Mentor: Mintu Turakhia, MD
ACC Scientific Session
March 17-19, 2017
Washington, DC

Christine Wahlquist, PhD
PI Mentor: Mark Mercola, PhD
Keystone Symposia
March 26-30, 2017
Keystone, CO

Luqia Hou, PhD
PI Mentor: Ngan Huang, PhD
Experimental Biology
April 22-26, 2017
Chicago, IL

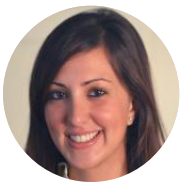
Christina Chick, PhD
PI Mentor: Amit Etkin, MD, PhD
Psychological Sciences
May 25-28, 2017
Boston, MA

Manuscript Awards

Each Winter, the Cardiovascular Institute awards authors of outstanding manuscripts published in the previous year. These are the 2016 award receipients.

Mingxia Gu, PhD
"Patient-Specific iPSC-Derived Endothelial Cells Uncover Pathways that Protect against Pulmonary Hypertension in BMPR2 Mutation Carriers"
Cell Stem Cell. 2016 Dec 2

Kozo Okada, MD
"Attenuated-Signal Plaque Progression Predicts Long-Term Mortality After Heart Transplantation: IVUS Assessment of Cardiac Allograft Vasculopathy"
J Am Coll Cardiol. 2016 Jul 26



Fatima Rodriguez, MD, MPH
"Association Between Intensity of Statin Therapy and Mortality in Patients With Atherosclerotic Cardiovascular Disease"
JAMA Cardiol. 2017 Jan 1

Elena Matsa, PhD
"Transcriptome Profiling of Patient-Specific Human iPSC-Cardiomyocytes Predicts Individual Drug Safety and Efficacy Responses In Vitro"
Cell Stem Cell. 2016 Sep 1

A Step-By-Step Course To Strengthen Your NIH Career Development Award

Tackling Your K

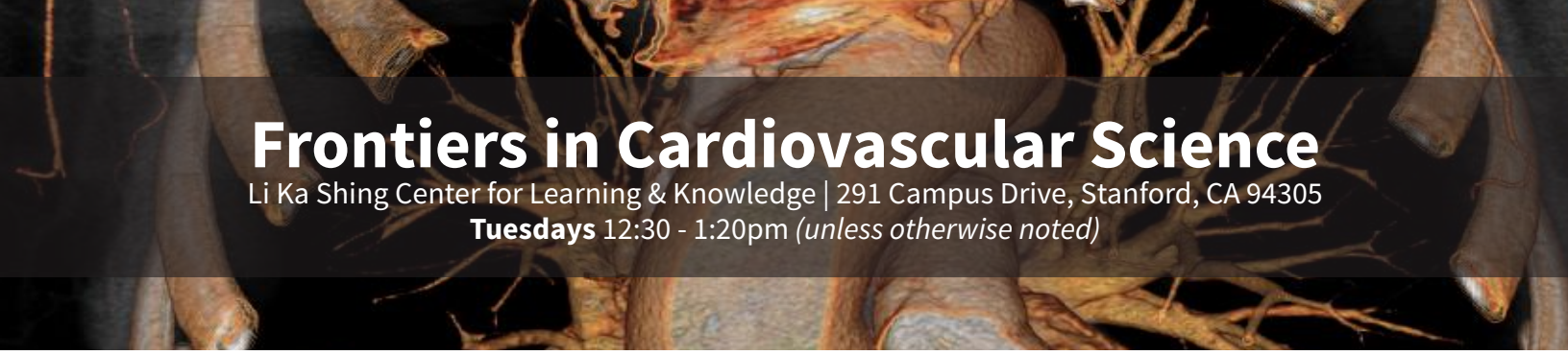
The CVI / CV Med sponsored Tackling Your K course was designed to develop competitive NIH Career Development K Award applications and prior course applicants have a 67% success rate. The next course starts in mid February for the June / October NIH K Award deadlines.

Over 10+ weeks, this course emphasizes successful grantsmanship fundamentals and the workshops enables participants to:

- Generate concise and specific aims that are measurable and realistic
- Develop a strong research plan
- Clearly communicate and justify the need for the proposed research
- Outline a structured personalized career plan that will enable independence

Stanford faculty participate in specific workshops and provide feedback to strengthen the overall application.

Email **Crystal Botham, PhD** at cbotham@stanford.edu for more information.



Frontiers in Cardiovascular Science

Li Ka Shing Center for Learning & Knowledge | 291 Campus Drive, Stanford, CA 94305
Tuesdays 12:30 - 1:20pm *(unless otherwise noted)*

January 10, 2017
TIMOTHY J. KAMP MD, PHD
Co-director, Stem Cell and Regenerative Medicine Center; Cellular and Molecular Arrhythmia Research Program, UW-Madison School of Medicine and Public Health

January 17, 2017
RUI-PING XIAO, MD, PHD
Professor, Institute of Molecular Medicine Peking University, Beijing, China

January 24, 2017
MARK A. CREAGER, MD, FAHA
Director, Heart and Vascular Center, Dartmouth-Hitchcock Medical Center; Professor of Medicine, Geisel School of Medicine

January 31, 2017
JIANYI "JAY" ZHANG, MD, PHD
Chair, Department of Biomedical Engineering; T. Michael and Gillian Goodrich Endowed Chair of Engineering Leadership; Professor of Medicine, School of Medicine and Engineering, University of Alabama Birmingham

February 07, 2017
NICHOLAS LEEPER, MD
Associate Professor of Surgery (Vascular Surgery) and Medicine (Cardiovascular Medicine) Stanford School of Medicine

February 14, 2017
HOLDEN TERRY MAECKER, PHD
Associate Professor (Research) of Microbiology and Immunology Stanford

February 21, 2017
IVOR J. BENJAMIN MD, FAHA, FACC
Center Director, Professor Department of Medicine; Cardiology Division Medical College of Wisconsin

February 28, 2017
GERALD W. DORN, II, MD
Philip and Sima K Needleman Professor; Director, Center for Pharmacogenomics, Washington University School of Medicine

March 07, 2017
EDDA SPIEKERKOETTER, MD
and
VINICIO DE JESUS PEREZ, MD
Assistant Professors of Medicine (Pulmonary and Critical Care Medicine) Stanford School of Medicine

March 21, 2017
HANNAH VALENTINE, MD, MRCP
Professor of Medicine (Cardiovascular Medicine) at SUMC

March 23, 2017
MAURO GIACCA, MD
Director-General, International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy

March 28, 2017
PETER J. MOHLER, PHD
Professor and Chair, Physiology and Cell Biology, Ohio State University

April 11, 2017
DAVID JOSEPH LEFER, PHD
Director, Cardiovascular Center of Excellence; Professor of Pharmacology; Louisiana State University Health

APRIL 18, 2017
BURNS C. BLAXALL, PHD, FAHA, FACC, FAPS
Director of Translational Science, Heart Institute; Professor, UC Department of Pediatrics, University of Cincinnati

May 02, 2017
ELIZABETH MURPHY, PHD
Senior Investigator, Laboratory of Cardiac Physiology; National Heart, Lung, and Blood Institute

MAY 09, 2017
CHARLES E. MURRY, MD, PHD
Woods Professor of Pathology, Bioengineering and Medicine/Cardiology; Co-Director, Center for Cardiovascular Biology, University of Washington

MAY 16, 2017
THOMAS J. WANG, MD
Gottlieb C. Friesinger II Professor of Medicine; Director, Division of Cardiovascular Medicine, Vanderbilt School of Medicine

MAY 30, 2017
LATHA PALANIAPPAN, MD, MS
Clinical Professor, Stanford Primary Care and Population Health and the Stanford Cardiovascular Institute

JUNE 06, 2017
JOHN L. SPUDICH, PHD
Robert A. Welch Distinguished Chair in Chemistry; Director, Center for Membrane Biology; Professor, Biochemistry & Molecular Biology; University of Texas, Houston

JUNE 13, 2017
LOUIS J. DELL'ITALIA, MD
Professor, Department of Medicine, Division of Cardiovascular Disease; UAB School of Medicine

Stanford
Cardiovascular Institute
cvi.stanford.edu

Faculty Funding Opportunities

FEBRUARY

National Institute of Health

Improving Outcomes in Cancer Treatment-Related Cardiotoxicty (R01)
Deadline: February 5, 2017

Improving Outcomes in Cancer Treatment-Related Cardiotoxicty (R21)
Deadline: February 16, 2017

NHLBI Clinical Trial Pilot Studies (R34)
Deadline: February 16, 2017

NHLBI Single-Site Investigator-Initiated Clinical Trials
Deadline: February 14, 2017

Wallace H. Coulter Translation Research Grant Program

Stanford Coulter – Translational Research Grants
Deadline: February 15, 2017

American Heart Association

AHA Grant-In-Aid
Deadline: February 17, 2017

MARCH

Progeria Research Foundation

Research Grants (Innovative, Established Investigator, Specialty awards)
Deadline: March 21, 2017

APRIL

Marfan Foundation

Clinical Research Program Faculty Grant Program
Deadline: April 21, 2017

Postdoctoral Funding Opportunities

FEBRUARY

Stanford Child Health Research Institute (CHRI)

Clinical Trainee Support
Deadline: February 1, 2017

American Heart Association

AHA Postdoctoral Fellowship
Deadline: February 10, 2017

AHA Mentored Clinical and Population Research
Deadline: February 14, 2017

National Institute of Health

K99/R00 NIH Pathway to Independence Award
Deadline: February 12, 2017

K08 Mentored Clinical Research Career Development Award
Deadline: February 12, 2017

K23 Mentored Patient-Oriented Research Career Development Award
Deadline: Feb. 12, 2017

NHLBI K01 Mentored Career Development Award to Promote Faculty Diversity
Deadline: February 12, 2017

Marfan Foundation

Victor A. McKusick Fellowship Program Early Investigator Grant Program
Deadline: February 17, 2017

MARCH

Spectrum Education Program POSTDOCS

TL1 Clinical Research Training Program KL2 Mentored Career Development Program
Deadline: March 1, 2017

Thrasher Research Fund

Early Career Awards
Deadline: March 14, 2017

APRIL

National Institute of Health

Ruth L. Kirschstein National Research Service Awards (NRSA) for Individual Postdoctoral Fellows
Deadline: April 8, 2017

National and Global Cardiovascular Conferences

FEBRUARY

International Stoke Conference
February 22–24, 2017
Houston, TX

MARCH

Epidemiology and Prevention; Lifestyle and Cardiometabolic Health
March 7–10, 2017
Portland, OR

13th International Congress of Update in Cardiology and Cardiovascular Surgery
March 23–26, 2017
Izmir, Turkey

Society for Clinical Vascular Surgery Annual Symposium
March 18–22, 2017
Lake Buena Vista, FL

American College of Cardiology Scientific Session & Expo
March 17–19, 2017
Washington, DC

Keystone Molecular Mechanisms of Heart Development (X7)
March 26–30, 2017
Keystone, CO

APRIL

Quality of Care and Outcomes Research
April 2–3, 2017
Arlington, VA

International Society for Heart & Lung Transplantation
April 5–8, 2017
San Diego, CA

American Association for Thoracic Surgery (AATS) Mitral Conclave 2017
April 27–28, 2017
New York, NY

JUNE

Napa Valley Cardiology Conference
June 21-24, 2017
Napa, CA

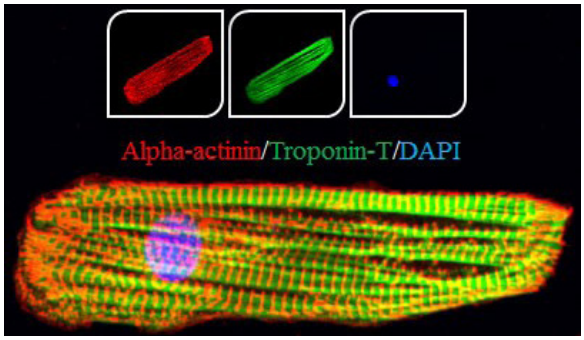
Stanford CVI Human iPSC Biobank Service

Normal and patient-derived reprogrammed cardiomyocytes is a tremendous resource for researchers and physicians here at Stanford and around the country. Understanding the disease process directly at the population level and observing these cells as surrogates under a myriad conditions has the potential to be a game-changer for cardiovascular medical research.

To facilitate research in a dish that allows screening of new compounds or characterization of human disease phenotypes using cardiomyocytes, the Institute created a service by which de-identified PBMC samples from selected patients can be sent to Stanford CVI for reprogramming free of cost.

SCVI biobank is supported in part by National Heart, Lung and Blood Institute (NHLBI), the California Institute for Regenerative Medicine (CIRM), and the Stanford Cardiovascular Institute (CVI).

Stanford iPSC Biobank was recently mentioned in Nature Methods news: *nature.com/nmeth/journal/v12/n2/full/nmeth.3263.html.*



Contact: Joseph Wu, MD, PhD (joewu@stanford.edu) or Biobank manager, **Yan Zhang** (yanzhuge@stanford.edu) with any questions.

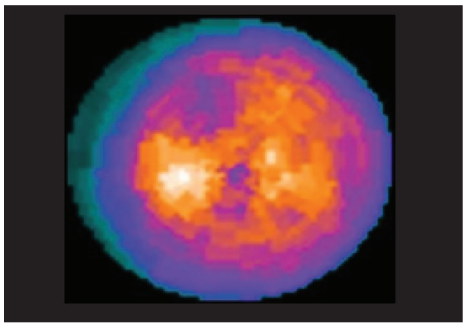
Cardiovascular Pharmacology (BioADD)

The Cardiovascular Pharmacology/Biomaterials and Advanced Drug Delivery (BioADD) Laboratory is a cutting edge research facility that specializes in the creation of biomaterials and drug delivery agents. The lab lends its expertise toward designing and analyzing biomaterials, developing drug delivery devices and formulations, pharmacokinetic and pharmacodynamic studies, and developing smart materials for biomedical applications. The CVI Cardiovascular Pharmacology also offers trainings and lectures.

Contact: Jayakumar Rajadas, PhD
jayraja@stanford.edu

Clinical Biomarker & Phenotyping Core Lab (BPCL)

BPCL provides quantitative assessment of clinical cardiovascular phenotypes for translational research and clinical trials. These cardiovascular phenotypes include evaluating cardiac structure and function, measuring carotid intimal thickness and arterial stiffness, and testing endothelial function and cardiopulmonary exercise testing.



In collaboration with the Human Immune Monitoring Center at Stanford and members of the Cardiovascular Institute, we also offer central blood processing and banking capabilities. In addition, we develop new biomarker platforms and imaging modalities.

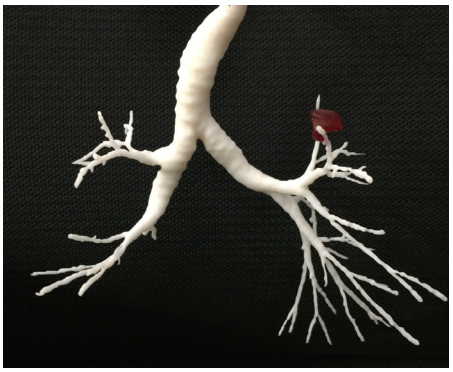
Contact: Francois Haddad, MD
fhaddad@stanford.edu

3DQ Imaging Laboratory

Stanford's 3DQ Imaging Laboratory develops new approaches to exploration, analysis and quantitative assessments of diagnostic images that result in new and/or more cost-effective diagnostic approaches, and new techniques for the design and monitoring of therapy. The lab processes over 1,200 clinical cases to deliver relevant visualization and analysis of medical imaging data at Stanford.

The lab is co-directed by Dominik Fleischmann, MD, Roland Bammer, PhD and Sandy Napel, PhD.

Contact: Dominik Fleischmann, MD
d.fleischmann@stanford.edu



Member Publications

Communication is at the heart of scientific advancement and innovation. This quarter, the Stanford Cardiovascular Institute members published over 242 original manuscripts and reviews, further contributing to our understanding of cardiovascular biology and disease. Here, we highlight selected manuscripts by our members.

NOVEMBER 2016

Cholesterol, Cardiovascular Risk, Statins, PCSK9 Inhibitors, and the Future of LDL-C Lowering. **Rodriguez F, Harrington RA**. JAMA. 2016 Nov 15;316(19):1967-1968.

Cost-Effectiveness of Left Ventricular Assist Devices in Ambulatory Patients With Advanced Heart Failure. Baras Shreibati J, Goldhaber-Fiebert JD, Banerjee D, Owens DK, **Hlatky MA**. JACC Heart Fail. 2016 Nov 30.

Absence of Oral Anticoagulation and Subsequent Outcomes Among Outpatients with Atrial Fibrillation. Hess PL, Kim S, Fonarow GC, Thomas L, Singer DE, Freeman JV, Gersh BJ, Ansell J, Kowey PR, **Mahaffey KW**, Chan PS, Steinberg BA, Peterson ED, Piccini JP; Outcomes Registry for Better Informed Treatment of Atrial Fibrillation (ORBIT-AF) Patients and Investigators. Am J Med. 2016 Nov 22.

A Prospective Natural History Study of Coronary Atherosclerosis Using Fractional Flow Reserve. Barbato E, Toth GG, Johnson NP, Pijls NH, **Fearon WF**, Tonino PA, Curzen N, Piroth Z, Rioufol G, Jüni P, De Bruyne B. J Am Coll Cardiol. 2016 Nov 29;68(21):2247-2255.

MicroRNA-210 Enhances Fibrous Cap Stability in Advanced Atherosclerotic Lesions. Eken SM, Jin H, Chernogubova E, Li Y, Simon N, Sun C, Korzunowicz G, Busch A, Bäcklund A, Österholm C, Razuvaev A, Renné T, Eckstein HH, Pelisek J, Eriksson P, Gonzalez Diez M, Matic Perisic LP, Schellinger IN, **Raaz U**, **Leeper NJ**, Hansson GK, Paulsson-Berne G, Hedin U, Maegdefessel L. Circ Res. 2016 Nov 28.

Rehospitalization after pediatric heart transplantation: Incidence, indications, and outcomes. Hollander SA, McElhinney DB, Almond CS, McDonald N, Chen S, Kaufman BD, **Bernstein D**, **Rosenthal DN**. Pediatr Transplant. 2016 Nov 27.

Incidence, risk factors, and outcomes of acute kidney injury in adults undergoing surgery for congenital heart disease. Kwiatkowski DM, Price E, **Axelrod DM**, Romfh AW, Han BS, Sutherland SM, Krawczeski CD. Cardiol Young. 2016 Nov 21:1-8.

Transcriptomic Profiling Maps Anatomically Patterned Subpopulations among Single Embryonic Cardiac Cells. Li G, Xu A, Sim S, **Priest JR**, Tian X, Khan T, **Quertermous T**, Zhou B, **Tsao PS**, **Quake SR**, **Wu SM**. Dev Cell. 2016 Nov 21;39(4):491-507.

Cardiorespiratory Fitness and Incidence of Major Adverse Cardiovascular Events in US Veterans: A Cohort Study. Kokkinos PF, Faselis C, **Myers J**, Narayan P, Sui X, Zhang J, Lavie CJ, Moore H, Karasik P, Fletcher R. Mayo Clin Proc. 2016 Nov 19.

CRISPR/Cas9 β-globin gene targeting in human haematopoietic stem cells.Dever DP, Bak RO, Reinisch A, Camarena J, Washington G, Nicolas CE, Pavel-Dinu M, Saxena N, Wilkens AB, Mantri S, Uchida N, Hendel A, Narla A, Majeti R, Weinberg KI, **Porteus MH**. Nature. 2016 Nov 17;539(7629):384-389.

Predictors and Prognostic Implications of Incident Heart Failure in Patients With Prevalent Atrial Fibrillation. Pandey A, Kim S, Moore C, Thomas L, Gersh B, Allen LA, Kowey PR, **Mahaffey KW**, Hylek E, Peterson ED, Piccini JP, Fonarow GC; ORBIT-AF (Outcomes Registry for Better Informed Treatment of Atrial Fibrillation) Investigators and Patients. JACC Heart Fail. 2016 Nov 30.

Meta-Analysis Comparing Established Risk Prediction Models (EuroSCORE II, STS Score, and ACEF Score) for Perioperative Mortality During Cardiac Surgery. Sullivan PG, Wallach JD, **Ioannidis JP**. Am J Cardiol. 2016 Nov 15;118(10):1574-1582.

Cost-Effectiveness of Sacubitril-Valsartan in Patients With Heart Failure With Reduced Ejection Fraction. Sandhu AT, Ollendorf DA, Chapman RH, Pearson SD, **Heidenreich PA**. Ann Intern Med. 2016 Nov 15;165(10):681-689.

Portable, one-step, and rapid GMR biosensor platform with smartphone interface. Choi J, Gani AW, Bechstein DJ, Lee JR, **Utz PJ**, **Wang SX**. Biosens Bioelectron. 2016 Nov 15;85:1-7.

Evaluation of Ischemic and Bleeding Risks Associated With 2 Parenteral Antiplatelet Strategies Comparing Cangrelor With Glycoprotein IIb/IIIa Inhibitors: An Exploratory Analysis From the CHAMPION Trials. Vaduganathan M, **Harrington RA**, Stone GW, Deliargyris EN, Steg PG, Gibson CM, Hamm CW, Price MJ, Menozzi A, Prats J, Elkin S, **Mahaffey KW**, White HD, Bhatt DL. JAMA Cardiol. 2016 Nov 30.

Warfarin utilisation and anticoagulation control in patients with atrial fibrillation and chronic kidney disease. **Yang F**, Hellyer JA, Than C, Ullal AJ, Kaiser DW, **Heidenreich PA**, Hoang DD, **Winkelmayer WC**, Schmitt S, Frayne SM, Phibbs CS, **Turakhia MP**. Heart. 2016 Nov 15.

A modified implantation technique of left ventricular assist device: optimal outflow tract positioning. Shudo Y, Choi CW, **Woo YJ**, Ha RV. Int J Cardiol. 2016 Nov 15;223:776-778.

Blood Stem Cell Activity Is Arrested by Th1-Mediated Injury Preventing Engraftment following Nonmyeloablative Conditioning. Müller AM, Florek M, Kohrt HE, Küpper NJ, Filatenkov A, Linderman JA, Hadeiba H, Negrin RS, **Shizuru JA**. J Immunol. 2016 Nov 15;197(10):4151-4162.

Extended-Duration Betrixaban Reduces the Risk of Stroke Versus Standard-Dose Enoxaparin Among Hospitalized Medically Ill Patients: An APEX Trial Substudy (Acute Medically Ill Venous Thromboembolism Prevention With Extended Duration Betrixaban). Gibson CM, Chi G, Halaby R, Korjian S, Daaboul Y, Jain P, Arbetter D, Goldhaber SZ, Hull R, Hernandez AF, Gold A, Bandman O, **Harrington RA**, Cohen AT; APEX Investigators. Circulation. 2016 Nov 14.

Ticagrelor Compared With Clopidogrel in Patients with Prior Lower Extremity Revascularization for Peripheral Artery Disease. Jones WS, Baumgartner I, Hiatt WR, Heizer G, Conte MS, White CJ, Berger JS, Held P, Katona BG, **Mahaffey KW**, Norgren L, Blomster J, Millegård M, Reist C, Patel MR, Fowkes GR; International Steering Committee and Investigators of the EUCLID Trial. Circulation. 2016 Nov 13.

Association Between Intensity of Statin Therapy and Mortality in Patients With Atherosclerotic Cardiovascular Disease. **Rodriguez F, Maron DJ**, **Knowles JW**, Virani SS, **Lin S**, **Heidenreich PA**. JAMA Cardiol. 2016 Nov 9.

Adaptive Immunity Dysregulation in Acute Coronary Syndromes: From Cellular and Molecular Basis to Clinical Implications. Flego D, Liuzzo G, **Weyand CM**, Crea F. J Am Coll Cardiol. 2016 Nov 8;68(19):2107-2117.

Patient-Specific and Genome-Edited Induced Pluripotent Stem Cell-Derived Cardiomyocytes Elucidate Single-Cell Phenotype of Brugada Syndrome. Liang P, Sallam K, Wu H, Li Y, Itzhaki I, Garg P, Zhang Y, Vermglinchan V, Lan F, Gu M, Gong T, Zhuge Y, He C, Ebert AD, Sanchez-Freire V, Churko J, **Hu S**, Sharma A, Lam CK, Scheinman MM, Bers DM, **Wu JC**. J Am Coll Cardiol. 2016 Nov 8;68(19):2086-2096.

Deep Learning Automates the Quantitative Analysis of Individual Cells in Live-Cell Imaging Experiments. Van Valen DA, Kudo T, Lane KM, Macklin DN, Quach NT, DeFelice MM, Maayan I, Tanouchi Y, **Ashley EA**, Covert MW. PLoS Comput Biol. 2016 Nov 4;12(11).

Inhibition of Apoptosis Overcomes Stage-Related Compatibility Barriers to Chimera Formation in Mouse Embryos. Masaki H, Kato-Itoh M, Takahashi Y, Umino A, Sato H, Ito K, Yanagida A, Nishimura T, Yamaguchi T, Hirabayashi M, Era T, Loh KM, **Wu SM**, **Weissman IL**, **Nakauchi H**. Cell Stem Cell. 2016 Nov 3;19(5):587-592.

Loss of smooth muscle cell hypoxia inducible factor-1α underlies increased vascular contractility in pulmonary hypertension. Barnes EA, Chen CH, Sedan O, **Cornfield DN**. FASEB J. 2016 Nov 3.

Effect of Significant Weight Change on Inappropriate Implantable Cardioverter-Defibrillator Therapy. Daimee UA, Biton Y, Aktas MK, Zannad F, Klein H, Szepietowska B, McNitt S, Polonsky B, **Wang PJ**, Zareba W, Moss AJ, Kutyifa V. Pacing Clin Electrophysiol. 2016 Nov 3.

International Collaborative Partnership for the Study of Atrial Fibrillation (INTERAF): Rationale, Design, and Initial Descriptives. Hsu JC, Akao M, Abe M, Anderson KL, Avezum A, Glusenkamp N, Kohsaka S, Lane DA, Lip GY, Ma CS, Masoudi FA, Potpara TS, Siong TW, **Turakhia MP**, Tse HF, Rumsfeld JS, Maddox TM. J Am Heart Assoc. 2016 Nov 2;5(11).

Regulating Stem Cell Secretome Using Injectable Hydrogels with In Situ Network Formation. Cai L, Dewi RE, Goldstone AB, Cohen JE, Steele AN, **Woo YJ**, **Heilshorn SC**. Adv Healthc Mater. 2016 Nov;5(21):2758-2764.

How well does physician risk assessment predict stroke and bleeding in atrial fibrillation? Results from the Outcomes Registry for Better Informed Treatment of Atrial Fibrillation (ORBIT-AF). Steinberg BA, Shrader P, Kim S, Thomas L, Fonarow GC, Ansell J, Kowey PR, Singer DE, Gersh BJ, **Mahaffey KW**, Peterson ED, Piccini JP; ORBIT-AF Investigators and Patients. Am Heart J. 2016 Nov;181:145-152.

Depressive Symptoms, Cardiac Disease Severity, and Functional Status in Patients With Coronary Artery Disease (from the Heart and Soul Study). Schopfer DW, Regan M, **Heidenreich PA**, Whooley MA. Am J Cardiol. 2016 Nov 1;118(9):1287-1292.

Metabolic Markers to Predict Incident Diabetes Mellitus in Statin-Treated Patients (from the Treating to New Targets and the Stroke Prevention by Aggressive Reduction in Cholesterol Levels Trials). Kohli P, **Knowles JW**, Sarraju A, Waters DD, **Reaven G**. Am J Cardiol. 2016 Nov 1;118(9):1275-1281.

Is minimally invasive thoracoscopic surgery the new benchmark for treating mitral valve disease? Goldstone AB, **Woo YJ**. Ann Cardiothorac Surg. 2016 Nov;5(6):567-572.

Magnetic Resonance Imaging of Cardiac Strain Pattern Following Transplantation of Human Tissue Engineered Heart Muscles. Qin X, **Riegler J**, Tiburcy M, Zhao X, Chour T, Ndoye B, Nguyen M, Adams J, Ameen M, Denney TS Jr, **Yang PC**, Nguyen P, Zimmermann WH, **Wu JC**. Circ Cardiovasc Imaging. 2016 Nov;9(11).

Vorapaxar: emerging evidence and clinical questions in a new era of PAR-1 inhibition. Ungar L, **Rodriguez F**, **Mahaffey KW**. Coron Artery Dis. 2016 Nov;27(7):604-15.

Novel Therapies for Familial Hypercholesterolemia. Parizo J, Sarraju A, **Knowles JW**. Curr Treat Options Cardiovasc Med. 2016 Nov;18(11):64.

Exploratory insights from the right-sided electrocardiogram following prolonged endurance exercise. Lord R, George K, Somauroo J, Jain N, Reese K, Hoffman MD, **Haddad F**, **Ashley E**, Jones H, Oxborough D. Eur J Sport Sci. 2016 Nov;16(8):1014-22.

Pediatric Echocardiography by Work Relative Value Units: Is Study Complexity Adequately Captured? Balasubramanian S, Kipps AK, Smith SN, **Tacy TA**, **Selamet Tierney ES**. J Am Soc Echocardiogr. 2016 Nov;29(11):1084-1091.

The use of machine learning for the identification of peripheral artery disease and future mortality risk. Ross EG, Shah NH, **Dalman RL**, Nead KT, Cooke JP, **Leeper NJ**. J Vasc Surg. 2016 Nov;64(5):1515-1522.e3.

Potential Strategies to Address the Major Clinical Barriers Facing Stem Cell Regenerative Therapy for Cardiovascular Disease: A Review. **Nguyen PK**, **Neofytou E**, **Rhee JW, Wu JC**. JAMA Cardiol. 2016 Nov 1;1(8):953-962.

Comparative effectiveness and cost-effectiveness of treat-to-target versus benefit-based tailored treatment of type 2 diabetes in low-income and middle-income countries: a modelling analysis. **Basu S**, Shankar V, Yudkin JS. Lancet Diabetes Endocrinol. 2016 Nov;4(11):922-932.

Simul-seq: combined DNA and RNA sequencing for whole-genome and transcriptome profiling. Reuter JA, Spacek DV, Pai RK, **Snyder MP**. Nat Methods. 2016 Nov;13(11):953-958.

Is There a Difference in Tachycardia Cycle Length during SVT in Children with AVRT and AVNRT? Mills MF, **Motonaga KS**, Trela A, **Dubin AM**, Avasarala K, Ceresnak SR. Pacing Clin Electrophysiol. 2016 Nov.

DECEMBER 2016

Factors Associated With and Prognostic Implications of Cardiac Troponin Elevation in Decompensated Heart Failure With Preserved Ejection Fraction: Findings From the American Heart Association Get With The Guidelines-Heart Failure Program. Pandey A, Golwala H, Sheng S, DeVore AD, Hernandez AF, Bhatt DL, **Heidenreich PA**, Yancy CW, de Lemos JA, Fonarow GC. JAMA Cardiol. 2016 Dec 28.

Genetics: Implications for Prevention and Management of Coronary Artery Disease. **Assimes TL**, Roberts R. J Am Coll Cardiol. 2016 Dec 27;68(25):2797-2818.

Overview of Balloon Approaches to AF Ablation: Some Like it Hot? **Wang PJ**. J Am Coll Cardiol. 2016 Dec 27;68(25):2758-2760.

Association Between the Birth of an Infant With Major Congenital Anomalies and Subsequent Risk of Mortality in Their Mothers. Cohen E, Horváth-Puhó E, Ray JG, Pedersen L, Adler N, Ording AG, **Wise PH**, Milstein A, Toft Sørensen H. JAMA. 2016 Dec 20;316(23):2515-2524.

Single Molecule Force Measurements in Living Cells Reveal a Minimally Tensioned Integrin State. **Chang AC**, Mekhdjian AH, Morimatsu M, Denisin AK, **Pruitt BL**, **Dunn AR**. ACS Nano. 2016 Dec 27;10(12):10745-10752.

High-Resolution Analysis of Antibodies to Post-Translational Modifications Using Peptide Nanosensor Microarrays. Lee JR, Haddon DJ, Gupta N, Price JV, Credo GM, Diep VK, Kim K, Hall DA, Baechler EC, Petri M, Varma M, **Utz PJ**, **Wang SX**. ACS Nano. 2016 Dec 27;10(12):10652-10660.

DIETFITS study (diet intervention examining the factors interacting with treatment success) - Study design and methods. Stanton M, Robinson J, Kirkpatrick S, Farzinkhou S, Avery E, Rigdon J, Offringa L, Trepanowski J, Hauser M, Hartle J, Cherin R, **King AC**, **Ioannidis JP**, Desai M, **Gardner CD**. Contemp Clin Trials. 2016 Dec 24.

Left Atrium Maximal Axial Cross-Sectional Area is a Specific Computed Tomographic Imaging Biomarker of World Health Organization Group 2 Pulmonary Hypertension. Jivraj K, Bedayat A, Sung YK, **Zamanian RT**, **Haddad F**, Leung AN, Rosenberg J, Guo HH. J Thorac Imaging. 2016 Dec 22.

Integrated, multicohort analysis of systemic sclerosis identifies robust transcriptional signature of disease severity. Lofgren S, Hinchcliff M, Carns M, Wood T, Aren K, Arroyo E, Cheung P, Kuo A, Valenzuela A, Haemel A, Wolters PJ, Gordon J, Spiera R, Assassi S, Boin F, Chung L, Fiorentino D, **Utz PJ**, Whitfield ML, Khatri P. JCI Insight. 2016 Dec 22;1(21).

Institution of Veno-arterial Extracorporeal Membrane Oxygenation Does Not Lead to Increased Wall Stress in Patients with Impaired Myocardial Function. Koth AM, **Axelrod DM**, **Reddy S**, **Roth SJ**, **Tacy TA**, **Punn R**. Pediatr Cardiol. 2016 Dec 22.

The Impact of Postgraduate Health Technology Innovation Training: Outcomes of the Stanford Biodesign Fellowship. Wall J, Hellman E, Denend L, Rait D, Venook R, Lucian L, Azagury D, **Yock PG**, **Brinton TJ**. Ann Biomed Eng. 2016 Dec 21.

Dissecting the relationship between obesity and hyperinsulinemia: Role of insulin secretion and insulin clearance. Kim MK, **Reaven GM**, Kim SH. Obesity (Silver Spring). 2016 Dec 21.

Integrative Analysis of PRKAG2 Cardiomyopathy iPS and Microtissue Models Identifies AMPK as a Regulator of Metabolism, Survival, and Fibrosis. Hinson JT, Chopra A, Lowe A, Sheng CC, Gupta RM, Kuppusamy R, O'Sullivan J, Rowe G, Wakimoto H, Gorham J, Zhang K, Musunuru K, Gerszten RE, **Wu SM**, Chen CS, Seidman JG, Seidman CE. Cell Rep. 2016 Dec 20;17(12):3292-3304.

Comparing the vascular response in implantation of self-expanding, bare metal nitinol stents or paclitaxel-eluting nitinol stents in superficial femoral artery lesions: a serial optical frequency domain imaging study. Miki K, Fujii K, Shibuya M, Fukunaga M, Imanaka T, Tamaru H, Nishimura M, Horimatsu T, **Honda Y**, **Fitzgerald PJ**, Masuyama T, Ishihara M. EuroIntervention. 2016 Dec 20;12(12):1551-1558.

Off-Label Dosing of Non-Vitamin K Antagonist Oral Anticoagulants and Adverse Outcomes: The ORBIT-AF II Registry. Steinberg BA, Shrader P, Thomas L, Ansell J, Fonarow GC, Gersh BJ, Kowey PR, **Mahaffey KW**, Naccarelli G, Reiffel J, Singer DE, Peterson ED, Piccini JP; ORBIT-AF Investigators and Patients. J Am Coll Cardiol. 2016 Dec 20;68(24):2597-2604.

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An atlas of transcriptional, chromatin accessibility, and surface marker changes in human mesoderm development. Koh PW, Sinha R, Barkal AA, Morganti RM, Chen A, **Weissman IL**, Ang LT, Kundaje A, Loh KM. Sci Data. 2016 Dec 20;3:160109.

IDEAS (Integrate, Design, Assess, and Share): A Framework and Toolkit of Strategies for the Development of More Effective Digital Interventions to Change Health Behavior. Mummah SA, **Robinson TN**, **King AC**, **Gardner CD**, Sutton S. J Med Internet Res. 2016 Dec 16;18(12).

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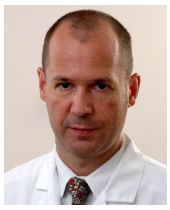

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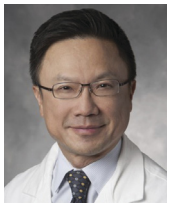

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