



The Future is Now



Lawrence H. Cohn, MD

The Cardiovascular Institute recently received a generous gift from Lawrence H. and Roberta Cohn to endow a lecture series in the area of cardiovascular surgery.

Dr. Cohn graduated from Stanford School of Medicine in 1962 and trained under Dr. Norman Shumway. Dr. Cohn went on to become a pioneer in his own right in the field of heart valve repair and replacement surgery. Stay tuned, this fall the inaugural Lawrence H. and Roberta Cohn Lecturer will be Dr. David Adams of Mount Sinai Hospital.

“We are very grateful to the Cohn family for establishing the Lawrence H. and Roberta Cohn lecturship, which marks a new tradition for CVI that will benefit our Vascular and CT Surgery trainees immensely.”

-- Joseph Wu, MD, PhD, Director Cardiovascular Institute

Now Soliciting
Proposals for
2015 CVI Seed Grants
See Page 3
for more information

Tissue Engineering—Repairing the Heart

The Stanford Cardiovascular Institute is hosting its 2nd Annual Cardiovascular Tissue Engineering Symposium on May 22, 2015, to discuss new approaches that repair damaged portions of the heart and vasculature, using biomaterials.

Biomaterials and cell substrates have taken various forms, including: hydrogels composed of natural polymers, collagen, gelatin, fibrin, hyaluronic acid for example or composed of synthetic polymers. Each of these materials contributes a unique architecture.

Various approaches have been used to control polymerization in order to maintain the biochemical and structural integrity of living cells. Scaffolds without cells entirely have been proposed to restore function with the thought of utilizing the cells' own repair mechanisms.

Each approach has seen some level of promise and some are now in clinical trials internationally, yet all suffer significant drawbacks and no clear leader material has yet emerged.

The meeting is suited for a broad audience in all research disciplines exploring tissue repair, delivery technology and regeneration.

All medical and research students are welcome and encouraged to attend.

List of speakers on page 2.



Sponsored by the California Institute of Regenerative Medicine (CIRM), the National Institute of Health, and Stanford Cardiovascular Institute.

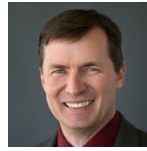
By Ryoko Hamaguchi
B.S. Candidate in Biology
Class of 2015 | Stanford University

INVITED SPEAKERS | Cardiovascular Tissue Engineering Symposium at Stanford

KEYNOTE SPEAKER



Engineering human tissues for regenerative medicine and study of disease
Gordana Vunjak-Novakovic, PhD
Columbia University



Engineering cardiovascular fates in human pluripotent stem cells via stage-specific modulation of Wnt signaling
Sean Palecek, PhD, University of Wisconsin



Cell therapy for myocardial infarction: patch it or Remuscularization?
Jay Zhang, MD, PhD, University of Minnesota
Professor of Medicine and Biomedical Engineering



Submicron-scale, 3D printing of extracellular matrices based on myocardial blueprints
Brenda Ogle, PhD
University of Minnesota



Engineered arteries in patients: Early signals
Laura Niklason, MD, PhD,
Yale School of Engineering and Applied Science



Functional cardiogenesis in 3D fibrin-based culture environment
Nenad Bursac, PhD
Duke Biomedical Engineering



Pluripotent stem cells for the treatment of severe heart failure
Philippe Menasche, MD, PhD
University of Paris Descartes



Engineered Human Myocardium: Maturation and Disease Modeling
Charles Murry, MD, PhD
University of Washington



Integrating flexible electronics and light sheets to study cardiac injury
Tzung Hsiai, MD, PhD
UCLA



Human Cardiac Biowires
Milica Radisic, PhD
University of Toronto



A hybrid approach for heart valve tissue-engineering
Arash Kheradvar, MD, PhD
University of California, Irvine



Defined Human Heart Muscle for Cardiac Repair
Malte Tiburcy, MD
University of Göttingen



Contractile Kinetics / Electrical Activity in Single Human Stem Cell Derived Cardiomyocytes
Ibrahim J. Domian, MD, PhD
Harvard Stem Cell Institute



Thomas P. Finn, PhD
FDA - Associate Director of Regulatory Policy; Office of Cell, Tissue, and Gene Therapies; Center for Biologics Evaluation and Research/ FDA

Register at: <http://cvi.stanford.edu/mission/cardiac-engineering-symposium.html>

About the Stanford Cardiovascular Institute



Cathy Hutton



Ingrid Ibarra, PhD

The Institute, currently consists of 124 faculty members representing, engineers, physicians, surgeons, basic and clinical researchers. The mission of the Institute is integrating fundamental research across disciplines and applying technology to prevent and treat cardiovascular disease. To support cardiovascular research and education at CVI please contact Cathy Hutton, Senior Associate Director, Medical Center Development (cathy.hutton@stanford.edu) or Dr. Joseph C. Wu, Director CVI (joewu@stanford.edu), or Ingrid Ibarra, Assistant Director of CVI (iibarra@stanford.edu).

For more information: <http://cvi.stanford.edu/waystogive.html> and <http://cvi.stanford.edu>

iHeart Research

Dorothy Dee & Marjorie Helene Boring Trust Award



Through a generous gift, the Stanford Cardiovascular Institute established its first fund for Stanford Medical students. Students have 124 faculty at Stanford across diverse disciplines to generate creative solutions to cardiovascular diseases in children, women and men of all ages. We called it iHeart Research because it takes a passion for solving problems and dedication to the one disease that continues to be the number one cause of death. Deadline is June 25th.

Award Details:

The application includes a:

- Two-page proposal (figures and references are supplementary)
- One letter of recommendation

Award Perks:

- Up to a \$15,000 stipend
- Choose a mentor from a list of 124 faculty at Stanford specializing in surgery, engineering, health policy stem cells and regenerative medicine etc.

Links to:

- » [Our Members](#)
- » [Research Disciplines](#)

Questions? Contact iibarra@stanford.edu

Funding Opportunities

CVI SEED GRANTS

Every year, the Cardiovascular Institute awards projects that promise to change the field. Projects that promise to initiate new areas of pediatric and obstetric related research, develop new methods or technology for cardiovascular research or advance the understanding of heart and vasculature biology are encouraged to apply. Several past seed grant projects have gone on to be further funded by the NIH. Deadline for this year is July 1st.

APRIL

American Diabetes Association – Core Programs

Innovative Basic Science (\$115K/yr for 3 years)

Innovative Clinical or Translational Science (\$200K/yr for 3 years)

Junior Faculty Development (\$138K/yr for 2-4 years)

Deadline: April 15, 2015

ADA Core Programs

PCORI-Patient Centered Outcomes Research Institute

PCORI Engagement Award

PCORI Pilot Programs Learning Network

Amount of funding: \$50K over 120 days

Deadline: April 16, 2015

PCORI

Stanford Child Health Research Institute

CHRI Transdisciplinary Initiatives Program

Requests for Letters of Intent

Amount of funding: \$100K over 2 years

Deadline: April 17, 2015

CHRI Transdisciplinary Initiatives Program

Marfan Foundation

Faculty Grant

Amount of funding: \$100K for 2 years

Deadline: April 27, 2015

Faculty Grant

JUNE

Children's Heart Foundation

Research Grant

Amount of funding: \$100K per year for 2 years

Deadline: June 5, 2015

CHF

Children's Cardiomyopathy Foundation

Research Grant Program – Letter of Intent

Amount of funding: \$25-50K for 1 year

Deadline: June 13, 2015

CCF

National Institute of Health

Research Project Grant (Parent R01)

Deadline: June 5, 2014

PA-13-302

POSTDOCTORAL FELLOWS FUNDING OPPORTUNITIES

National Institute of Health

K01 Mentored Research Scientist Development Awards

Deadline: June 12, 2014

PA-14-044

K99/R00 NIH Pathway to Independence Award

Deadline: June 12, 2014

PA-15-083

K08 Mentored Clinical Research Career Development Award

Deadline: June 12, 2014

PA-14-046

K23 Mentored Patient-Oriented Research Career Development Award

Deadline: June 12, 2014

PA-14-049

New Faculty

Mary Hawn to Head Department of Surgery

by Sara Wykes, Stanford Hospital & Clinics Communications Office



Mary Hawn, MD

Mary Hawn, MD, a general surgeon with a special interest in quality and clinical effectiveness, has been appointed chair of the Department of Surgery at the Stanford University School of Medicine. She will start July 1. Hawn is now director of the Division of Gastrointestinal Surgery and vice chair for quality and clinical effectiveness at the University of Alabama at Birmingham, home to one of the five largest academic medical centers nationwide.

“Dr. Hawn is an accomplished surgeon and health-services researcher with training in basic science research, making her uniquely poised to lead our world-class Surgery Department at Stanford Medicine,” said Lloyd Minor, MD, dean of the School of Medicine. “She is also passionately committed to training the next generation of surgeons and to imagining and pursuing the future of surgery.”

Her research interests focus on surgical quality and effectiveness, with the goal of helping to build valid measurements for quality care and to improve standards of care. “I want to inspire everybody to do the right thing for the patient every time,” Hawn said.

“I’ve also learned to communicate that just because we try something doesn’t mean we’ll do it forever; change can be more of an experiment. If that change doesn’t work, we won’t keep doing it.”

Full story at: <https://med.stanford.edu/news/all-news/2015/03/mary-hawn-to-head-stanford-department-of-surgery.html>

A Growing Vascular Team



Manuel Garcia-Toca, MD



Ehab Sorial, MD

The Division of Vascular Surgery at Stanford University, has recruited Manuel Garcia-Toca, MD. Garcia-Toca comes to us from Brown University in Providence, Rhode Island, where he was one of five board certified vascular surgeons in the state. The Division also recruited Ehab Sorial MD, as Clinical Associate Professor in the Medical Center Line. After graduating from medical school in his home country of Egypt, Ehab completed surgical training at Harbor/UCLA Medical Center in Los Angeles and in Western Reserve Care system, in Youngstown, Ohio. He completed vascular training at the University of Kentucky.

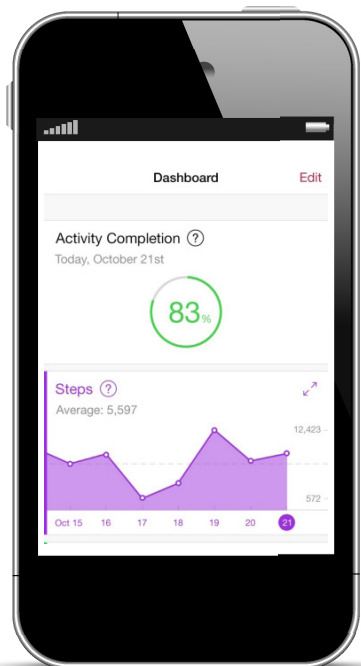


Heart Across America

Palo Alto got together the morning of Sunday, March 22, 2015, to wish Sean Maloney the best for his ride across America, which is averaging 70 miles a day since his start. *No More Broken Hearts*, a foundation dedicated to raising awareness, was one of many foundations along with the American Heart Association gathered to support the ride, including CVI’s Nicholas Leeper, MD, and postdoctoral fellow Daniel DiRenzo, MD.

Stanford Launches Smartphone App to Study Heart Health

By Tracie White Stanford Medical School Office of Communication & Public Affairs



32,000 people have enrolled to date

Full story: <http://med.stanford.edu/news/all-news/2015/03/stanford-launches-smartphone-app-to-study-heart-health.html>

Researchers at the Stanford University School of Medicine launched a first-of-its-kind iPhone app as an easy-to-use research tool that will enable users to help advance the understanding of the health of the human heart. The MyHeart Counts app will collect data about physical activity and cardiac risk factors for Stanford scientists studying the prevention and treatment of heart disease.

The free app uses the new ResearchKit framework by Apple, which gives users a simple way to participate in the study, complete tasks and answer surveys from their iPhone. The app will deliver a comprehensive assessment of each user's heart health and provide information on how to improve it. In the future, it will also be used to study various methods—designed to be both easy and fun—for using smartphones and other wearable devices to enhance heart-healthy habits.

“Users will be able to see their activity

and fitness levels, and their ‘heart age.’ We’ll also be able to study what motivates people to improve their heart health.” said Alan Yeung, MD, the Li Ka Shing Professor of Cardiovascular Medicine at Stanford.

“There are two major elements to the study,” said Michael McConnell, MD, Professor of Cardiovascular Medicine and principal investigator for the MyHeart Counts study. “One is collecting data as broadly as possible on physical activity, fitness and cardiovascular risk factors, which provides important feedback to the participants and helpful research data for our study. The second is studying ways to help people enhance activity and fitness, and decrease their chances of heart disease.”

MyHeart Counts can be downloaded from the App Store. More information about the app is available at myheartcounts.stanford.edu.

Stanford Researchers use Big Data to Identify Patients at Risk of High-cholesterol Disorder

By Tracie White Stanford Medical School Office of Communication & Public Affairs

Stanford School of Medicine researchers have announced the start of a new project designed to identify Stanford patients who may have a genetic disease that causes a deadly buildup of cholesterol in their arteries. Using big data and software that can learn to recognize patterns, researchers will comb through electronic medical records to identify patients at risk of familial hypercholesterolemia, which often goes undiagnosed until a heart attack strikes.

“This disorder certainly leads to premature death in thousands of Americans each year,” said Joshua Knowles, MD, PhD, Assistant Professor of Cardiovascular Medicine, who will lead the effort with Nigam Shah, PhD, Assistant Professor of Biomedical Informatics, and Kenneth Mahaffey, MD, Professor of Cardiovascular Medicine.

“Less than 10 percent of cases are diagnosed, leaving an esti-

mated 600,000 to 1 million people undiagnosed. If found early enough and treated aggressively with statin-based regimens, people can live longer, healthier lives,” said Knowles.

The project is part of a larger initiative called FIND FH (Flag, Identify, Network, Deliver), a collaborative effort involving Stanford Medicine, Amgen Inc., and the nonprofit Familial Hypercholesterolemia Foundation to use innovative technologies to identify individuals with the disorder who are undiagnosed, untreated, or undertreated.

The larger initiative is being funded by Amgen, a biotechnology firm that is developing an experimental cholesterol-lowering drug. The Stanford project is receiving additional funding from the American Heart Association.

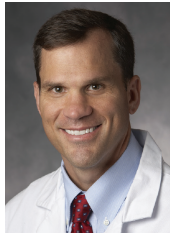
Full story <http://med.stanford.edu/news/all-news/2015/01/researchers-use-big-data-to-find-patients-with-high-cholesterol-risk.html>

Sex Differences Matter in Heart Health

The WSDM Center recently awarded three seed grants to research addressing complex aspects of cardiovascular health and sex differences. **William Fearon, MD**, Associate Professor, **Dominik Fleischmann, MD**, Professor; **Sean Wu, MD, PhD**, Assistant Professor, and **David Liang, MD** Associate Professor are studying "Sex Differences in Ventricular Adaptation and Recovery in Patients with Aortic Stenosis Undergoing Transcatheter Aortic Valve Replacement".

Patricia K. Nguyen, MD, Assistant Professor is addressing "Global Gene Expression Profiling of the Effects of Estrogen and Testosterone on Human Cardiomyocytes Derived from Induced Pluripotent Stem Cells"

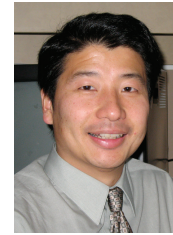
Minang (Mintu) Turakhia, MD, MAS, Assistant Professor, **Jennifer Tremmel, MD**, Assistant Professor, and **Maarten Lansberg, MD, PHD**, Associate Professor are analyzing "Sex Differences in Stroke Prevention Therapy in Atrial Fibrillation"



William Fearon, MD



Dominik Fleischmann, MD



Sean Wu, MD PhD



David Liang, MD



Patricia K. Nguyen, MD



Minang (Mintu) Turakhia, MD



Jennifer Tremmel, MD



Maarten Lansberg, MD, PhD

Cell Differentiation



Mary Teruel, PhD, Assistant Professor of Chemical and Systems Biology received \$1.0M from the NIH for a project entitled 'Controlling the rate of adipocyte differentiation: Experiments and theory'. She also received funds from Bio-X for a project entitled 'Control of Fat Cell Differentiation by Hormonal Oscillations.'

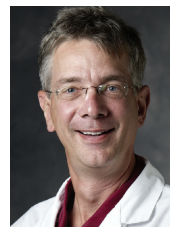
Women's Health Initiative (WHI) Strong and Healthy (WHISH) Trial

Marcia L. Stefanick, PhD Professor of Obstetrics & Gynecology and Medicine and Director of the Stanford Women and Sex Differences in Medicine (WSDM), received \$6.8M from the National Institute of Health (NIH) for a multi-site clinical trial, 'Physical Activity to Improve CV Health in Women: A Pragmatic Trial CCC-Lead'.



The study will engage approximately 51,000 women between the ages of 65-99 around the country.

Education Grant



P.J. Utz, MD, was awarded a grant, 'SIMR Amgen Foundation Grant' to support the Summer Research program for high school students. For more information on this program, and eligibility requirements, visit: <http://simr.stanford.edu/>.

PET/MR Imaging Arrhythmia

Dominik Fleischmann, MD, Professor of Radiology, received an award from General Electric Healthcare for 'PET/MR for Myocardial Tissue Characterization: Technical Development for the Prediction of Arrhythmia in Patients with Dilated Cardiomyopathy'

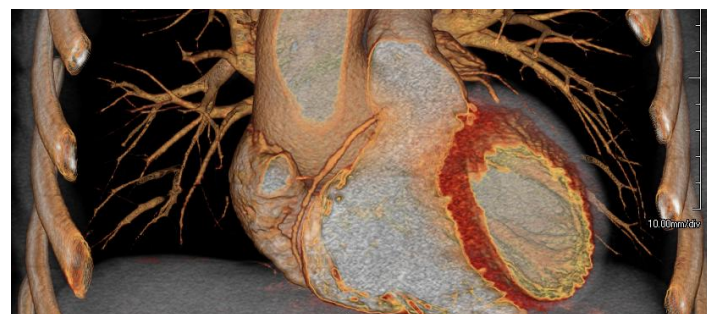
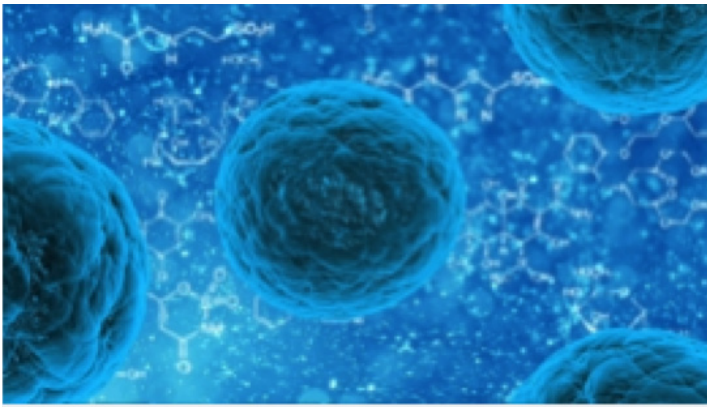


Image Courtesy of Dominik Fleischmann, MD

Stem Cell ‘Tool’ Grants Given to Five Researchers

by Krista Conger medical school's Office of Communication & Public Affairs



Five Stanford researchers were awarded grants of between \$1 million and \$2 million each by the state stem cell agency at its most recent board meeting. The awards were given through the agency’s “tools and technology” grant program, which encourages researchers to develop new methods and techniques to overcome

stumbling blocks in the field. The agency, known as the California Institute for Regenerative Medicine, distributed a total of nearly \$30 million dollars during the January 29 meeting.

Stanford Recipients: Members of the Stanford Cardiovascular Institute



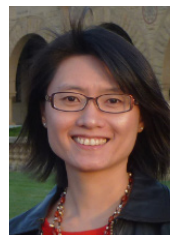
Sarah Heilshorn, PhD, Associate Professor of Materials Science and Engineering, with co-principal investigator Giles Plant, PhD, Associate Professor of Neurosurgery, received an award to develop an injectable scaffold to support the growth and development of transplanted stem cells.



Irving Weissman, MD, Professor of Pathology and of Developmental Biology and Director of the Stanford Institute for Stem Cell Biology and Regenerative Medicine, with co-principal investigator Judith Shizuru, MD, Associate Professor of Medicine, received an award to develop ways to generate better-tolerated, transplantable, blood-forming stem cells from induced pluripotent stem cells and to test new ways to prepare recipients for the transplantation of the cells.



Anthony Oro, MD, PhD, Professor of Dermatology, with co-principal investigator Marius Wernig, MD, Associate Professor of Pathology, received an award to identify epigenomic signatures that can be used to select induced pluripotent stem cell lines for differentiation into a variety of tissues.



Fan Yang, PhD, Assistant Professor of Orthopedic Surgery and of Bioengineering, received an award to develop microribbon-based hydrogels to enhance the engraftment and survival of transplanted stem cells.



Joseph C. Wu, MD, PhD, Professor of Medicine and of Radiology and Director of the Stanford Cardiovascular Institute, received an award to develop a large-animal model to test the transplantation of heart muscle tissue derived from induced pluripotent stem cells.

With these awards, Stanford has received a total of around \$296 million from CIRM.

Full story: <http://med.stanford.edu/news/search.html?q=stem+cell+tools>

Stanford Cardiologists and Researchers Shine at the ACC in San Diego Stanford Medicine



The 2015 Annual Sessions of the American College of Cardiology (ACC) took place in San Diego March 14-16; Stanford leaders, researchers, and investigators were very well represented with original scientific contributions, as moderators of program sessions, presenting invited lectures, and serving in leadership roles in the ACC.

Two quite notable invited lectures were delivered by Bob Harrington (chair, medicine) and Abraham Verghese (vice chair, education).

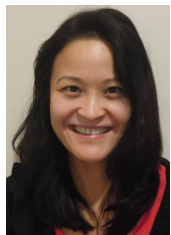
Harrington was invited to give the 46th Annual Louis F. Bishop Lecture, named for a former president of the ACC. The topic of his lecture was “25 Years of Acute Coronary Syndromes: A Paradigm for Collaborative Research and Training the Next Generation,” and it not only covered the past 25 years but also gave a glimpse of the future. Harrington stressed the need for global collaboration to make progress against the disease that kills more people worldwide than any other. His glimpse into the future touted the rapid enrollment of patients into a trial using an Apple app, ResearchKit, the result of a joint project between Stanford and Apple. “This is the new way of doing research,” Harrington said. “When you can enroll 24,000 patients in a few days, that’s disruptive.”

Verghese gave the annual Simon Dack Lecture which was widely noted in the media. Entitling his lecture “I Carry Your Heart,” he talked about the importance of words and touch and rituals. “The relationships we have with patients are unlike any other relationships in society. It’s a powerful encounter,” he said.

Among the many additional Stanford accomplishments at ACC15 were the following: ACC Young Investigator Award Recipients: Joshua Knowles (2nd place) and Atsushi Tachibana (3rd place); many session co-chairs: Todd Brinton, David Maron, Ken Mahaffey, Mintu Turakhia, Paul Zei, Shirley Park, Jennifer Tremmel, Ron Witteles; and several oral presenters: Sanjiv Narayan, Jennifer Tremmel, Peter Fitzgerald, Euan Ashley, Mark Hlatky, and Marco Perez.

Full story at: <http://medicine.stanford.edu/news/current-news/standard-news/stanford-shines-at-acc-san-diego.html>

Low Dose Radiation Affects of SPECT MPI



Patricia Nguyen, MD

A recent study, by Patricia Nguyen, MD, Assistant Professor, and Won Hee Lee, PhD, analyzed the biological consequences of low-dose radiation from single-photon emission computed tomography myocardial perfusion imaging (SPECT MPI) in patients. While this technique facilitates diagnosis and risk stratification of patients with suspected coronary artery disease it was shown that some patients showed signs of potential DNA damage after SPECT. The article entitled ‘Variable activation of the DNA damage response pathways in patients undergoing single-photon emission computed tomography myocardial perfusion imaging,’ was published in *Circulation Cardiovascular Imaging* 2015 Feb;8(2). <http://www.ncbi.nlm.nih.gov/pubmed/25609688>



Inaugural Childx Conference at Stanford

By Erin Digitale Pediatrics Science Writer for Stanford Medical School's Office of Communication & Public Affairs

The conference, developed and sponsored by Stanford’s Child Health Research Institute, had five themes:

- The expansion of stem cell and gene therapy for child health
- The arc of fetal, developmental/cognitive and adult health
- The acceleration of child and maternal health innovation
- Precision medicine for rare and historically untreatable childhood diseases
- The health ecosystem and the impact of social, economic, political, environmental and cultural issues on children’s health and well-being

CVI MEMBERS

Sean Wu, MD, PhD, Assistant Professor of Medicine and Pediatrics (by courtesy),
Daria Mochly-Rosen, PhD, Professor in Chemical and Systems Biology,
Euan Ashley, MD, Associate Professor of Medicine (Cardiovascular),
Hiro Nakauchi, MD, PhD, Professor of Genetics presented their work.

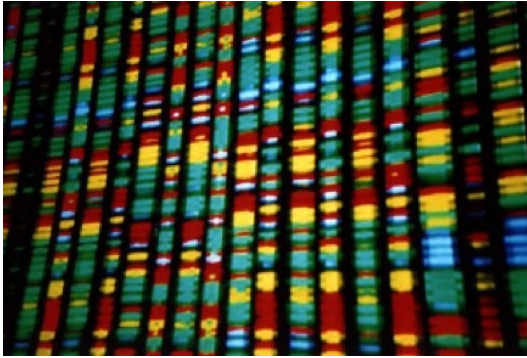
Details: childx.stanford.edu

Stanford 
Cardiovascular Institute

The Cardiovascular
Institute
Annual Symposium
Tuesday, October 27, 2015
Clark Center Auditorium

International Team Led by Stanford Researchers Identifies Gene Linked to Insulin Resistance

by Becky Bach, Stanford School of Medicine



Back in the 1970s and 1980s, Stanford's Gerald Reaven, MD, had the darndest time convincing others that type 2 diabetes wasn't caused by a lack of insulin. No one would believe him that, as we now know, type 2 diabetics are insulin resistant — their cells no longer respond to insulin's cue to take in glucose.

Fast-forward a few years. Insulin resistance has been implicated in a slew of symptoms such as high blood pressure and heart troubles known as metabolic syndrome — it isn't just a problem for diabetes. Scientists knew that about half of insulin resistance was governed by weight, exercise and diet. But the heredity half was a mystery — until now.

Thanks to an international collaboration and many months of work, a team of researchers led by Joshua Knowles, MD, PhD, and Thomas Quertermous, MD, have found the first gene known to contribute to insulin resistance. It's called NAT2, and when mutated, it leads to a greater chance for carriers to become insulin resistant.

This work is entitled: "Identification and Validation of N-acetyltransferase 2 as an insulin sensitivity gene," and was published in the *Journal of Clinical Investigation* (2015 Apr 1;125(4):1739-51; <http://www.ncbi.nlm.nih.gov/pubmed/25798622>).

<http://scopeblog.stanford.edu/2015/03/23/scientists-identify-gene-linked-to-insulin-resistance/>

Stanford Launches Major Effort to Expedite Vaccine Discovery with \$50 Million Grant

by Stanford School of Medicine

Stanford University has received a grant from the Bill & Melinda Gates Foundation to accelerate efforts in vaccine development.

The \$50 million grant over 10 years will build on existing technology developed at Stanford and housed in the Human Immune Monitoring Core, and will establish the Stanford Human Systems Immunology Center. The center aims to better understand how the immune system can be harnessed to develop vaccines for the world's most deadly infectious diseases.

While illnesses like polio and measles are now readily preventable, scientists have been stymied in their efforts to fight diseases such as HIV and malaria. In part, this is because large-scale clinical trials can cost hundreds of millions of dollars and can take up to 10 years to determine the success — or often failure — of a vaccine candidate.

The work funded through the new center will enable researchers in diverse fields of study at Stanford and other institutions to use advanced immunological tools to understand how vaccines protect and to help prioritize the most promising vaccines for clinical trials.

The center will be led by Mark Davis, PhD, of Stanford's School of Medicine, and will also involve faculty in the School of Engineering. Their effort furthers the university's commitment to



*Immunologist Mark Davis says new approaches are needed to determine which vaccines will be the most effective for particular diseases.
Photo by Steve Fisch*

addressing global problems through novel, interdisciplinary collaborations.

The Stanford Human Systems Immunology Center will draw upon a repertoire of technologies, many of which have been pioneered at Stanford, to provide a detailed profile of the human immune response.

Seed grants will be made available to Stanford faculty, as well as investigators from other institutions, in order to fuel innovations in immunology and vaccine-related efforts.

<http://med.stanford.edu/news/all-news/2015/01/stanford-launches-major-effort-to-expedite-vaccine-discovery.html>

Fresh Perspectives : CVI 2014 Manuscript Awards



Joshua Spin, MD, Clinical Assistant Professor, Cardiovascular

“miR-24 Limits Aortic Vascular Inflammation and Murine Abdominal Aneurysm Development” in *Nature Communications*, 2014 Oct 31;5:5214.

This manuscript represents a significant advance in our understanding of abdominal aortic aneurysm (AAA) biology, revealing key pathophysiologic roles and translational potential for microRNA-24 and its target, the novel cytokine CHI3L1. These findings suggest new avenues in the monitoring and treatment of a common and potentially lethal disease.



Pei Han, PhD, Basic Life Science Research Associate

“A Long Noncoding RNA Protects the Heart from Pathological Hypertrophy” in *Nature Letters*, 2014 Oct 2;514(7520):102-6.

In the paper, we identified the first long non-coding RNA (lncRNA), Myheart, that can protect the heart from hypertrophy and heart failure. This lncRNA is specifically localized to the nuclei of cardiomyocytes and abundant in adult hearts. We also found Myheart inhibits the function of Brg1, a pro-hypertrophy chromatin-remodeling factor, by directly binding to the helicase core of Brg1. Our studies thus identify a cardioprotective lncRNA, and establish a new paradigm of lncRNA-chromatin interaction, which may also inspire new therapies for cardiovascular diseases.



Antje Ebert, PhD, Postdoctoral Fellow

“Characterization of the Molecular Mechanisms Underlying Increased Ischemic Damage in the Aldehyde Dehydrogenase 2 Genetic Polymorphism Using a Human Induced Pluripotent Stem Cell Model System” in *Science Translational Medicine*, 2014 Sep 24;6(255):255ra130

Nearly 8% of the human population carries an inactivating point mutation in the gene that encodes the cardioprotective enzyme aldehyde dehydrogenase 2 (ALDH2). Our results reveal a new function for the metabolic enzyme ALDH2 in modulation of cell survival decisions. Insight into the molecular mechanisms that mediate ALDH2-related increased ischemic damage is important for the development of specific diagnostic methods and improved risk management of CAD (coronary artery disease) and may lead to patient-specific cardiac therapies.

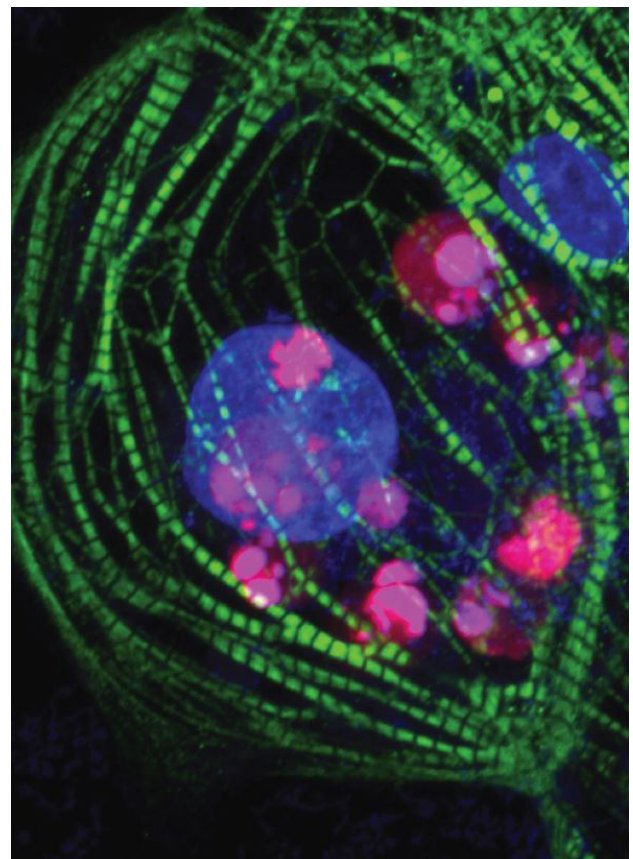


Arun Sharma, PhD Graduate Student

“Human Induced Pluripotent Stem Cell-derived Cardiomyocytes as an in vitro Model for coxsackievirus b3-induced Myocarditis and Antiviral Drug Screening Platform” featured on the cover of *Circulation Research*, 2014 Aug 29;115(6):556-66

Viral myocarditis is a life-threatening cardiac disease that arises when the heart is infected by a virus such as CVB3. However, it is difficult to obtain human heart tissues with which to study the mechanisms of this disease because cardiac biopsies are invasive and expensive. Recent advances have allowed for the mass production of human heart cells from a patient's own skin or blood samples. Using this hiPSC-CM technology, we were able to study the mechanisms of CVB3 infection on human cardiomyocytes. We found that hiPSC-CMs express the coxsackievirus receptor needed to internalize CVB3, and hiPSC-CMs are highly susceptible to CVB3 infection because the virus is able to proliferate rapidly and destroy the cells in a matter of hours. The CVB3/hiPSC-CM system that we established here could serve as a platform for discovering novel antiviral compounds that can effectively treat patients suffering from viral myocarditis.

For more: <http://cvi.stanford.edu/research/2014-manuscript-awards.html>



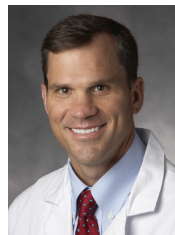
Recent Acknowledgements



Robert Harrington, MD, Robert Harrington, MD, Professor of Medicine was nominated into the Association of University Cardiologists (AUC). Founded in 1961, AUC is an organization that is limited to an active membership of 125 academic cardiologists from the United States, elected by their peers. The group meets once per year in January for a two-day session of scientific interchange.



Marco Perez, MD, Marco Perez, MD has been appointed Assistant Professor of Cardiovascular Medicine starting May 1st. Dr. Perez aims to understand the fundamental causes of cardiovascular disease through the study of genetics and epidemiology. His group studies the genetic variations and environmental exposures that are associated with conditions such as atrial fibrillation and heart failure. As Director of the Stanford Inherited Arrhythmia Clinic, he evaluates families with rare inherited arrhythmias associated with sudden death such as Long QT and Brugada Syndromes and explores their links with novel genes. Dr. Perez receives funding from the NIH, the Robert Wood Johnson Foundation, AHA, and the Stanford Cardiovascular Institute.



William Fearon, MD, Professor of Medicine (Cardiovascular Medicine) at the Stanford University Medical Center, was elected into the American Society of Clinical Investigation (ASCI). The ASCI is an honor society of physician-scientists, those who translate findings in the laboratory to the advancement of clinical practice. Founded in 1908, the Society is home to more than 3,000 members who are in the upper ranks of academic medicine and industry.



Mark Hlatky, MD, was presented with the “Distinguished Scientist Award” at the recent American College of Cardiology (ACC) Scientific Sessions in San Diego, in recognition of his contributions to clinical research in cardiovascular medicine. This is the third major award he has received in the past year, the others being: the Lifetime Achievement award from the Council on Quality of Care and Outcomes Research in June 2014; and the Distinguished Scientist Award of the American Heart Association (AHA) in November 2014). He is one of the few researchers ever to receive the Distinguished Scientist Awards of both the American Heart Association (AHA) and the ACC.



Joseph C. Wu, MD, PhD, Professor of Medicine and of Radiology and Director of the Stanford Cardiovascular Institute. Joseph Wu, MD, PhD, Director of the Stanford Cardiovascular Institute, was elected into the Association of American Physicians (AAP). The AAP is a nonprofit, professional organization founded in 1885 by seven physicians, for “the advancement of scientific and practical medicine.” Each year, individuals having attained excellence in achieving these goals, are recognized by nomination for membership by the Council of the Association.

Join Our Team: CVI/CT-Surgery Faculty Search

The Stanford Cardiovascular Institute (CVI) and the Stanford Department of Cardiothoracic Surgery (CTS) is seeking an academic cardiovascular investigator at the Assistant Professor (Non-Tenure Research Line) level to develop and maintain a productive research program, participate in education and scholarly collaborative activities of the CVI, and provide mentorship for trainees.

We seek outstanding candidates with a PhD, MD, or MD/PhD degree and appropriate postdoctoral experience who have demonstrated the ability to develop a high-quality independent research program distinguished by exceptional originality and productivity. We are particularly interested in an outstanding investigator with expertise in the fields of, but are not limited to, gene therapy, stem cell biology, regenerative medicine, non-coding RNAs, cardiac lineage differentiation and cell fate, and/or in vitro and in vivo model systems of cardiovascular disease.

For a full job description, application requirements, and any other questions please contact Ms. Corrine Sanchez (corrine.sanchez@stanford.edu); or visit: http://cvi.stanford.edu/content/dam/sm/cvi/documents/news_documents/cvi-cv-investigator-position.docx.

Mail your applications to: Joseph Woo, MD, Search Committee Chair, c/o Corrine Sanchez, CVRB, Falk Bldg., Mail Code 5407, 300 Pasteur Drive, Stanford, CA, 94305-5407.



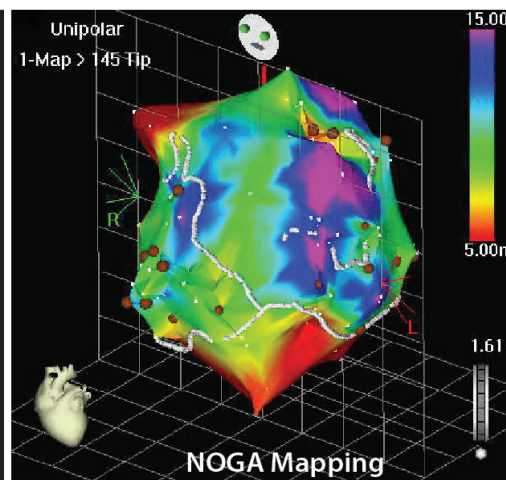
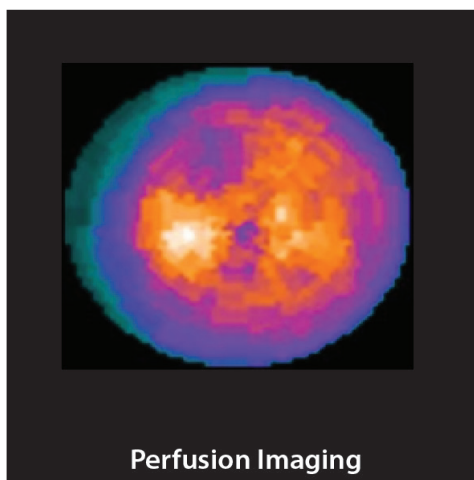
Stanford CVI Human iPSC Biobank Service

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 'you give us patient blood and we provide reprogrammed cells for you to culture and study free of charge'. Please contact Joseph Wu, MD, PhD (joewu@stanford.edu) or Biobank manager, Justin Vincent (justin81@stanford.edu). <http://med.stanford.edu/scvibiobank.html>

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: <http://www.nature.com/nmeth/journal/v12/n2/full/nmeth.3263.html>.

Clinical Biomarker & Phenotyping Core Lab (BPCL)



Our Mission

We provide 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.

Key Initiatives

- 1. Stanford Athletic Screening Program.** *The BPCL is the core laboratory responsible for the echocardiographic studies of Stanford Athletic Screening Program and has imaged more than 500 athletes.*
- 2. Stanford Immune Aging Longitudinal Study.** *The BPCL is the core providing clinical cardiovascular phenotypes for collaboration through the NIH funded projects of the Immunity Transplantation and Infection Institute led by Mark Davis, MD.*
- 3. The Pulmonary Hypertension Wall Center Outcome and Physiology Studies.** *The BPCL works closely with the Vera Moulton Wall Center for Pulmonary Vascular Disease to provide quantitative echocardiographic assessment of the right heart.*
- 4. The CCML-Stanford Collaborative Effort.** *Through a close collaboration with the University of Paris and the Marie-Lannelongue surgical center (CCML), the BPCL is providing quantitative analysis of experimental and clinical studies focused on right heart physiology. The CCML is a recognized worldwide center of expertise in pulmonary hypertension (Elie Fadel MD PhD and Olaf Mercier MD PhD).*

Our Services

We provide a comprehensive assessment of cardiovascular structure and function, exercise physiology and endothelial function within 2 hours.

Services include the following:

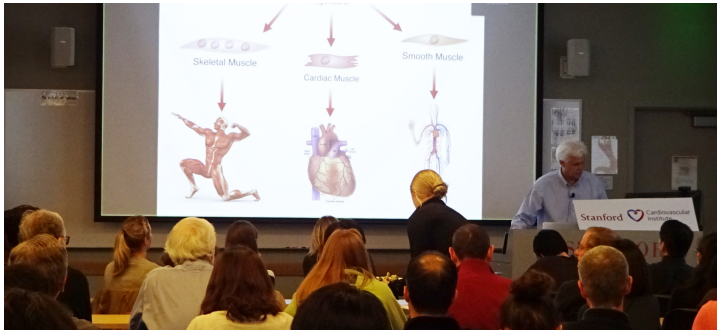
- Echocardiography Vascular assessment
- Endothelial function testing
- Cardiopulmonary exercise testing
- Electrocardiography and heart rate and QT variability
- Other important phenotypes such as calcium scores, CT angiography, MRI and SPECT and PET imaging
- Core biomarker laboratory services

Contact Us

Francois Haddad, MD, (fhaddad@stanford.edu) or Ingrid Ibarra, PhD, (iibarra@stanford.edu) at the Cardiovascular Institute.

Frontiers in Cardiovascular Science

Lunch with Leaders: Every Tuesday | 12 - 1 p.m.



The Frontiers in Cardiovascular Science seminar series features leaders in the cardiovascular field around the country and Stanford.

LEFT: Frontiers speaker Eric N. Olson, PhD, Professor and Chairman of the Department of Molecular Biology at UT Southwestern Medical Center at Dallas, spoke to a crowd of 170 faculty, postdocs and students, about "Understanding Muscle Development Disease and Regeneration."

APRIL 07, 2015

Irv Weissman, MD

Director, Stanford Stem Cell and Regenerative Medicine Institute

APRIL 14, 2015

William Slikker, Jr., PhD

Director, National Center for Toxicological Research (FDA)

APRIL 21, 2015

Leslie Leinwand, PhD

Professor, Molecular, Cellular & Cellular Biology, Univ of Colorado-Boulder CSO, BioFrontiers Institute

APRIL 28, 2015

Junichi Sadoshima, MD, PhD

Professor & Chair, Department of Cell Biology
Rutgers University

MAY 05, 2015

Dipanjan Banerjee, MD

Assistant Professor of Medicine, Stanford University

Richard Ha, MD

Assistant Professor of CT Surgery, Stanford University

MAY 12, 2015

Mark Davis, PhD

Director, Immunology Institute, Stanford University

Francois Haddad, MD

Assistant Professor of Medicine
Stanford University

MAY 19, 2015

Paul Wang, MD

& Sanjiv Narayan, MD, MSc
Professors of Medicine
Stanford University

MAY 26, 2015

Zoltan Arany, MD, PhD

Assoc Professor of Medicine, University of Pennsylvania

JUNE 09, 2015

Garrett Fitzgerald, MD

Associate Dean for Translational Research, University of Pennsylvania

SEPTEMBER 15, 2015

Michael S. Parmacek, MD

Chair, Department of Medicine
Univ of Pennsylvania,
Perelman School of Medicine

SEPTEMBER 22, 2015

Elizabeth M. McNally, MD, PhD

Director, Center for Genetic Medicine
Northwestern University Feinberg School of Medicine

OCTOBER 6, 2015

Dean Y. Li, MD, PhD

HA and Edna Bennis Professor of Medicine, Associate Vice President for Research and Chief Scientific Officer, Health Sciences; Vice Dean for Research, School of Medicine

OCTOBER 06, 2015

Michael R. Bristow, MD, PhD

Professor of Medicine, Cardiology
CU Cardiovascular Institute (CU CVI)

DECEMBER 01, 2015

Donald M. Bers, PhD

Professor and Chair,
Department of Pharmacology
University of California, Davis

DECEMBER 08, 2015

Anthony Rosenzweig, MD

Professor and Chief, Cardiovascular Medicine
Harvard, Massachusetts General Hospital

DECEMBER 15, 2015

Gordon F. Tomaselli, MD,

Professor and Chief, Cardiovascular Medicine
Johns Hopkins University



Visit the CVI YouTube Channel for selected past talks: <http://tinyurl.com/cvifrontiers>

Available videos feature talks by: Roy P. Vagelos, MD; Jonathan Lindner, MD; Bernard Gersh, MB, ChB, D.Phil; Joseph Hill, MD, PhD; and Joseph Wu, MD, PhD.

For additional information on the Frontiers in Cardiovascular Science seminar series, and on how to attend, contact CVI Program Manager David L. M. Preston at preston@stanford.edu.



Stanford's Cardiovascular Surgical and Medicine Symposium

May 8-9, 2015

The Ritz-Carlton, Half-Moon Bay, CA

Presented by the Department of Cardiothoracic Surgery and Stanford Health Care

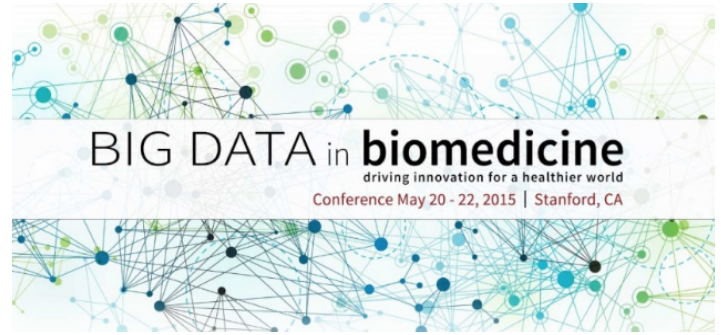
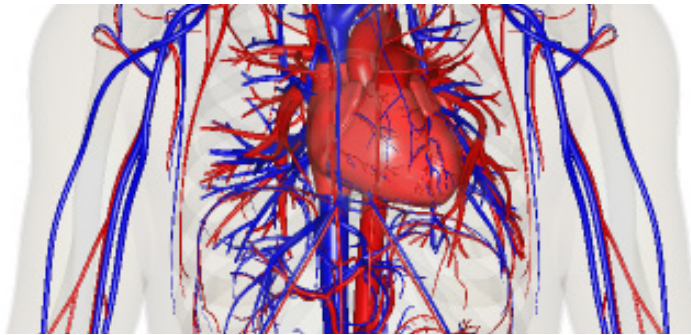
*Sponsored by the Stanford University School of Medicine
med.stanford.edu/cme/courses/2015/scms15.html*

EP in the West 2015

October 23 - 24, 2015

Hyatt Regency, Monterey, CA

cme.stanford.edu/cardio



Stanford Coronary Physiology Conference 2015

October 9-10, 2015

LKSC, Stanford, CA

cme.stanford.edu/cardio

Big Data in Biomedicine Conference

May 20-22, 2015

Stanford, CA

bigdata.stanford.edu



Jennifer Tremmel, MD, MS



Marcia Stefanick, PhD

WSDM and Women's Heart Health at Stanford will co-host the 2015 Annual Meeting of the Organization for the Study of Sex Differences (OSSD) on April 21 - 23, 2015

CAPSTONE LECTURE

Thursday 3:30 - 4:30 p.m., available to all-courtesy of Stanford Cardiovascular Institute

Vera Regitz-Zagrosek, MD "Sex and Sex Hormones in Physiological and Pathological Cardiovascular Stress – "Implications to Management of Human Disease"



APRIL

The European Stroke Organization Conference 2015

April 17–19, 2015
Glasgow, United Kingdom
ESO 2015

Intravascular Coronary Imaging and Physiology

April 17–18, 2015
New York, NY
Clinical Workshop

Cardiovascular Research Foundation-Annual Echocardiography Conference

April 26–28, 2015
New York, NY
nyechocourse.com

International Conference on Clinical & Experimental Cardiology

April 27–29, 2015
Philadelphia, PA
cardiology2014.conferenceseries.net/index.php

Cardiovascular Summit TCTAP 2015

April 28 – May 1, 2015
Coex, Seoul, Korea
Cardiovascular Summit

Asian Pacific Society of Cardiology Congress

April 29–May 2, 2015
Abu Dhabi, United Arab Emirates
APSC 2015

Quality of Care and Outcomes Research 2015

April 29–May 1, 2015
Baltimore, MD
QCOR 2015

Weinstein Cardiovascular Development Conference

April 29–May 2, 2015
Boston, MA
weinsteinmeeting.org

AHA Quality of Care and Outcomes Research (QCOR)

April 29, May 1, 2015
Baltimore, MD
my.americanheart.org/professional/Sessions/QCOR/QCOR_UCM_316906_SubHomePage.jsp

MAY

SVS-Vascular Research Initiative Conference

May 6, 2015
San Francisco, CA
vascularweb.org/educationandmeetings/Pages/vascular-research-initiatives-conference.aspx

Arteriosclerosis, Thrombosis and Vascular biology; Peripheral Vascular Disease

May 7–9, 2015
San Francisco, CA
ATVB PVD 2015

Heart Rhythm Society Meeting

May 13–16, 2015
San Francisco, CA
hrsonline.org/Education-Meetings/Scientific-Sessions/Events/2014/Heart-Rhythm-2014#axzz2lb46LvI0

Stanford Cardiovascular Tissue Engineering Symposium

May 22, 2015
Stanford, CA
<http://cvi.stanford.edu/mission/cardiac-engineering-symposium.html>

International Symposium on Stem Cell Therapy & Cardiovascular Innovations

May 28–29, 2015
Madrid, Spain
cardiovascularcelltherapy.com

JUNE

International Society for Heart Research (ISHR)

June 7–10, 2015
Seattle, WA
<http://tinyurl.com/o647s36>

Cardiovascular Research Foundation-Transcatheter Valve Therapies (TVT)

June 4–6, 2015
Chicago, IL
crf.org/tvt

Society for Vascular Medicine (SVM)

June 11–13, 2015
Baltimore, Maryland
vascularmed.org/am15

American Society of Echocardiography

June 12–16, 2015
Boston, MA
asescientificsessions.org

17th Annual International Drug Delivery Symposium: Diverse Therapeutic Approaches to Address Disease Heterogeneity

June 14–18, 2015
Salt Lake City, UT
<http://drugdeliversymposium.utah.edu/>

Vascular and Endovascular Surgery Society – Spring Meeting

June 17–20, 2015
Chicago, IL
pvss.org

Vascular Annual Meeting

June 17–20, 2015
Chicago, IL
vascularweb.org/educationandmeetings/2015vam/Pages/home.aspx

JULY

American Heart Association (AHA) Basic Cardiovascular Sciences Scientific Sessions

July 13–16, 2015
New Orleans, LA
BCVS 2015

Member Publications

Communication is at the heart of scientific advancement and innovation. This quarter Stanford Cardiovascular Institute members published over 226 original manuscripts and reviews further contributing to our understanding of cardiovascular biology and disease. In the following pages we highlight selected manuscripts by our members.

JANUARY 61 Publications

Genetic targeting of sprouting angiogenesis using A_{pln}-CreER. Liu Q, Hu T, He L, Huang X, Tian X, Zhang H, He L, Pu W, Zhang L, Sun H, Fang J, Yu Y, Duan S, Hu C, Hui L, Zhang H, **Quertermous T**, Xu Q, **Red-Horse K**, Wythe JD, Zhou B. *Nat Commun*. 2015 Jan 19;6:6020.

Successful reprogramming of epiblast stem cells by blocking nuclear localization of β -catenin. Murayama H, Masaki H, Sato H, Hayama T, Yamaguchi T, **Nakauchi H**. *Stem Cell Reports*. 2015 Jan 13;4(1):103-13.

Novel codon-optimized mini-intronic plasmid for efficient, inexpensive, and xeno-free induction of pluripotency. Diecke S, Lu J, **Lee J**, Termglinchan V, **Kooreman NG**, Burrige PW, Ebert AD, **Churko JM**, Sharma A, Kay MA, **Wu JC**. *Sci Rep*. 2015 Jan 28;5:8081.

Hemodynamic Monitoring of Large Animal Chronic Studies after Median Sternotomy: Experiences with Different Telemetric Physiological Devices. Fujii Y, Pitsillides K, Ferro G, Kagawa H, Centola L, Kinouchi K, Zhu L, Ferrier WT, Talken L, **Nasirov T**, **Riemer RK**, **Reinhartz O**. *ASAIO J*. 2015 Jan 29.

Contrast-Enhanced C-arm Computed Tomography Imaging of Myocardial Infarction in the Interventional Suite. Girard EE, **Al-Ahmad A**, Rosenberg J, Luong R, Moore T, Lauritsch G, Chan F, **Lee DP**, **Fahrig R**. *Invest Radiol*. 2015 Jan 29.

Predictors and clinical outcomes of permanent pacemaker implantation after transcatheter aortic valve replacement: the PARTNER (Placement of Aortic Transcatheter Valves) trial and registry. Nazif TM, Dizon JM, Hahn RT, Xu K, Babaliaros V, Douglas PS, El-Chami MF, Herrmann HC, Mack M, Makkar RR, **Miller DC**, Pichard A, Tuzcu EM, Szeto WY, Webb JG, Moses JW, Smith CR, Williams MR, Leon MB, Kodali SK; PARTNER Publications Office. *JACC Cardiovasc Interv*. 2015 Jan;8(1 Pt A):60-9.

Vascularization in Bone Tissue Engineering Constructs. Mercado-Pagán ÁE, Stahl AM, Shanjani Y, **Yang Y**. *Ann Biomed Eng*. 2015 Jan 24.

Transient delivery of modified mRNA encoding TERT rapidly extends telomeres in human cells. Ramunas J, Yakubov E, Brady JJ, Corbel SY, Holbrook C, **Brandt M**, Stein J, Santiago JG, Cooke JP, **Blau HM**. *FASEB J*. 2015 Jan 22.

Neurological complications and outcomes in the Berlin Heart EXCOR[®] pediatric investigational device exemption trial. Jordan LC, Ichord RN, **Reinhartz O**, Humpl T, Pruthi S, Tjossem C, **Rosenthal DN**. *J Am Heart Assoc*. 2015 Jan 22;4(1):e001429.

Quality of life in pediatric patients affected by electrophysiologic disease. Czosek RJ, Cassidy AE, Wray J, Wernovsky G, Newburger JW, Mussatto KA, Mahony L, Tanel RE, Cohen MI, Franklin RC, Brown KL, **Rosenthal D**, Rotar D, Marino BS. *Heart Rhythm*. 2015 Jan 17.

Age-specific performance of the revised cardiac risk index for predicting cardiovascular risk in elective noncardiac surgery. Andersson C, Wissenberg M, Jørgensen ME, **Hlatky MA**, Mérie C, Jensen PF, Gislason GH, Køber L, Torp-Pedersen C. *Circ Cardiovasc Qual Outcomes*. 2015 Jan;8(1):103-8.

Success Rates in Pediatric WPW Ablation Are Improved with 3-Dimensional Mapping Systems Compared with Fluoroscopy Alone: A Multicenter Study.

Ceresnak SR, **Dubin AM**, Kim JJ, Valdes SO, Fishberger SB, Shetty I, Zimmerman F, Tanel RE, Epstein MR, **Motonaga KS**, Capone CA, Nappo L, Gates GJ, Pass RH. *J Cardiovasc Electrophysiol*. 2015 Jan 19.

Identification and specification of the mouse skeletal stem cell. Chan CK, Seo EY, Chen JY, Lo D, McArdle A, Sinha R, Tevlin R, Seita J, Vincent-Tompkins J, Wearda T, Lu WJ, Senarath-Yapa K, Chung MT, Marecic O, Tran M, Yan KS, Upton R, Walmsley GG, **Lee AS**, Sahoo D, **Kuo CJ**, **Weissman IL**, **Longaker MT**. *Cell*. 2015 Jan 15;160(1-2):285-98.

Robust primary modulation-based scatter estimation for cone-beam CT. Ritschl L, **Fahrig R**, Knaup M, Maier J, Kachelrieß M. *Med Phys*. 2015 Jan;42(1):469-78.

Thermal regulation of tightly packed solid-state photodetectors in a 1 mm(3) resolution clinical PET system. Freese DL, Vandenbroucke A, Innes D, Lau FW, Hsu DF, Reynolds PD, **Levin CS**. *Med Phys*. 2015 Jan;42(1):305-13.

Subcellular trafficking of FGF controls tracheal invasion of drosophila flight muscle. Peterson SJ, **Krasnow MA**. *Cell*. 2015 Jan 15;160(1-2):313-23.

Reproducibility in science: improving the standard for basic and preclinical research. Begley CG, **Ioannidis JP**. *Circ Res*. 2015 Jan 2;116(1):116-26.

The myosin mesa and a possible unifying hypothesis for the molecular basis of human hypertrophic cardiomyopathy. **Spudich JA**. *Biochem Soc Trans*. 2015

Quantifying on- and off-target genome editing. Hendel A, Fine EJ, Bao G, **Porteus MH**. *Trends Biotechnol*. 2015

Molecular regulation of cardiomyocyte differentiation. Paige SL, Plonowska K, Xu A, **Wu SM**. *Circ Res*. 2015 Jan 16;116(2):341-53.

FEBRUARY 82 Publications

The role of rotors in atrial fibrillation. Krummen DE, Swarup V, **Narayan SM**. *J Thorac Dis*. 2015 Feb;7(2):142-51.

Differential fates of biomolecules delivered to target cells via extracellular vesicles. Kanada M, Bachmann MH, Hardy JW, Frimannson DO, Bronsart L, **Wang A**, Sylvester MD, Schmidt TL, Kaspar RL, Butte MJ, Matin AC, **Contag CH**. *Proc Natl Acad Sci U S A*. 2015 Feb 23

The Effects of Cinacalcet in Older and Younger Patients on Hemodialysis: The Evaluation of Cinacalcet HCl Therapy to Lower Cardiovascular Events (EVOLVE) Trial. Parfrey PS, Drüeke TB, Block GA, Correa-Rotter R, Floege J, Herzog CA, London GM, **Mahaffey KW**, Moe SM, Wheeler DC, Kubo Y, Dehmel B, Goodman WG, Chertow GM; for the Evaluation of Cinacalcet HCl Therapy to Lower Cardiovascular Events (EVOLVE) Trial Investigators. *Clin J Am Soc Nephrol*. 2015 Feb 20

Congenital heart disease assessment with 4D flow MRI. **Vasanawala SS**, Hanneman K, Alley MT, Hsiao A. *J Magn Reson Imaging*. 2015 Feb 24.

Neonatal pulmonary arterial hypertension and Noonan syndrome: Two fatal cases with a specific RAF1 mutation. **Hopper RK, Feinstein JA**, Manning MA, Benitz W, Hudgins L. *Am J Med Genet A*. 2015 Feb 23

Biventricular Berlin Heart EXCOR Pediatric Use Across the United States. Zafar F, Jefferies JL, Tjossem CJ, Bryant R 3rd, Jaquiss RD, Wearden PD, **Rosenthal DN**, Cabrera AG, Rossano JW, Humpl T, Morales DL. *Ann Thorac Surg*. 2015 Feb 20.

Safety and efficacy of antiplatelet/anticoagulation regimens after Viabahn stent graft treatment for femoropopliteal occlusive disease. Ullery BW, Tran K, Itoga N, Casey K, **Dalman RL, Lee JT**. *J Vasc Surg*. 2015 Feb 19.

Outcomes of Inoperable Symptomatic Aortic Stenosis Patients Not Undergoing Aortic Valve Replacement: Insight Into the Impact of Balloon Aortic Valvuloplasty From the PARTNER Trial (Placement of AoRtic TraNscath-etER Valve Trial). Kapadia S, Stewart WJ, Anderson WN, Babaliarios V, Feldman T, Cohen DJ, Douglas PS, Makkar RR, Svensson LG, Webb JG, Wong SC, Brown DL, **Miller DC**, Moses JW, Smith CR, Leon MB, Tuzcu EM. *JACC Cardiovasc Interv*. 2015 Feb;8(2):324-33.

Health Status After Transcatheter Aortic Valve Replacement in Patients at Extreme Surgical Risk: Results From the CoreValve U.S. Trial. Osnabrugge RL, Arnold SV, Reynolds MR, Magnuson EA, Wang K, Gaudiani VA, Stoler RC, **Burdon TA**, Kleiman N, Reardon MJ, Adams DH, Popma JJ, Cohen DJ; CoreValve U.S. Trial Investigators. *JACC Cardiovasc Interv*. 2015 Feb;8(2):315-23.

Substrate stress relaxation regulates cell spreading. **Chaudhuri O**, Gu L, Darnell M, Klumpers D, Bencherif SA, Weaver JC, Huebsch N, Mooney DJ. *Nat Commun*. 2015 Feb 19;6:6365.

Integrative analysis of haplotype-resolved epigenomes across human tissues. Leung D, Jung I, Rajagopal N, Schmitt A, Selvaraj S, Lee AY, Yen CA, **Lin S**, Lin Y, Qiu Y, Xie W, Yue F, Hariharan M, Ray P, Kuan S, Edsall L, Yang H, Chi NC, Zhang MQ, Ecker JR, Ren B. *Nature*. 2015 Feb 19;518(7539):350-4.

Modeling Cardiovascular Diseases with Patient-Specific Human Pluripotent Stem Cell-Derived Cardiomyocytes. **Burridge PW, Diecke S**, Matsa E, Sharma A, Wu H, **Wu JC**. *Methods Mol Biol*. 2015 Feb 18.

Safety of Ventricular Tachycardia Ablation in Clinical Practice: Findings from 9,699 Hospital Discharge Records. Katz DF, **Turakhia MP**, Sauer WH, Tzou WS, Heath RR, Zipse MM, Aleong RG, Varosy PD, Kao DP. *Circ Arrhythm Electrophysiol*. 2015 Feb 15

A randomized trial of a dedicated bifurcation stent versus provisional stenting in the treatment of coronary bifurcation lesions. Génèreux P, Kumsars I, Lesiak M, Kini A, Fontos G, Slagboom T, Ungi I, Metzger DC, Wykrzykowska JJ, Stella PR, Bartorelli AL, **Fearon WF**, Lefèvre T, Feldman RL, LaSalle L, Francese DP, Onuma Y, Grundeken MJ, Garcia-Garcia HM, Laak LL, Cutlip DE, Kaplan AV, Serruys PW, Leon MB. *J Am Coll Cardiol*. 2015 Feb 17;65(6):533-43.

Enabling the curation of your pharmacogenetic study. McDonagh E, Whirl-Carrillo M, **Altman R**, Klein T. *Clin Pharmacol Ther*. 2015 Feb;97(2):116-9.

E2a Is Necessary for Smad2/3-Dependent Transcription and the Direct Repression of lefty during Gastrulation. Wills AE, **Baker JC**. *Dev Cell*. 2015 Feb 9;32(3):345-57.

Triglyceride/High-Density Lipoprotein Cholesterol Concentration Ratio Identifies Accentuated Cardio-Metabolic Risk. Armato J, **Reaven G**, Ruby R. *Endocr Pract*. 2015 Feb 9:1-18. [Epub ahead of print]

Tricuspid Valve Regurgitation in Congenitally Corrected Transposition of the Great Arteries and a Left Ventricle to Pulmonary Artery Conduit. Buber J, **McElhinney DB**, Valente AM, Marshall AC, Landzberg MJ. *Ann Thorac Surg*. 2015 Feb 5.

A delicate balance: the cost effectiveness of new antiplatelet agents. Kazi DS, **Hlatky MA**. *J Am Coll Cardiol*. 2015 Feb 10;65(5):477-9.

Economic Analysis of Ticagrelor Therapy From a U.S. Perspective: Results From the PLATO Study. Cowper PA, Pan W, Anstrom KJ, Kaul P, Wallentin L, Davidson-Ray L, Nikolic E, Janzon M, Levin LÅ, Cannon CP, **Harrington RA**, Mark DB. *J Am Coll Cardiol*. 2015 Feb 10;65(5):465-76.

Ascl2 reinforces intestinal stem cell identity. Yan KS, **Kuo CJ**. *Cell Stem Cell*. 2015 Feb 5;16(2):105-6.

Dissecting the Roles of MicroRNAs in Coronary Heart Disease via Integrative Genomic Analyses. Huan T, Rong J, Tanriverdi K, Meng Q, Bhattacharya A, McManus DD, Joehanes R, **Assimes TL**, McPherson R, Samani NJ, Erdmann J, Schunkert H, Courchesne P, Munson PJ, Johnson AD, O'Donnell CJ, Zhang B, Larson MG, Freedman JE, Levy D, Yang X. *Arterioscler Thromb Vasc Biol*. 2015 Feb 5.

Mechanical systems biology of *C. elegans* touch sensation. Krieg M, **Dunn AR**, Goodman MB. *Bioessays*. 2015 Mar;37(3):335-44.

Direct Evaluation of Myocardial Viability and Stem Cell Engraftment Demonstrates Salvage of the Injured Myocardium. **Kim PJ**, Mahmoudi M, Ge X, Matsuura Y, Toma I, Metzler S, **Kooreman NG**, Ramunas J, Holbrook C, **McConnell MV, Blau HM**, Harnish P, Rulifson E, **Yang PC**. *Circ Res*. 2015 Feb 5.

Evaluation of late aortic insufficiency with continuous flow left ventricular assist device† Hiraoka A, Cohen JE, Shudo Y, MacArthur JW Jr, Howard JL, Fairman AS, Atluri P, Kirkpatrick JN, **Woo YJ**. *Eur J Cardiothorac Surg*. 2015 Feb 3

Suppression of insulin production and secretion by a decterin hormone. Alfa RW, Park S, Skelly KR, Poffenberger G, Jain N, Gu X, Kockel L, Wang J, Liu Y, Powers AC, **Kim SK**. *Cell Metab*. 2015 Feb 3;21(2):323-33.

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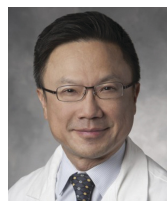
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