



SDDS 2022

Stanford Drug Discovery Symposium

April 25-26, 2022

The Stanford Drug Discovery Symposium (SDDS) is a highly regarded symposium that unites leaders from major pharmaceutical companies, federal and foundation policy makers, and top scientists making groundbreaking advances in drug discovery. The symposium leverages the collective experience and expertise of our speakers in drug discovery to promote vital discussions and sharing of ideas across academia, government, and industry.

The 2022 Stanford Drug Discovery Symposium will be held **April 25-26, 2022**, and will be a virtual experience. We have a line-up of highly esteemed speakers and anticipate a vibrant mix of participants. This annual meeting provides an invaluable forum for the open exchange of ideas to develop and improve innovative approaches to drug development, basic or translational research. [Register for free.](#)

This symposium provides a valuable and important platform for inspiring interdisciplinary exchange at the forefront of drug research and will support a fantastic networking experience. It provides a great resource for researchers, pharmaceutical companies, investment groups, and those in the wider biomedical community interested in discovering new drugs and improving patient care. SDDS 2022 provides a unique and highly valuable forum for discussions that will help develop and improve innovative approaches to drug development and basic or translational scientific research.

Free registration for this virtual event at tinyurl.com/SDDS2022

See page 3 for details



Lifetime Achievement Awardee

Katalin Karikó, PhD

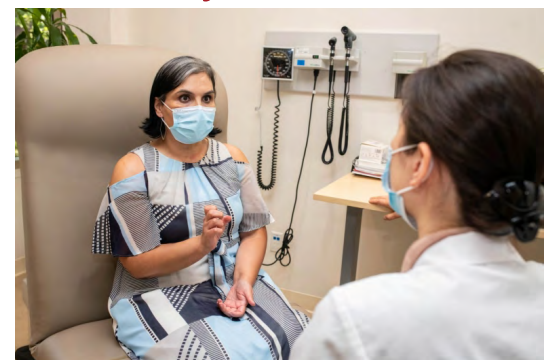
Senior Vice President, BioNTech

Stanford Medicine to Enroll 900 in Long-COVID Study *By Bruce Goldman*

Data suggest that between 10% and 30% of those who have had an acute SARS-CoV-2 infection will experience the persistent pattern of symptoms known as long COVID. Researchers at Stanford Medicine are projected to receive close to \$15 million over a four-year period from the National Institutes of Health to study long-lasting patterns of COVID-19-related symptoms, commonly known as long COVID.

The Stanford investigators constitute one of more than 30 research teams participating in the NIH-sponsored RECOVER (Researching COVID to Enhance Recovery) Initiative. RECOVER was established to identify risk factors for long COVID, develop strategies for preventing and treating it, and learn why some people experience faster and fuller recoveries than others.

Principal investigators of the Stanford Medicine site are Upinder Singh, MD; PJ Utz, MD, PhD; Catherine Blish, MD, PhD; and Yvonne Maldonado, MD.



Rosie Flores, who suffered from symptoms of long COVID, meets with physician Linda Geng at Stanford Medicine's Post-Acute COVID-19 Syndrome Clinic in June. Now, Stanford researchers are expected to receive nearly \$15 million to study long COVID. Image credit: Steve Fisch

Joseph C. Wu Selected as American Heart Association President-Elect

The American Heart Association (AHA) national board of directors has selected Joseph C. Wu, MD, PhD, as the AHA President-Elect, effective July 2022. Dr. Wu is a trailblazing physician researcher, Director of the Cardiovascular Institute and Simon H. Stertzler, MD, Professor and Professor of Radiology at Stanford University. During his long tenure of AHA volunteer service, Dr. Wu has been the chairperson of the AHA Research Committee and the Council on Basic Cardiovascular Sciences (BCVS), as well as a member of the national board. He is also actively involved in community programs in the Bay Area. Dr. Wu's impact on the AHA is immeasurable, with a focus on supporting young, mid-career, and senior investigators and expanding international collaborations. Story continued on page 4.



American Heart Association



Frontiers in Cardiovascular Sciences Seminar Series

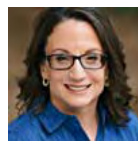
Join us from 1:00 - 2:00 pm PST Tuesday afternoons to hear the latest in cardiovascular and pulmonary research.

Zoom links and additional details available at <https://med.stanford.edu/cvi/mission/frontiers-in-cv-science.html>



April 5, 2022

ELIZABETH MCNALLY, MD, PHD
Director, Center for Genetic Medicine
Elizabeth J. Ward Professor of Genetic Medicine
Professor of Medicine (Cardiology) and Biochemistry
and Molecular Genetics
Northwestern University Feinberg School of Medicine



May 17, 2022

STEPHANIE W. WATTS, PHD, FAHA
Professor
Pharmacology and Toxicology
Michigan State University



April 12, 2022

CALUM MACRAE, MD, PHD
Vice Chair for Scientific Innovation, Department of
Medicine, Brigham and Women's Hospital
Professor
Harvard Medical School



May 24, 2022

WILLIAM SESSA, PHD
Alfred Gilman Professor Emeritus of Pharmacology; Vice
Chairman, Pharmacology; Director, Vascular Biology &
Therapeutics Program
Yale School of Medicine



April 19, 2022

PRADEEP NATARAJAN, MD, MMSC
Director of Preventive Cardiology & Fireman Endowed
Chair in Vascular Medicine
Massachusetts General Hospital,
Associate Professor of Medicine
Harvard Medical School



May 31, 2022

GIOVANNI FERRARI, PHD
Associate Professor
Departments of Surgery and Biomedical Engineering
Director Cardiothoracic Surgery Research & Columbia
Biobank for Translational Science (CBTS)
Columbia University



May 3, 2022

JUN-ICHI ABE, MD, PHD, FAHA
Professor, Department of Cardiology,
Division of Internal Medicine
The University of Texas MD Anderson Cancer Center



June 7, 2022

CARMEN (KIKA) SUCHAROV, PHD
Professor
Director, Pediatric Cardiovascular Research Laboratory
University of Colorado Denver, Anschutz Medical
Campus



May 10, 2022

MASUKO USHIO-FUKAI, PHD, FAHA
Professor, Director of the Redox Signaling Program
Vascular Biology Center
Department of Medicine, Cardiology
Medical College of Georgia at Augusta University



June 14, 2022

LYNNE W. STEVENSON, MD
Professor of Medicine
Fellowship Director, Heart Failure
Vanderbilt University Medical Center

Donate to the Stanford Cardiovascular Institute

The Institute currently consists of over 240 faculty members representing physicians, surgeons, engineers, basic science and clinical researchers. The Institute's mission 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: **Joseph C. Wu, MD, PhD**, Director of the Stanford Cardiovascular Institute, at joewu@stanford.edu or **Cathy Hutton**, Senior Associate Director, Medical Center Development at cathy.hutton@stanford.edu.

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



Joseph C. Wu,
MD, PhD



Cathy Hutton,
MBA



Lifetime Achievement Awardee
Katalin Karikó, PhD
Senior Vice President, BioNTech



Karen Akinsanya, PhD
Chief Biomedical Scientist, Head of Discovery R&D, Schrödinger



Steven Artandi, MD, PhD
Laurie Kraus Lacob Director of SCI, Jerome & Daisy Low Gilbert Professor, Stanford University



Claude Bertrand, PhD
Executive Vice President R&D, CSO, Servier



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



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Board of Directors at The Walt Disney Co, Procter & Gamble, Marqeta, and Pragma Platform



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Managing Director, AbbVie Ventures



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Partner, Morrison & Foerster, LLP



Jacqueline Corrigan-Curay, JD, MD
Principal Deputy Center Director, FDA, CDER



Lisa M. Coussens, PhD
Associate Director for Basic Research, Knight Cancer Institute, OHSU; President, AACR



Gregory Curfman, PhD
Deputy Editor, JAMA



Ray Deshaies, PhD
Senior Vice President, Global Research, Amgen



Myrtle Davis, DVM, PhD
President, Bristol Myers Squibb



Carlos Garner, PhD
Vice President, Global Regulatory Affairs, Eli Lilly and Company



Kathleen Giacomini, PhD
Prof. of Bioengineering & Co-Director UCSF-Stanford Center of Excellence in Regulatory Sciences & Innovation, UCSF



Gary Gibbons, MD
Director, NHLBI



Christopher Gibson, PhD
Co-Founder, CEO, Recursion



David E. Goel
Founder & Managing General Partner, Matrix Capital Management



Aida Habtezion, MD
Chief Medical Officer and Head of Worldwide Medical & Safety, Pfizer



Sandra Horning, MD
Board of Directors, Moderna, Gilead, Olema Oncology, EQRx



Karin Immergluck, PhD
Executive Director Stanford Office of Technology Licensing



Joe Jimenez, MBA
Co-Founder and Managing Director, Aditum Bio; Former CEO, Novartis



Peter S. Kim, PhD
Virginia and D.K. Ludwig Professor of Biochemistry, Stanford University



Daphne Koller, PhD
Founder & CEO, insitro



Dean Y. Li, MD, PhD
Executive Vice President and President of Merck Research Laboratories



Jonathan MacQuitty, PhD
Sector Head for Life Sciences, Lightspeed Ventures



Mathai Mammen, MD, PhD
Global Head, R&D, Janssen Pharmaceutical Companies of Johnson & Johnson



Peter Marks, MD, PhD
Director, Center for Biologics Evaluation and Research (CBER), FDA



Michelle McMurry-Heath, MD, PhD
President & CEO, Biotechnology Innovation Organization



Maria T. Millan, MD
President and CEO, CIRM



Lloyd Minor, MD
Carl and Elizabeth Naumann Professorship for the Dean, Stanford School of Medicine



Vern Norviel, JD
Partner, Patents and Innovations, Wilson Sonsini



Merdad Parsey, MD, PhD
CMO, Gilead



Andrew Plump, MD, PhD
President, R&D of Takeda Pharmaceutical Company Limited



Aviv Regev, PhD
Executive Vice President, Research and Early Development, Genentech



Madhuri Roy, PhD, JD
Partner, Cooley



Alfred Sandrock, MD, PhD
Former Head of R&D, Biogen



Randy Schekman, PhD
Professor, UC Berkeley; 2013 Nobel Laureate



Marc Tessier-Lavigne, PhD
President and Bing Presidential Professor, Stanford University



James Zou, PhD
Asst. Prof. of Biomedical Data Sci. & By Courtesy, of Computer Sci. & of Electrical Engineering, Stanford University

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MEDIA SPONSORS Biocom California • California Life Science Association • Keystone Symposia

CVI Director Dr. Joseph C. Wu Selected as American Heart Association President-Elect

Story continued from page 1. The American Heart Association (AHA) is a non-profit organization dedicated to cardiovascular health—and the relentless pursuit of world of longer, healthier lives— since its inception in 1924. The AHA’s mission is to promote cardiovascular medical research, educate the public on cardiovascular disease prevention, and to foster and establish the highest standards in cardiac care.

The new AHA President-Elect, Dr. Joseph C. Wu, pursues research focused on the biological mechanisms of patient-specific and disease-specific induced pluripotent stem cells to understand mechanisms of cardiovascular disease, accelerate drug discovery, develop “clinical trial in a dish” technology, and implement precision medicine for cardiovascular patients. Dr. Wu ranked among the top 1% of highly cited researchers in Web of Science in 2018, 2019, 2020, and 2021. He also received the AHA Established Investigator Award, AHA Merit Award, and AHA Distinguished Scientist Award.



Joseph C. Wu, MD, PhD

He has received NIH Director’s New Innovator Award, NIH Roadmap Transformative Award, Presidential Early Career Award for Scientists and Engineers (PECASE) given out by President Obama at the White House, AHA Distinguished Scientist Award, AHA Merit Award, and Burroughs Wellcome Foundation Innovation in Regulatory Science Award. Dr. Wu serves on the FDA Cellular, Tissue, and Gene Therapies Advisory Committee. He is also an elected member of Association of University Cardiologists (AUC), American Institute for Medical and Biological Engineering (AIMBE), American Association for the Advancement of Science (AAAS), American Association of Physicians (AAP), and National Academy of Medicine (NAM).

Long-term Success: Stanford’s Experience in Heart Transplantation Over Five Decades

By Roxanna Van Norman

A study led by researchers at the Stanford Department of Cardiothoracic Surgery found long-term survival after heart transplantation has improved over the last 50 years at the longest-running heart transplant center in the United States.

“Stanford has a decades-long history of pioneering, leading, and advancing the field of cardiac transplantation,” said Joseph Woo, MD, the Norman E. Shumway Professor and Chair of the Department of Cardiothoracic Surgery and senior author on the paper. “We wanted to study Stanford’s extensive data in heart transplantation since the first adult heart transplant in the United States performed onsite in 1968 and identify factors contributing to patient outcomes.”



Joseph Woo, MD

Researchers on the study looked at more than 2,600 records, specifically heart transplants performed between 1968 and 2020. Findings from the study showed long-term survival after heart transplantation improved over time, despite increased recipient and donor age, worsening comorbidities, increased technical complexity, and prolonged total allograft ischemia time. The paper was published in [European Heart Journal](#).



CVI Recognition Award Winners 2022



Vinicio de Jesus Perez, MD

Associate Professor of Medicine (Pulmonary and Critical Care Medicine)

Recognized for his efforts in mentorship, participation and directorship of diversity training grant programs, and in planning new initiatives to strengthen the CVI community.



Ronglih Liao, PhD

Professor of Medicine (Cardiovascular Medicine)

Recognized for her efforts towards promoting the career advancement of early career scientists, especially female and underrepresented minority trainees and junior faculty.

MD STUDENT SUMMER RESEARCH PROGRAM in Cardiovascular and Pulmonary Science and Medicine

Deadline:
March 31, 2022

For more info and to apply:
tinyurl.com/k46avy6n

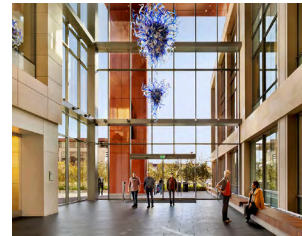
Email:
cvi_outreach@stanford.edu

Paid 10-week program
begins in Summer 2022

Diverse projects available in
population-based, clinical,
translational, and basic research.

Career development and
enrichment activities

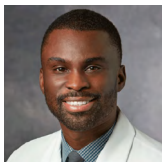
Execute an independent research
project in the lab of a Stanford
Medicine faculty member!



How to Become a Heart Surgeon

By Adrienne Mueller, PhD

Program directors share the qualities of successful cardiothoracic residency program applicants.



Oluwatomisin
Obafemi, MD



Anson Lee, MD

Cardiothoracic surgery residency programs are highly competitive. Unfortunately, the qualities you need to show to be offered a cardiothoracic residency placement are often hard to discern.

To address this gap of knowledge, a group of Stanford cardiothoracic physicians and scientists surveyed US cardiothoracic surgery residency program directors about the characteristics of successful candidates. Their study, by first author Oluwatomisin Obafemi, MD, and senior author Anson Lee, MD, was recently published in [Annals of Thoracic Surgery](#).

Almost unanimously, the programs considered 'interview performance' very important. 'Evidence of professionalism' and 'letters of recommendation' were also extremely important qualities in program directors' consideration of candidates.

More studies and discussions about the evaluation criteria for residency programs will streamline the application process, provide more transparency, and help reduce bias.



Interview Performance



Evidence of Professionalism



Letters of Recommendation

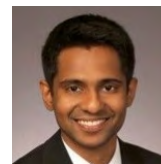
Three of the top qualities cardiothoracic residency program directors consider when evaluating candidates.

Personalizing Cardiovascular Disease Prevention

By Amanda Chase, PhD

The Rodriguez Lab recently developed an electronic health record based machine learning approach to creating personalized statin recommendations for preventing cardiovascular disease.

Statin use has become widely used for primary prevention of cardiovascular disease (CVD) by lowering cholesterol, and are considered to be the cornerstone of cardiovascular disease prevention. Despite the advantages of statins, adherence to doctor prescribed statins is at only 50% after one year, and down to only 30% after two years. The question of why adherence is so low is important in patient and doctor decision making when determining best treatment options. Using historical, real-world data may explain prior treatment responses and ultimately improve patient adherence.



Ashish Sarraju,
MD



Fatima
Rodriguez, MD

Co-first authors Ashish Sarraju, MD, and Andrew Ward, PhD, and senior author Fatima Rodriguez, MD, developed an electronic health record based machine learning approach to creating personalized statin recommendations for preventing CVD. Their approach was recently published in [Scientific Reports](#). They identified intermediate risk patients who were recommended a moderate- or low-intensity statin, instead of a high-intensity statin, based on outcomes in similar patients. The use of machine learning to help identify the most appropriate statin to help lower cholesterol for patients may serve as a way to optimize shared decision-making by allowing a more personalized discussion with each individual patient.

Chance to win a PRIZE!

Explore the Stanford Cardiovascular Institute's website to learn more about its history, opportunities, and initiatives — and have the chance to win a prize!

[CVI Virtual Tour](#)

Finding a Therapy for Ischemic Cardiomyopathy

By Amanda Chase, PhD

Coronary heart disease, a major cause of morbidity and mortality, occurs when the arteries cannot deliver enough oxygen-rich blood to the heart. This often results in a “heart attack” or myocardial infarction. Damage to the heart due to infarction, in turn, results in ischemic cardiomyopathy and heart failure, when the ability of the heart to pump blood is decreased due to a weakened left ventricle (LV). The LV has the ability to respond in disease by changing its shape and structure, a process called “remodeling.” Following a heart attack, LV remodeling occurs due to increased stress on the damaged ventricular wall. In the long-term remodeling leads to deterioration of cardiac function, ultimately leading to heart failure. Heart failure has a 50% survival rate 5 years after becoming apparent, making a critical need for more effective therapies to prevent remodeling.



Michael Kapiloff, MD, PhD

Remodeling of the heart is largely due to altered function of cardiomyocytes (heart muscle cells). Cardiomyocyte function is regulated by an intricate network of signaling pathways. Recent work published in [Gene Therapy](#) with senior author Michael Kapiloff, MD, PhD, sought to use knowledge of these signaling pathways to prevent remodeling. They had previously shown that a complex of multiple proteins, organized by a protein called mAKAP β , regulates cardiac remodeling by influencing gene expression. Therefore, mAKAP β was an intriguing target for preventing remodeling.

Adeno-associated virus (AAV) gene therapy uses vectors that can effectively and accurately deliver specific information. This research team created an AAV vector that could deliver information to decrease expression of mAKAP β specifically in cardiomyocytes. They showed that this specific vector downregulated mAKAP β expression in both the mouse heart and in human induced cardiomyocytes. This prevented cardiac remodeling, retained cardiac structure and function, and prevented heart failure in mouse models of ischemic cardiomyopathy. These findings provide proof-of-concept for a new potential gene therapy for ischemic cardiomyopathy and supports the development of a translational pipeline for treatment of heart failure.

Stanford Bioengineers Aim to Build a Heart One Layer at a Time

By David Levin

Using advanced 3D printing techniques, Mark Skylar-Scott and his team want to transform a paste made of living cells into hearts and other organs.

For an engineer, few human organs are more enticing than the human heart. Its chambers pump in perfect unison; its materials are pliable, yet contract on demand; its shape and motion are perfectly tuned to squeeze fluid



Stanford scientists work to manufacture human tissues at therapeutic scale, with a focus on the heart. Video by Kurt Hickman

efficiently through the entire body. It's a structural wonder — yet when something goes wrong within that structure, its inherent complexity makes it a real challenge to fix. As a result, thousands of young patients with inborn heart disorders must cope with their disease for a lifetime.

Mark Skylar-Scott, assistant professor of bioengineering, is working on new ways to approach congenital heart disease by building engineered heart tissue in the lab. Using advanced 3D printing techniques, they're manufacturing thick tissues one layer at a time, placing the exact type of cells needed at the right spots like a tower rising from a grid of carefully placed bricks. This construction method works well for replicating complex tissues like the heart, where 3D form matters greatly for its function.



Mark Skylar-Scott, PhD



THE WALL CENTER
PULMONARY VASCULAR DISEASE
@STANFORD

Pulmonary Hypertension Grand Rounds

12-1pm - 1st Friday of the Month

CME-accredited series featuring case presentations and lectures from the Stanford community and other medical centers.

5 Questions: Ami Bhatt on Gut Microbiomes in Understudied Populations By Bruce Goldman

Why it's important to better understand the microbiome of people transitioning from traditional to Westernized lifestyles.



Ami Bhatt, MD

Ami Bhatt, MD, an associate professor of hematology and of genetics, is a strong advocate of empowering and crediting scientists from diverse groups and is a proponent of conducting research on diverse populations. In a study published in [Nature Communications](#), her group teamed up with South African collaborators to analyze microbiomes in the guts of 169 women from two different South African locales.

Stanford Medicine asked Bhatt about what motivated her to conduct the study, and about its findings and implications.



Women line up to buy groceries in South Africa. Ami Bhatt studied the gut microbiomes of women in a rural area in the country's east, to better understand changes in intestinal microbiota when populations transition from traditional to Westernized lifestyles. [Sunshine Seeds/Shutterstock.com](#)

'Military police' cells arise to arrest infection-induced autoimmunity By Bruce Goldman

A new study has identified a way that the immune system shoots down its own cells when their anti-viral activity threatens to become friendly fire. The finding could pave the way to new treatments for autoimmune diseases.



Jing Li, PhD

This "military police" squad, the study indicates, prevents overzealous confreres from picking fights with our healthy tissues and instigating autoimmunity. These immune cells are known as KIR+CD8 cells—or, informally, suppressor-CD8 cells—and they may point to novel therapies for autoimmune diseases.



Mark Davis, PhD

"Our translational goal is to develop drugs or procedures that make these suppressor-CD8 cells more active or prolific," said Mark Davis, PhD, the Burt and Marion Avery Family Professor and a Howard Hughes Medical Institute investigator. "It also throws light on an important aspect of autoimmunity that we had no clear understanding of before."

Because these cells appear to be important in many, if not most, autoimmune diseases, the finding could have a profound impact, he said. A paper describing the study was published online March 8 in [Science](#). The lead author is Jing Li, PhD, a postdoctoral scholar in Davis' group.

"Every time you get infected, we think your immune system relaxes its normal controls and unleashes all of its pathogen-recognizing cells," Davis said. "In situations like this, you need an all-hands-on-deck response even if it means some of the recruits are thugs."

Inaugural

VICTOR J. DZAU

DISTINGUISHED LECTURE IN CARDIOVASCULAR MEDICINE

On December 8th, 2021, Eugene Braunwald, MD, presented the inaugural Victor J. Dzau Distinguished Lecture in Cardiovascular Medicine. The annual lecture series honors the extensive contributions of Dr. Victor Dzau to the field of cardiovascular medicine.

[Watch a recording of the seminar.](#)



Victor J. Dzau, MD, is an internationally acclaimed leader and physician scientist who has performed seminal research in cardiovascular medicine and genetics. His work laid the foundation for the development of the class of lifesaving drugs used globally to treat hypertension and heart failure. Dr. Dzau is President of the US National Academy of Medicine (NAM), Vice Chair of the US National Research Council, and Chancellor Emeritus and James B. Duke Distinguished Professor of Medicine at Duke University.



**Nominations Open for 2022
Distinguished Lecturer**

[Find Out More!](#)



Interested in a write-up of your publication?

Contact: cvi_communications@stanford.edu

Or visit:

<https://med.stanford.edu/cvi/translational-research/memberpubs.html>



Detecting Risk of Peripheral Arterial Disease By Adrienne Mueller, PhD

Peripheral artery disease (PAD) occurs when arteries in your arms and legs narrow to the point that they restrict blood flow. Symptoms can include numbness, weakness, and pain in the affected limbs; and severe cases may need to be treated with surgery. PAD afflicts over 200 million individuals world-wide, and generates an estimated annual health care cost of approximately \$21 billion in the US alone.



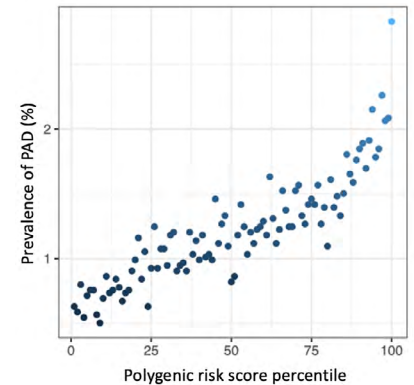
Fudi Wang, PhD



Elsie Ross, MD

PAD is a complex disorder with many contributing risk factors, including age, diabetes, smoking, and genetics. Recently, a team of Stanford researchers generated a polygenic risk score for PAD. Their findings, led by first author Fudi Wang, PhD, and senior author Elsie Ross, MD, were recently published in *Vascular Medicine*. They showed that

individuals with the top 10% of highest polygenic risk scores had a 3-fold higher likelihood of having PAD than the lowest-scoring 10%. Use of the polygenic risk score significantly improved the ability to detect individuals' risk of having PAD, and it will be a valuable tool to improve early identification of this prevalent disease.



Increasing polygenic risk scores tracked with increased prevalence of peripheral artery disease (PAD)

Different Leaflets Have Different Effects in Calcific Aortic Stenosis

By Amanda Chase, PhD

Aortic stenosis (AS) occurs when the aortic valve, which is normally composed of three leaflets, stops opening fully — resulting in reduced blood flow. Patients with this condition can develop heart failure because of the extra work that the heart must perform to pump blood through a narrowed valve. The most common cause of AS in the Western world is increased deposition of calcium on the aortic valve (calcific AS).



Ian Chen, MD, PhD

In a recent study published in *Circulation: Cardiovascular Imaging*, researchers looked at CT scans from patients with calcific AS to see if there were any differences in calcium build-up among different leaflets of the aortic valve. The team was led by first authors Ian Chen, MD, PhD, and Vijay Vedula, PhD, and senior authors Joseph Wu, MD, PhD, and Alison Marsden, PhD. They looked at CT scans for 200 patients undergoing evaluation for valve replacement because of calcific AS, as well as 20 control patients. By combining image analysis and computer simulation techniques, they showed that patients with calcific AS had significant differences among three leaflets in calcification, leaflet thickening, and consequentially functional contribution to AS.



Healthy leaflet (left) versus diseased leaflet (right).

CVI Travel Awards

Deadline: May 1, 2022

- Supports early career researchers travel to cardiovascular research conferences
- \$750 of travel expenses
- Additional “Outreach Travel Award” for candidates from underrepresented groups



Find out more!





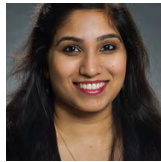
Curbing Cancer: Don't Cleave That OPN

By Adrienne Mueller, PhD

A recent study shows how cleavage of the protein osteopontin (OPN) contributes to cancer progression.

Osteopontin (OPN) is one of the top 5% most highly expressed genes in cancer genetic datasets and it promotes tumor growth and metastasis in several cancers, including lung cancer. One thing we know about OPN is that it can be cleaved into fragments—each of which can have its own influence on cellular activities. Recently-developed technology allows researchers to differentiate between cleaved and uncleaved OPN.

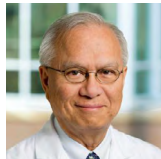
A recent study published in the *Journal of Thrombosis and Haemostasis*, led by first author Sameera Peraramelli, PhD and senior authors John Morser, PhD and Lawrence L.K. Leung, MD, showed that thrombin-cleaved OPN fragments initiate OPN's tumor-promoting activity. This is the first report of a role for the thrombin-cleavage of OPN, identifying its contribution to cancer progression.



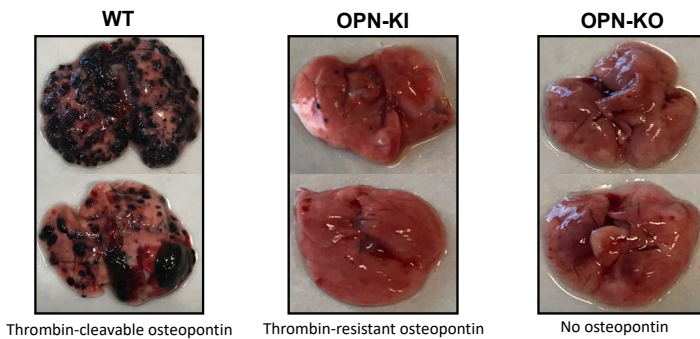
Sameera Peraramelli, PhD



John Morser, PhD



Lawrence L.K. Leung, MD

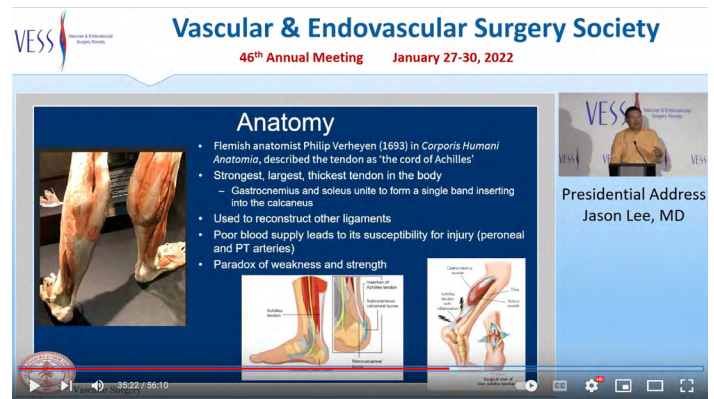


Numerous tumor nodules in tissue of animals with normal, thrombin-cleavable, osteopontin (left). Fewer nodules in tissue from mice that have either thrombin cleavage-resistant OPN (middle), or no OPN at all (right).

Dr. Jason T. Lee Leads Vascular Surgery Research and Training

Jason T. Lee, MD, Professor of Surgery and Chief of Vascular Surgery, completed his term as 2021-2022 President of the Vascular and Endovascular Surgery Society, vascular surgery's national society devoted to early career faculty surgeons. During his tenure he developed the VESS Research Consortium (VRC) hoping to create a national database infrastructure for clinical outcomes related to complex interventions, and aortic dissection therapies was chosen as the first clinical entity to study. They safely and successfully held their first in person meeting in 2 years in Aspen, CO, in January 2022, and Dr. Lee's [presidential address](#) focused on utilizing emotional stamina to overcome one's own achilles heels and vulnerabilities in developing a clinical, research, and leadership career.

Upon completing this national role, Dr. Lee was next elected and now begins in April 2022 his upcoming term as President of the Association of Program Directors in Vascular Surgery, the organization responsible for trainees and vascular surgery training programs across the country. Issues looming in the upcoming years include residency and fellowship training in the post-pandemic years, equity and fairness in recruitment of future vascular surgery leaders, and improved evaluation and mentoring opportunities for faculty surgical educators.



MAVENS 2022

The Mentoring to AdVance WoMEN in Science (MAVENS) mission is to inspire, empower, and support women in academic medicine throughout their career progression in order to create an integrated community of scientists.

Two outstanding women scientists were selected from a pool of exceptional candidates to be CVI's 2022 MAVENS cohort.



ANNA HNATIUK, MD, PHD
Postdoc
Cardiovascular Institute



CAROLINE YEON-KYEONG NOH, MD
Instructor
Pediatrics - Neonatal and Developmental Medicine

Narratives in Cardiology: Diversity & Inclusion Via Allyship & Leadership with Dr. Bob Harrington

CardioNerds share a discussion with Dr. Bob Harrington (Professor of Medicine at Stanford University) about diversity and inclusion in the field of cardiology. This episode discusses Dr. Harrington's allyship, including how he used his position as the president of the American Heart Association to advocate against all-male panels, or "manels." The podcast episode covers the background and motivations behind his evidence-based efforts to make Cardiology a more inclusive field.



What do Cancer and Heart Disease Have in Common?

Nicholas J. Leeper | TEDxVienna

Nicholas J. Leeper, Professor of Surgery at Stanford University, recently presented a TEDx Talk in Vienna reviewing the evidence cancer and heart disease may arise via a collection of shared and overlapping pathways - and how the medical field might simultaneously target the two greatest causes of mortality.

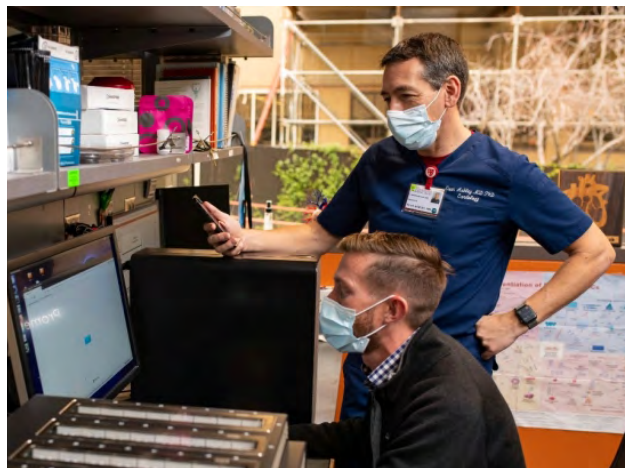


Fastest DNA Sequencing Technique Helps Undiagnosed Patients Find Answers in Mere Hours By Hanae Armitage

A research effort led by Stanford scientists set the first Guinness World Record for the fastest DNA sequencing technique, which was used to sequence a human genome in just 5 hours and 2 minutes.

Genome sequencing is vital for diagnosing patients with diseases rooted in their DNA: Once doctors know the specific genetic mutation, they can tailor treatments accordingly. Now, a mega-sequencing approach devised by Professor Euan Ashley and his colleagues has redefined "rapid" for genetic diagnostics: Their fastest diagnosis was made in just over seven hours. Fast diagnoses mean patients may spend less time in critical care units, require fewer tests, recover more quickly and spend less on care. Notably, the faster sequencing does not sacrifice accuracy.

A paper describing the researchers' work published in [The New England Journal of Medicine](#). Postdoctoral scholar John Gorzynski, DVM, PhD, is the lead author.



Euan Ashley and John Gorzynski were part of a team that devised a method for genome sequencing so speedy it produced results for one study participant in just over five hours. Image credit: Steve Fisch



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PH AT STANFORD PODCAST

RESEARCH • EDUCATION • TREATMENT • PATIENT CARE

A new podcast series from the [Vera Moulton Wall Center for Pulmonary Vascular Disease at Stanford](#), with the goal to eradicate pulmonary vascular disease by discovering fundamental causes, developing innovative therapies, disseminating crucial knowledge, and delivering transformative care.

Listen >



Diversity in Genetic Research Key to Predicting Risk of High Cholesterol By Tracie White

A Stanford study shows that using genomes from a diverse pool of people improves the ability to predict an individual's risk of having high cholesterol.

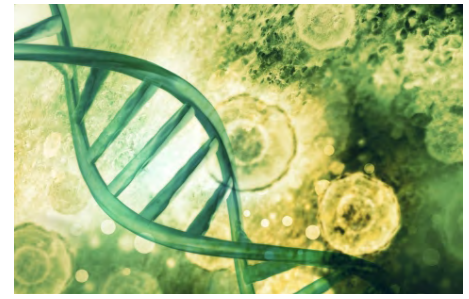
Researchers have noted that a “polygenic risk score,” a DNA-based tool that enhances our ability to predict the risk of common diseases, works well only for people of northern European ancestry, primarily because that’s where much of the data has been collected.

“The biggest weakness of using these risk scores in the clinic is that they have the potential to exacerbate health inequities because they perform much better in whites and perform the worst in African Americans,” said Themistocles “Tim” Assimes, MD, PhD, an associate professor of cardiovascular medicine.

Assimes is a co-senior author of the study with Cristen Willer, PhD, a professor at the University of Michigan. They and a team of more than 600 co-authors published their findings in *Nature*. “We find that diversifying the populations under study, rather than simply increasing sample size, is the most effective approach to creating polygenic risk scores that work equally well in predicting high cholesterol in all populations,” said Assimes. “We hope that the same is observed for other health traits, but this remains to be seen.”



Tim Assimes, MD, PhD



Because much of DNA data comes from people of northern European ancestry, they benefit more than other groups from DNA-based risk assessments. Image credit: crystal light/Shutterstock.com



Treating Atrial Fibrillation: Over 1 Million Cryoballoon Ablation Procedures



Paul Wang, MD

Early in his career, Paul Wang, MD, Professor of Medicine, noticed that surgeons treated heart rhythm problems by performing open heart surgery and freezing the problematic piece of heart tissue. He reasoned that a method that does not require open heart surgery could be developed.

In collaboration with his mentor, Peter Friedman, and collaborators at MIT, Dr. Wang made the first design of a cryoablation catheter — small enough to be inserted through a vein to the heart and obviating the need for open heart surgery. They patented the design. This resulted in creation of a new company, CryoCath, to create these new cryoablation catheters.

Cryoablation catheters treat atrial fibrillation, the most common heart rhythm problem, occurring in 30 million patients worldwide. Now, 37 years later, over 1 million patients around the world have been treated by this innovation.



Stanford Surgeon Saves Guardsman's Life with Complex Heart Procedure By Tracie White

Nathan Foss was running trails with a friend on Vandenberg Space Force Base near Lompoc, California, when he suddenly felt lightheaded and sluggish, with pressure in his chest. He thought he might faint.

That day marked the beginning of a two-year ordeal for Foss, who commands a space operations squadron in the California Air National Guard. It culminated in open heart surgery at Stanford Health Care on April 7, 2021, when surgeons replaced his damaged aortic valve with his own pulmonary valve. The procedure not only saved his life but kept him eligible for active duty in the military.

Stanford has a reputation for excelling at complex heart procedures and often receives referrals such as these, said Foss' surgeon, Joseph Woo, MD, professor and chair of cardiothoracic surgery. It's a big part of the reason U.S. News & World Report has ranked Stanford Health Care among the top 10 best cardiology and heart surgery programs for three years running, Woo said. This year, Stanford Health Care ranked No. 8.



Joseph Woo, MD



CVI Proposal Development Resource

Questions about how to apply for a grant at Stanford?
Steps for a fellowship, career development award, research, or collaborative grant?
Templates to guide your proposal development?

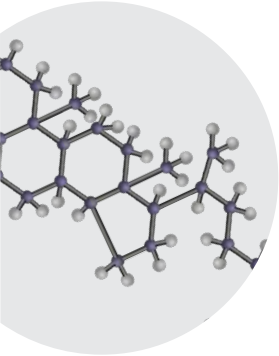
Visit [our new website](#), or contact: cvi_grants@stanford.edu, to find answers to those questions and more.



Cardiovascular Clinical Trials at Stanford

Cardiovascular research at Stanford University is diverse and spans over 240 clinical research studies in the division of Cardiovascular Medicine alone. Stanford faculty physicians and scientists, many of whom are recognized internationally for their contributions to advancing science and knowledge of cardiac disease, conduct research aimed to treat patients suffering from a wide variety of cardiovascular issues. Cardiovascular researchers have made significant progress towards the understanding of coronary and vascular disease, endothelial function, cardiac mechanics and heart failure. There are opportunities for patients to participate in studies that may change cardiovascular care for millions of patients.

[Cardiovascular Medicine's Clinical Research Office](#) and the [Cardiovascular Institute's Clinical Trials Core](#) support faculty with teams of talented Clinical Research Coordinators to move the trials and research forward in the most compliant and efficient way for the benefit of patients, and to ensure research goals are met even in the midst of COVID-19 pandemic.



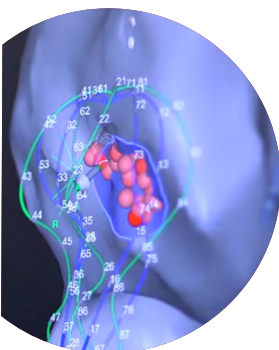
Introduction to Dr. Abha Khandelwal's Work in Cardiovascular Disease and Prevention: Cardiovascular disease is the number one killer of both men and women. [Dr. Abha Khandelwal](#) studies a cholesterol known as lipoprotein a (Lp(a)), which has a known correlation with cardiovascular disease and is elevated in 25% of the population; especially in South Asians and African Americans. She was the site PI for phase II studies looking at safety and tolerability of Pelacarsen, an anti-sense oligonucleotide targeting mRNA transcribed from the Lp(a) gene. This led to the landmark 2020 NEJM paper describing a 35-70% Lp(a) reduction. She was also the site PI for prevalence and intervention phase III trials for Novartis, looking at outcomes in patients randomized to Pelacarsen or placebo. If successful, this will be the first therapeutic for elevated lipoprotein with an outcome benefit. In addition to lipid interventions, she leads a multisite intervention trial on improving diabetes care in patients with cardiovascular disease (COORDINATE DM).



Introduction to Dr. William Fearon's Late-breaking FAME-3 Clinical Trial: On November 4th, 2021 [Dr. William Fearon](#) presented an investigator-initiated clinical trial coordinated by Stanford in which 1,500 patients with three-vessel CAD warranting revascularization were randomly assigned to fractional flow reserve-guided PCI with a current generation stent or CABG. The primary endpoint of the one-year rate of death, myocardial infarction, stroke, and repeat revascularization (MACCE) was 10.6% for PCI and 6.9% for CABG (hazard ratio [HR] 1.5, 95% CI 1.1-2.2, p=0.35 for non-inferiority). The one-year rate of death, myocardial infarction, and stroke were not significantly different between the two strategies. The improved ischemic outcomes of CABG was balanced with safety endpoints that were all lower with PCI compared to CABG. The study is unique because it was coordinated and run by Stanford with research grants to support it. It will likely change practice and be reflected in new guidelines.



Introduction to Dr. Alex Sandhu's Patient-reported Outcome Research: Heart failure negatively affects the quality of life for millions of patients with heart failure. The NIH-funded Patient-Reported Outcomes in Heart Failure (PRO-HF) randomized trial, led by [Dr. Alexander Sandhu](#), will evaluate the impact of routinely collecting patient-reported health status during clinic visits among patients seen in the Stanford Heart Failure Clinic. All patients with clinic visits in Stanford heart failure will be contacted for potential enrollment. Consented patients will be randomized to routine Kansas City Cardiomyopathy Questionnaire-12 (KCCQ-12) assessment in clinic versus usual care. The study will evaluate the effect of routine KCCQ-12 assessment on patient experience, clinician interpretation of quality of life, and patient quality of life at 1 year. The results of this study will provide insight into the integration of patient-reported outcomes in heart failure care.



Introduction to the Stanford Arrhythmia Service: [Dr. Linda K. Ottoboni](#) founded the Atrial Fibrillation Prevention and Lifestyle Management Program to help individuals reduce their cardiovascular risk. Research has shown that reducing cardiovascular risk improves atrial fibrillation outcomes. Dr. Ottoboni is also testing strategies to help patients manage the unpredictability of arrhythmias. In collaboration with [Dr. Paul Wang](#), [Dr. Sanjiv Narayan](#), [Dr. Mintu Turakhia](#), and the other members of the Stanford Arrhythmia Service, Dr. Ottoboni is pursuing several research projects including: evaluating symptom management strategies that may improve patient quality of life; a multi-center clinical trial on whether bariatric surgeries improve patient outcomes; and an assessment of whether a digital health platform targeting a patient's psychometric profile can help modify behaviors to reduce cardiovascular risk factors and thereby improve access for underrepresented populations.

Open Postdoc Positions



Kevin Alexander Lab [Find out more!](#)

The laboratory focuses on basic and translational research studying the pathogenesis of cardiac amyloidosis, particularly transthyretin cardiac amyloidosis. We perform molecular profiling studies using biospecimens from clinical cohorts of cardiac amyloid patients. These data guide further mechanistic studies using in vitro and in vivo models of amyloidosis. Qualified candidates will have a PhD with experience in cell and molecular biology, physiology, and/or imaging.



Detlef Obal Lab [Find out more!](#)

Seeking a postdoc interested in working on human-induced pluripotent stem cells to investigate the role of G-protein-coupled receptors in cardiac and endothelial cell function. The Obal lab utilizes stem cells from patients to investigate the function of opioid receptors, the molecular movements and heterodimerization of G protein-coupled receptors, and the impact of chronic opioid administration on cardiovascular development. Successful candidates will work independently in a dynamic team of molecular and cell biologists, biochemists, and imaging specialists.



Nazish Sayed Lab [Find out more!](#)

Seeking a postdoctoral researcher with a background in vascular biology and cellular signaling to perform cutting-edge research on endothelial biology. The Sayed Lab conducts translational research in vascular biology and aims to understand the role of the vasculature in the development of cardiac diseases. The lab employs iPSC technology, bioengineering tools and CRISPR to investigate human vascular diseases. Candidates should have past experience in molecular and cellular biology and mouse models. Knowing bioinformatics is a plus.



Joseph C. Wu Lab [Find out more!](#)

Seeking a creative and motivated postdoctoral researcher to perform cutting-edge research on epigenetics of heart disease using iPSCs and genome editing. We also study stem cell immunogenicity and tumorigenicity and identify novel therapeutic targets. Candidate must hold a PhD and/or MD in a relevant field and have strong laboratory, analytical, organizational, and communication skills. Successful candidates will work independently in a dynamic research team of molecular and cell biologists, biochemists, and imaging specialists.

CVI Trainee Mentorship Program



- First-hand advice on career and research goals
- 53 faculty mentors, spanning 16 Stanford departments
- Structured program makes mentorship easy and effective

Join the program!

Eligibility: early career scientists working or studying at Stanford

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11TH ANNUAL CONFERENCE • JUNE 2-4, 2022

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- Robert A. Harrington, MD, FACC
- David E. Kandzari, MD, FACC
- Alan C. Yeung, MD, FACC
- Vinod H. Thourani, MD, FACC
- Joseph C. Wu, MD, FACC
- Joseph I. Miller, III, MD, FACC
- Mani A. Vannan, MBBS, FACC

- Hot topics in cardiovascular medicine
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[Download Agenda](#)

[Book Hotel](#)

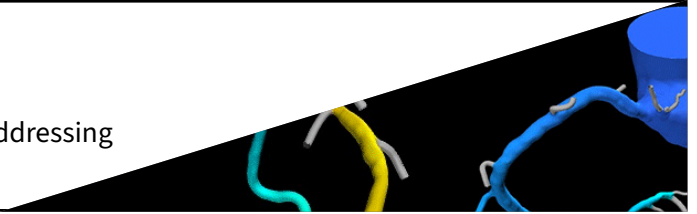


Training Programs for Postdocs and Residents

Mechanisms and Innovations in Vascular Disease

T32 Training Program for Postdocs

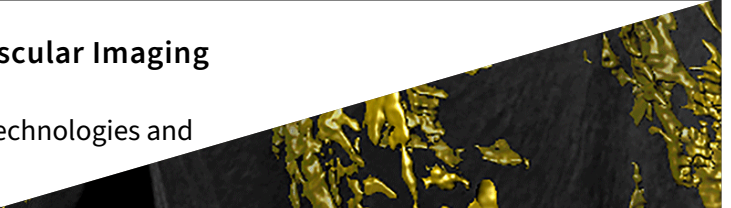
Comprehensive training in labs spanning 18 departments addressing fundamental questions about vascular disease



Multi-Disciplinary Training Program in Cardiovascular Imaging

T32 Training Program for Postdocs

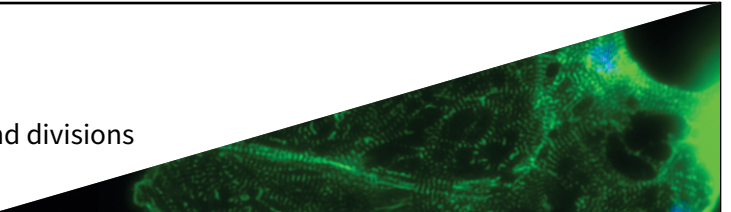
Multi-disciplinary and collaborative training in imaging technologies and cardiovascular biology



Research Training in Myocardial Biology

T32 Training Program for Postdocs

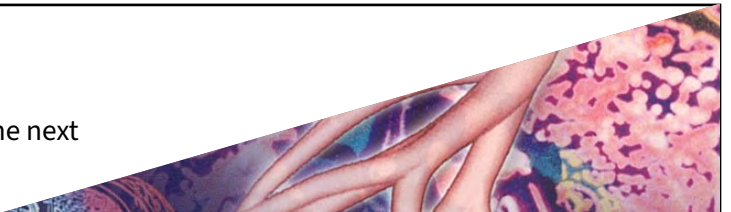
Multi-disciplinary training across diverse departments and divisions studying the biology of the heart muscle itself



Research Training Fellowship in Lung Biology

T32 Training Program for Postdocs

A supportive and invigorating training environment for the next generation of pulmonary physician-scientist



Research Fellowship Program in Cardiovascular Disease Prevention

T32 Training Program for Postdocs

Providing training in prevention research through direct research experience, directed study, and a core seminar program



Stanford Integrated Cardiovascular/Pulmonary Residency Research

R38 Training Program for Residents

Training residents in cardio-pulmonary research and accelerating their development into independent clinician-investigators



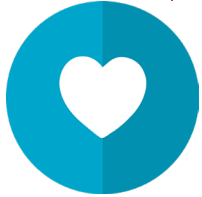
Cardiovascular Medicine Fellowship Program [Watch the Video](#)

Fellowship Program for Residents

Intensive and individually tailored training in clinical cardiology as well as in basic science and/or clinical cardiovascular research



MED223 | Cardiovascular and Pulmonary Sciences Seminar



The purpose of this course is to familiarize students with the spectrum of basic, clinical and translational CVP research beyond their specific area of chosen investigation. After a Tuesday seminar, students will meet informally with the seminar speaker. Examples of thematic topics that will be covered include how genetics and developmental biology address mechanisms of congenital heart disease, the rationale for new drug development in atherosclerosis, principles of biomechanics in device and biomaterial development, ion channel physiology leading to the design of clinical trials, evidence based medicine, and design of new treatment or diagnostic algorithms.

Fall and Winter Quarter: Tuesdays and Thursdays, 12:30 - 1:20 pm | 2 credits

Course Directors: Ngan Huang, PhD; Vinicio de Jesus Perez, MD; Edda Spiekerkoetter, MD; Ioannis Karakikes, PhD

<https://med.stanford.edu/cvi/education/cvi-courses/med223.html>

CTS 225 | Stem Cells in Cardiovascular Regenerative Medicine



This cardiovascular course focuses on the basic principles and translational applications of stem cells for treatment of cardiovascular diseases. Topics include the genetic modification of stem cells for precision medicine, as well as the science underlying how stem cells can be applied to regenerative medicine and drug development. Students will have the opportunity to develop their scientific reasoning and presentation skills as well as expand their professional portfolios through student-led journal club presentations and the development of a research proposal. This course is open to graduate students, medical students, and upper-division undergraduates.

Spring Quarter: Tuesdays and Thursdays, 2:00 - 3:00 pm | 2 credits

Course Director: Ngan Huang, PhD

<https://med.stanford.edu/cvi/education/cvi-courses/cts225.html>

MED 225 | Drug Development: From a Concept to the Clinic



Drug Development: From a Concept to the Clinic (MED225) is designed for medical students, trainees, basic scientists, clinicians, and clinician-scientists to provide an educational and practical perspective on the essential issues in drug development. The curriculum focuses on all stages of drug development and related research and business processes—from discovery and translational science and how to launch new projects to analyzing data, communication and interpretation of results of clinical trials, regulatory issues, and commercial considerations in product development. The emphasis will be on cardiovascular applications. MED227, MED225's sister course on key issues in regulation, benefit vs. risk, and commercialization, will be offered in the Fall.

Spring Quarter: Tuesdays 3:15 - 4:35 pm | 1 credit

Course Directors: Peter DiBattiste, MD; Jonathan Fox, MD, PhD; Alexander Gold, MD; Jayakumar Rajadas, PhD; Philip Sager, MD

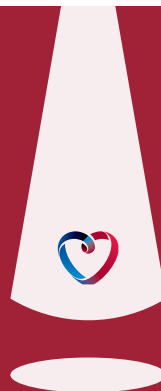
<https://med.stanford.edu/cvi/education/cvi-courses/med225.html>

CVI Staff Spotlight



YAMINI DWARAKANATH recently celebrated her second anniversary of working as a Research Administrator at CVI. In her role at the institute, her three main responsibilities are research development, managing social media for the institute, and providing support with program management.

One little known fact about Yamini is that she's a really good dancer! At CVI, the best part of her job is working with the CVI team. The team is so helpful and supportive and she appreciates that a lot.



Grants, Awards, Appointments, and Promotions

Craig Miller Receives the J.E. Wallace Sterling Lifetime Achievement Award

The Stanford School of Medicine Alumni Association awarded D. Craig Miller, MD, the J.E. Wallace Sterling Lifetime Achievement Award for exceptional service to Stanford Medicine and outstanding lifetime contributions to medicine.

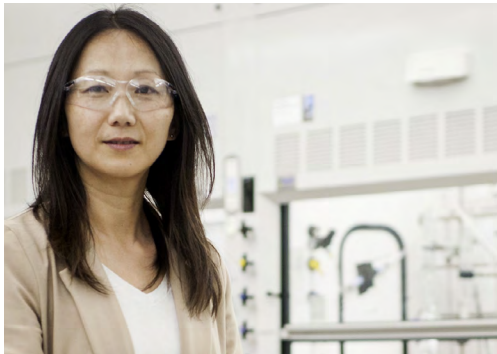
D. Craig Miller, MD, the Thelma and Henry Doelger Professor of Cardiovascular Surgery at Stanford, is a groundbreaking cardiovascular surgeon and an internationally recognized leader in thoracic aortic surgery as well as mitral and aortic valve diseases.

Dr. Miller spearheaded the adoption of valve-sparing aortic root replacement since 1993. Dr. Miller has also encouraged the creation of multidisciplinary treatment teams, having starting the Stanford Marfan and Related Connective Tissue Disorders Clinic in 1989.

At his core, Dr. Miller is a surgeon-scientist whose clinical and research work have focused on expanding the fundamental pathophysiological understanding of diseases in order to “make things better.”



[Watch the Video Tribute](#)



Zhenan Bao, PhD, awarded the inaugural VinFuture Prize

The inaugural VinFuture Prize has selected Zhenan Bao, the K. K. Lee Professor in the School of Engineering and chair of the Department of Chemical Engineering, the winner of its Female Innovator award, a \$500,000 prize dedicated to an outstanding female researcher or innovator.

Bao was awarded this prize for scientific advancements from her pioneering work on the development of skin-inspired electronics and their applications to a range of medical and energy applications.



Paul Yock Named fellow of the National Academy of Inventors

Paul Yock, MD, is the Martha Meier Weiland Professor in the School of Medicine and a professor of bioengineering. He is the founder and director emeritus of the Stanford Byers Center for Biodesign, a training program for health technology innovation. He was recognized for his work in inventing new medical devices, including the Rapid Exchange catheter system, Smart Needle, and PD-Access.



CVI Seed Grants Spring 2022



- Igniting and supporting new ideas that will change how we diagnose and treat cardiovascular disease
- \$20,000 per award
- Proposals that emphasize interdisciplinary collaborations and/or diversity are strongly encouraged
- Deadline: April 1st

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MORE



Sanjiv Narayan, MD, PhD, Professor of Medicine (Cardiovascular Medicine), was recognized as the 2022 Distinguished

Clinical Scientist by the Heart Rhythm Society.



Alison Marsden, PhD, Professor of Pediatrics (Cardiology) and of Bioengineering, was awarded the Open Science Champion Prize by the Stanford Center for Open and REproducible Science for her open source cardiovascular modeling and simulation suite (SimVascular) and other efforts to champion open research practices.



Minang (Mintu) Turakhia MD, was selected as a winner of the Rock Health's Top 50 in Digital Health

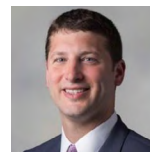
Luminaries award. Each year, Rock Health awards field-leading individuals and organizations for their contribution to the digital health community and healthcare ecosystem.

Dr. Turakhia was also promoted to Professor of Medicine (Cardiovascular Medicine) on January 1, 2022. He was also appointed to Associate Director of Clinical Research in the Division of Cardiovascular Medicine in Department of Medicine.



Jonathan Myers, PhD, Clinical Professor of Medicine (Cardio-vascular Medicine), is the 2022 recipient of the Citation Award from the American College of Sports Medicine. The ACSM Citation Award is given to an individual who has made significant and important scientific and scholarly contributions to sports medicine and/or the exercise sciences.

The honor is one of the most prestigious given by the 60,000-member international organization, which is the largest sports medicine and exercise science organization in the world.



William Hiesinger, MD, Assistant Professor of Cardiothoracic Surgery (Adult Cardiac Surgery), was recently awarded \$2.8M from

the NIH to support the development of an artificial intelligence-based echocardiography platform to predict cardiovascular surgery and heart failure outcomes.

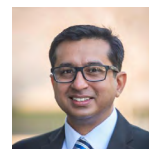


Abby C. King, PhD, Professor of Epidemiology and Population Health, has been recognized for her

tireless commitment to health equity, access, & outcomes with the Miriam Aaron Roland Volunteer Service Prize. The award "recognizes Stanford faculty who engage and involve students in integrating academic scholarship with significant and meaningful volunteer service."

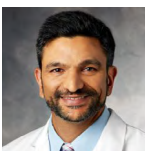


Marco Perez, MD, Associate Professor of Medicine (Cardiovascular Medicine), was awarded \$100,000 by the Stanford-Rambam Health Care Campus Collaboration for the project "Elucidating molecular mechanisms of inherited cardiovascular disease using whole genome sequencing."



Nazish Sayed, MD, PhD, Assistant Professor of Surgery (Vascular Surgery), received an NIH R01 from NHLBI. This 5-year grant, titled

"Unraveling the Role of Endothelium in Chemotherapy-induced Cardiotoxicity", will investigate the role of the vasculature in chemotherapy-induced cardiotoxicity as part of his lab's cardiooncology research program.



Vivek Bhalla, MD, Associate professor of Nephrology, has been elected to the ASCI (American Society for Clinical Investigation) as one of 95 new members for 2022.



My Heart Counts

5k, 10k & Kids Fun Run

April 10, 2022 | 9:00 a.m.

Koret Plaza, Stanford University





Nigam Shah, MBBS, PhD, Professor of Medicine (Biomedical Informatics) and of Biomedical Data Science and Stanford Health Care's Associate Chief Information Officer, has been appointed inaugural Chief Data Scientist at Stanford Health Care. In this role, he will help ensure that our health system remains at the forefront of using artificial intelligence and machine learning techniques to improve patient care and create operational efficiencies.



Kevin Alexander, MD, Assistant Professor of Medicine (Cardiovascular Medicine), has been appointed as a member of the AHA Bay Area Division Heart Walk Board/Executive Leadership Team.



Christopher Gardner, PhD, Rehnberg Farquhar Professor of Medicine (Stanford Prevention Research Center) will be the incoming chair of the American Heart Association's Nutrition Committee starting in June 2022.



Sean Wu, MD, PhD, Associate Professor of Medicine (Cardiovascular Medicine), was appointed as the Chief of Basic and Translational Research in the Division of Cardiovascular Medicine in the Department of Medicine.



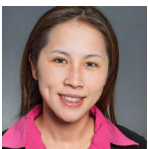
George Lui, MD, was promoted to Professor of Medicine in the Division of Cardiovascular Medicine on March 1, 2022.



Koen Nieman, MD, was promoted to Professor of Medicine in the Division of Cardiovascular Medicine on March 1, 2022.



Michael Salerno, MD, PhD, was appointed as Professor of Medicine in the Division of Cardiovascular Medicine and the Department of Radiology on December 1st, 2021.



Ngan Huang, PhD, was promoted to Associate Professor in the Department of Cardiothoracic Surgery on April 1, 2022.



Paul Wang, MD, Professor of Medicine (Cardiovascular Medicine) was appointed as Medical Director, Clinical Research in the Division of Cardiovascular Medicine in the Department of Medicine.

WINNERS OF THE 2021 MANUSCRIPT AWARD



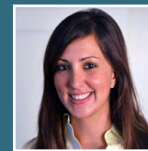
Jung-Min Ahn, MD
Visiting Scholar
Lab of William Fearon

Microcirculatory Resistance Predicts Allograft Rejection and Cardiac Events After Heart Transplantation



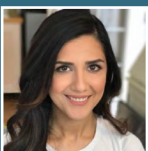
Dan Li, PhD
Postdoctoral Fellow,
Pediatrics
Lab of Marlene Rabinovitch

ALDH1A3 Coordinates Metabolism With Gene Regulation in Pulmonary Arterial Hypertension



Fatima Rodriguez, MD
Assistant Professor,
Cardiovascular Medicine

Racial and Ethnic Differences in Presentation and Outcomes for Patients Hospitalized With COVID-19: Findings From the American Heart Association's COVID-19 Cardiovascular Disease Registry



Sara Ranjbarvaziri, PhD
Postdoctoral Fellow,
Pediatrics
Lab of Daniel Bernstein

Altered Cardiac Energetics and Mitochondrial Dysfunction in Hypertrophic Cardiomyopathy



Mehmet Ozen, PhD
Basic Research Scientist,
Radiology / Canary Center
Lab of Utkan Demirci

Mitochondria-Rich Extra-cellular Vesicles Rescue Patient-Specific Cardiomyocytes From Doxorubicin Injury: Insights Into the SENECA Trial



Nazish Sayed, MD, PhD
Assistant Professor,
Cardiovascular Institute

An Inflammatory Aging Clock (iAge) Based on Deep Learning Tracks Multimorbidity, Immunosenescence, Frailty and Cardiovascular Aging



Han Zhu, MD, instructor of Medicine in the lab of Dr. Sean Wu, received an NIH K08 award for her project, "Identification of Causal T-Cell Mechanisms in Immune Checkpoint Inhibitor Induced Myocarditis."



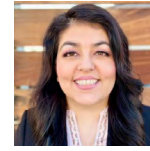
Mirwais Wardak, PhD, H. Henry Guo, MD, PhD, and Joseph C. Wu, MD, PhD, Director of the Stanford Cardiovascular Institute and the **Simon H. Stertz, MD**, Professor of Medicine, secured a \$125,000 industry gift from Pliant Therapeutics to investigate target engagement of PLN-74809, a small molecule anti-fibrotic drug, in patients with idiopathic pulmonary fibrosis to further advance innovative research at Stanford CVI.



Paul Cheng, MD, PhD, Instructor in Cardiovascular Medicine, received the Louis N. and Arnold M. Katz Basic Research Prize, which awards early-career scientists and "encourages new investigators to continue research careers in basic cardiovascular science."



Gentaro Ikeda, MD, PhD, postdoctoral fellow in the lab of Dr. Phillip Yang, received the 2021 William W. Parmley Young Author Achievement Award.



Tahmina Samad, MD, post-doctoral fellow CVI in the lab of Dr. Sean Wu, received the Physician-Scientist Award from the Chan-Zuckerberg Biohub.



Soah Lee, PhD, post-doctoral fellow in the lab of Dr. Sean Wu, will be starting new Assistant Professor position at Sungkyunkwan University in South Korea.



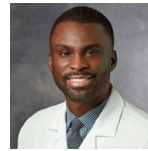
Sangkyun Cho, PhD, postdoctoral fellow in the lab of Dr. Joseph C. Wu, recently published "Reconstructing the heart using iPSCs: Engineering strategies and applications" that was selected as one of "2021 Papers of the Year" by the Journal of Molecular and Cellular Cardiology.



Malene Lindholm, PhD, was appointed to Instructor in Cardiovascular Medicine.



Connor O'Brien, MD, postdoctoral fellow in the lab of Dr. Phillip Yang, received the JACC: CardioOncology 2021 Young Author Achievement Award.



Oluwatomisin "Tomi" Obafemi, MD, resident in the Department of Cardiothoracic Surgery, received a departmental grant for the project "Diversification of the pipeline with a focus on mentorship and recruitment."



Brian Palmisano, MD, PhD, fellow in Cardiovascular Medicine, received an American College of Cardiology/ABC Merck Research Fellowship Award for the project "The Epigenetic Regulator Prdm16 Controls Smooth Muscle Phenotypic Modulation and Atherosclerosis Risk."



Krishna Pundi, MD, fellow in Medicine, received a American College of Cardiology/ABC Bristol Myers Squibb Research Fellowship Award for the project "Practice Variation and Outcomes in the Management of Non-Sustained Ventricular Tachycardia."

CVI Travel Award Winners Winter 2022



Isaac Perea-Gil, PhD
Postdoctoral Fellow
Lab of Ioannis Karakikes
CVI Travel Award Outreach Awardee
2nd Olympiad in Cardiovascular Medicine
Drug Screening in Human iPSC-Cardiomyocytes

Identifies Serine Biosynthesis Pathway as a Novel Therapeutic Target for Dilated Cardiomyopathy



Jason Szafron, PhD
Postdoctoral Fellow
Lab of Alison Marsden
World Congress of Biomechanics
Growth and Remodeling of the Pulmonary Arterial Tree with Evolving Hemodynamic Feedback



Aly Elezaby, MD, PhD
Fellow in Medicine
Lab of Daria Mochly-Rosen
2022 Keystone Symposia Conference Q7: Heart Failure: Mechanisms and Therapies.
A Non-canonical Mitochondrial Role for Cardiac Troponin I: Implications for Ischemia-Reperfusion Injury

I: Implications for Ischemia-Reperfusion Injury



Brian Wayda, MD, MPH
Postdoctoral Fellow
Lab of Kiran Khush
International Society of Heart and Lung Transplantation (ISHLT) 42nd Annual Meeting
Is Temporary Here to Stay? Excellent Outcomes and Shorter Wait Times with Increased Use of Temporary Mechanical Support Since the 2018 Revision to Heart Transplant Allocation Policy

Shorter Wait Times with Increased Use of Temporary Mechanical Support Since the 2018 Revision to Heart Transplant Allocation Policy

Funding Opportunities

For more information about funding opportunities or grant application support, please contact our Office of Research Development: cvi_grants@stanford.edu.

MAY 2022

Nonhuman Primate Transplantation Tolerance Cooperative Study Group (U01 Clinical Trial Not Allowed). Application Deadline: May 13, 2022. RFA-AI-22-002

Tobacco Centers of Regulatory Science (TCORS) for Research Relevant to the Family Smoking Prevention and Tobacco Control Act (U54 Clinical Trial Optional). Letter of Intent Deadline: May 14, 2022 (60 days before Application Deadline: July 14, 2022). RFA-OD-22-004

NHLBI Program Project Applications (P01 Clinical Trial Optional). Application Deadline: May 25, 2022. PAR-21-088

Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grant (Parent T32). Application Deadline: May 25, 2022. PA-20-142

Medical Scientist Training Program (T32). Application Deadline: May 25, 2022. PAR-21-189

Initiative for Maximizing Student Development (IMSD) (T32 - Clinical Trial Not Allowed). Application Deadline: May 25, 2022. PAR-21-025

Stephen I. Katz Early-Stage Investigator Research Project Grant (R01 Clinical Trial Not Allowed). Application Deadline: May 26, 2022. PAR-21-038

Bioengineering Partnerships with Industry (U01 Clinical Trial Optional). Application Deadline: May 26, 2022. PAR-22-123

Team-Based Design in Biomedical Engineering Education (R25 Clinical Trial Not Allowed). Application Deadline: May 30, 2022. PAR-22-000

Education: Conference Grants and Research Training Awards. Application Deadline: May 31, 2022. CIRM

California Institute of Regenerative Medicine. Clinical Trial Stage Projects. Application Deadline: Last business day of the month (i.e., May 31, 2022)

JUNE 2022

Improving Postpartum Maternal Outcomes for Populations Experiencing Disparities. Letter of Intent Deadline: June 1, 2022. PCORI

Broad Pragmatic Studies Funding Announcement. Letter of Intent Deadline: June 1, 2022. PCORI

Improving Methods for Conducting Patient-Centered Outcomes Research. Letter of Intent Deadline: June 1, 2022. PCORI

Science of Engagement PCORI Funding Announcement. Letter of Intent Deadline: June 1, 2022. PCORI

Research Project Grant (Parent R01 Basic Experimental Studies with Humans Required). Application Deadline: June 5, 2022. PA-20-184

NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed). Application Deadline: June 5, 2022. PA-20-185

NIH Research Project Grant (Parent R01 Clinical Trial Required). Application Deadline: June 5, 2022. PA-20-183

Improving Patient Adherence to Treatment and Prevention Regimens to Promote Health (R01 Clinical Trial Optional). Application Deadline: June 5, 2022. PA-18-722

Implementation of shared decision making for HLBS diseases and conditions (R01 Clinical Trial Optional). Application Deadline: June 5, 2022. PA-19-166

Academic-Industrial Partnerships for Translation of Technologies for Diagnosis and Treatment (R01 - Clinical Trial Not Allowed). Application Deadline: June 5, 2022. PAR-21-166

Bioengineering Research Grants (BRG) (R01 Clinical Trial Required). Application Deadline: June 5, 2022. PAR-19-159

Bioengineering Research Grants (BRG) (R01 Clinical Trial Not Allowed). Application Deadline: June 5, 2022. PAR-19-158

NIH Mentored Patient-Oriented Research Career Development Award (Parent K23 - Independent Clinical Trial Not Allowed). Deadline: June 12, 2020. PA-20-205

NIH Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Not Allowed). Deadline: June 12, 2020. PA-20-203

NIH Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Required). Deadline: June 12, 2020. PA-20-202

NIAID Career Transition Award (K22 Independent Clinical Trial Not Allowed). Application Deadline: June 12, 2022. PAR-22-075

Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity (K99/R00 - Independent Clinical Trial Required). Application Deadline: June 12, 2022. PAR-21-272

Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity (K99/R00 Independent Clinical Trial Not Allowed). Application Deadline: June 12, 2022. PAR-21-271

Mentored Patient-Oriented Research Career Development Award (Parent K23 Independent Clinical Trial Required). Application Deadline: June 12, 2022. PA-20-206

Mentored Patient-Oriented Research Career Development Award (Parent K23 Independent Clinical Trial Not Allowed). Application Deadline: June 12, 2022. PA-20-205

NIH Pathway to Independence Award (Parent K99/R00 Independent Clinical Trial Not Allowed). Application Deadline: June 12, 2022. PA-20-188

Partnering Opportunity for Translational Research Projects. Application Deadline: June 14, 2022. CIRM

Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R21 Clinical Trial Optional). Application Deadline: June 16, 2022. PA-19-111

Notice of Special Interest (NOSI): Improving Outcomes in Cancer Treatment-Related Cardiotoxicity. NOT-CA-22-001

NIH Small Research Grant Program (Parent R03 Clinical Trial Not Allowed). Application Deadline: June 16, 2022. PA-20-200

NIH Exploratory/Developmental Research Grant Program (Parent R21 Clinical Trial Required). Application Deadline: June 16, 2022. PA-20-194

NIH Exploratory/Developmental Research Grant Program (Parent R21 Clinical Trial Not Allowed). Application Deadline: June 16, 2022. PA-20-195

Maximizing the Scientific Value of the NHLBI Biologic Biospecimen Repository: Scientific Opportunities for Exploratory Research (R21). Application Deadline: June 21, 2022. RFA-HL-17-022

California Institute of Regenerative Medicine. Clinical Trial Stage Projects. Application Deadline: Last business day of the month (i.e., June 30, 2022)

JULY 2022

Research Project Grant (Parent R01 Basic Experimental Studies with Humans Required). Application Deadline for renewal, resubmission, revision: July 5, 2022. PA-20-184

NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 5, 2022. PA-20-185

NIH Research Project Grant (Parent R01 Clinical Trial Required). Application Deadline for renewal, resubmission, revision: July 5, 2022. PA-20-183

Improving Patient Adherence to Treatment and Prevention Regimens to Promote Health (R01 Clinical Trial Optional). Application Deadline for renewal, resubmission, revision: July 5, 2022. PA-18-722

Implementation of shared decision making for HLBS diseases and conditions (R01 Clinical Trial Optional). Application Deadline for renewal, resubmission, revision: July 5, 2022. PA-19-166

Academic-Industrial Partnerships for Translation of Technologies for Diagnosis and Treatment (R01 - Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 5, 2022. PAR-21-166

NIH Mentored Patient-Oriented Research Career Development Award (Parent K23 - Independent Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 12, 2022. PA-20-205

NIH Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 12, 2022. PA-20-203

NIH Mentored Clinical Scientist Research Career Development Award (Parent K08 Independent Clinical Trial Required). Application Deadline for renewal, resubmission, revision: July 12, 2022. PA-20-202

NIAID Career Transition Award (K22 Independent Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 12, 2022. PAR-22-075

Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity (K99/R00 - Independent Clinical Trial Required). Application Deadline for renewal, resubmission, revision: July 12, 2022. PAR-21-272

Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity (K99/R00 Independent Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 12, 2022. PAR-21-271

Mentored Patient-Oriented Research Career Development Award (Parent K23 Independent Clinical Trial Required). Application Deadline for renewal, resubmission, revision: July 12, 2022. PA-20-206

Mentored Patient-Oriented Research Career Development Award (Parent K23 Independent Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 12, 2022. PA-20-205

NIH Pathway to Independence Award (Parent K99/R00 Independent Clinical Trial Not Allowed). Application Deadline for renewal, resubmission, revision: July 12, 2022. PA-20-188

Improving Outcomes in Cancer Treatment-Related Cardiotoxicity (R21 Clinical Trial Optional). Application Deadline for renewal, resubmission, revision: July 16, 2022. PA-19-111

Notice of Special Interest (NOSI): Improving Outcomes in Cancer Treatment-Related Cardiotoxicity. NOT-CA-22-001

California Institute of Regenerative Medicine. Clinical Trial Stage Projects. Application Deadline: Last business day of the month (i.e., July 29th, Aug 31st)

AUGUST 2022

Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research (Parent F31 - Diversity). New, renewal, resubmission deadline: August 8, 2022. PA-21-052

NIA Postdoctoral Fellowship Award to Promote Diversity in Translational Research for AD/ADRD (F32 Clinical Trial Not Allowed). New, renewal, resubmission deadline: August 8, 2022. PAR-21-217

Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (Parent F32). New, renewal, resubmission deadline: August 8, 2022. PA-21-048

Ruth L. Kirschstein National Research Service Award (NRSA) Individual Senior Fellowship (Parent F33). Application Deadline: August 8, 2022. PA-21-047

Short-Term Research Education Program to Enhance Diversity in Health-Related Research (R25 Clinical Trial Not Allowed). Application Deadline: August 9, 2022. RFA-HL-22-012

NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed). Renewal, resubmission, revision deadline: August 12, 2022. PA-18-648

California Institute of Regenerative Medicine. Clinical Trial Stage Projects. Application Deadline: Last business day of the month (i.e., July 29th, Aug 31st)

TRDRP Core and Community-Based Participatory Research Awards. Letter of Intent Deadline: August 26, 2022. TRDRP

ADMINISTRATIVE SUPPLEMENTS

Research Supplements to Promote Diversity in Health-Related Research (Administrative Supplement - Clinical Trial Not Allowed). PA-21-071

Research Supplements to Promote Re-Entry and Re-integration into Health-Related Research Careers (Admin Supp - Clinical Trial Not Allowed). PA-20-272

Administrative Supplements to Existing NIH Grants and Cooperative Agreements (Parent Admin Supp Clinical Trial Optional). PA-20-272

CVI Grant Writing Workshops

CVI Grant Writing Workshops are participation-based and provide feedback and a support network to enable you to prepare your strongest proposal!

March 22 - May 24

[Find Out More!](#)



National and Global Cardiovascular Conferences

Please note: some events may be canceled or postponed due to COVID-19. Please check directly with event organizers.

MARCH 2022

Mayo Clinic Vascular Symposium

March 24 – 26, 2022. Phoenix, AZ / Hybrid

Society of Interventional Oncology: SIO2022

March 24 – 28, 2022. San Francisco, CA / Hybrid

APRIL 2022

American College of Cardiology: ACC 22

April 2 – 4, 2022. Washington D.C. / Hybrid

Cardiovascular Implant Durability Conference

April 4 – 6, 2022. Pacific Grove, CA / Hybrid

Keystone Symposia: Single Cell Biology: Pushing New Frontiers in the Life Sciences

April 5 – 9, 2022. Firenze, Italy / Hybrid

Echo Fiesta: An In-Depth Review of Adult Echocardiography for Sonographers and Physicians

April 11 – 14, 2022. San Antonio, TX / Hybrid

CV Transforum Spring'22

April 21 – 23, 2022. Atlanta, GA / Hybrid

Stanford Drug Discovery Symposium

April 25 – 26, 2022. Virtual

Charing Cross: Vascular & Endovascular Challenges Update.

April 26 – 28, 2022. London, UK / Hybrid

Transcatheter Cardiovascular Therapeutics Asia Pacific: TCTAP 2022

April 27 – 29, 2022. Virtual

Keystone Symposia: Antibodies as Drugs

April 27 – 30, 2022. Keystone Resort, Colorado / Hybrid

Keystone Symposia: Emerging Cellular Therapies

April 27 – May 1, 2022. Keystone Resort, Colorado / Hybrid

Keystone Symposia: Precision Genome Engineering

April 27 – May 1, 2022. Keystone Resort, Colorado / Hybrid

Heart Rhythm Society: Heart Rhythm 2022

April 29 – May 1, 2022. San Francisco, CA / Hybrid

Mayo Clinic Echocardiography Review Course for Boards and Recertification

April 29 – May 3, 2022. Rochester, MN / Hybrid

MAY 2022

World Live Neurovascular Conference: WLNC2022

May 11 – 13, 2022. Washington D.C.

Basic to Advanced Echocardiography

May 11 – 14, 2022. Asheville, NC / Hybrid

American Association of Thoracic Surgery: AATS 102nd Annual Meeting

May 14 – 17, 2022. Boston, MA

Foundations in Cardiology Practice

May 19 – 21, 2022. Fernandina Beach, FL / Hybrid

Society for Cardiovascular Angiography & Interventions: SCAI 2022 Scientific Sessions

May 19 – 22, 2022. Atlanta, GA

New Cardiovascular Horizons: 22nd Annual NCVH Conference

May 31 – June 3, 2022. New Orleans, LA

JUNE 2022

Expert Venous Management: EVM 2022

June 3 – 4, 2022. New Jersey / Hybrid

The Structural Heart Summit: TVT 2022

June 8 – 10, 2022. Chicago, IL / Hybrid

PCTC Cardiovascular Bioengineering (CVBE) Symposium

June 9 – 11, 2022. Gottingen, Germany

VESS Spring Meeting 2022

June 15 – 18, 2022. Boston, MA

2022 Vascular Annual Meeting

June 15 – 18, 2022. Boston, MA

26th Annual Hypertension, Diabetes & Dyslipidemia Conference

June 23 – 25, 2022. Charleston, South Carolina / Hybrid

JULY 2022

Heart Failure Up North: Practical Approaches to the Management of Congestive Heart Failure

July 9 – 10, 2022. Nisswa, MN / Hybrid

Current Applications and Future of Artificial Intelligence in Cardiology

July 14 – 16, 2022. San Francisco, CA / Hybrid

Complex Interventional Cardiovascular Therapy: CICT 2022

July 15 – 16, 2022. Pasadena, CA

Echo Alaska: Frontiers of Multimodality Imaging Including Echo, Cardiac CT and MRI

July 18 – 22, 2022. Anchorage, AK / Hybrid

Cardiovascular Innovations 2022

July 21 – 23, 2022. Denver, CO

Success With Failure: Strategies for the Evaluation and Treatment of Heart Failure

July 28 – 30, 2022. Alberta, Canada / Hybrid

AUGUST 2022

Society for Vascular Ultrasound: 2022 Annual Conference & Marketplace

August 3 – 6, 2022. Orlando, FL

Contemporary Cardiovascular Care Conference

August 5, 2022. Wisconsin Dells, WI / Hybrid

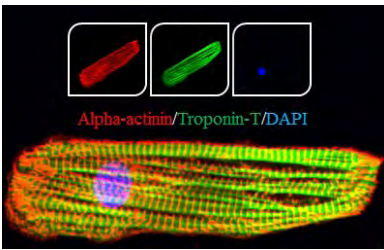
UCSF Vascular Symposium

August 7 – 9, 2022. Napa, CA

2022 Charleston HFpEF Conference

August 19 – 21, 2022. Charleston, SC

Stanford CVI Human iPSC Biobank Service



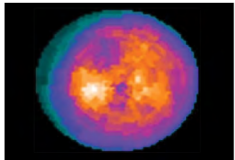
Normal and patient-derived reprogrammed cardiomyocytes are a tremendous resource for researchers and physicians here at Stanford and around the country. Understanding the disease process directly at the population level and observing these cells as surrogates under a myriad of conditions has the potential 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, CVI created a service by which de-identified peripheral blood mononuclear cell (PBMC) samples from selected patients can be sent to Stanford CVI for reprogramming free of cost.

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

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

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, 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

CVI Clinical Trials Core

The CVI Clinical Trials Core provides a full spectrum of support to CVI members and their clinical trials. The coordinator has extensive clinical research experience in both industry and academia. The team provides services and support to principal investigators and sponsors, including:

- Consultation
- Study start-up management, including IRB applications, budget development
- Subject recruitment, site visits, and follow-ups (AE reporting and queries)
- Data management
- Regulatory compliance and documentation
- Closeout

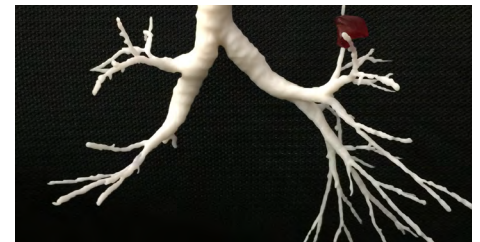
Contact: Ed Finn, Clinical Trials Manager / efinn@stanford.edu



Cardiovascular Pharmacology (ADD-ReB)

The Advanced Drug Delivery & Regenerative Biomaterials (ADD-ReB) 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. CVI Cardiovascular Pharmacology also offers trainings and lectures.

Contact: Jayakumar Rajadas, PhD / jayraja@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. Between December 1st, 2021 and February 28th, 2022, Stanford Cardiovascular Institute members published **470** original manuscripts and reviews, further contributing to our understanding of cardiovascular biology and disease. Here, we highlight selected manuscripts by our members.

December 2021

Insulin Growth Factor Phenotypes in Heart Failure with Preserved Ejection Fraction, an INSPIRE Registry and CATHGEN Study: IGF axis in HFpEF. Haddad F, Ataam JA, Amsallem M, Cauwenberghs N, Kuznetsova T, Rosenberg-Hasson Y, Zamanian RT, Karakikes I, Horne BD, Muhlestein JB, Kwee L, Shah S, Maecker H, Knight S, Knowlton K. *J Card Fail.* 2021 Dec 31;S1071-9164(21)00526-1. doi: 10.1016/j.cardfail.2021.12.012. PMID: 34979242

Biomechanical engineering comparison of four leaflet repair techniques for mitral regurgitation using a novel 3-dimensional-printed left heart simulator. Paulsen MJ, Cuartas MM, Imbrie-Moore A, Wang H, Wilkerson R, Farry J, Zhu Y, Ma M, MacArthur JW, Woo YJ. *JTCVS Tech.* 2021 Oct 7;10:244-251. doi: 10.1016/j.jtc.2021.09.040. eCollection 2021 Dec.

Generation of three iPSC lines from dilated cardiomyopathy patients carrying a pathogenic LMNA variant. Lee C, Cho S, Lai C, Shenoy S, Vagelos R, Wu JC. *Stem Cell Res.* 2021 Dec 21;59:102638. doi: 10.1016/j.scr.2021.102638. PMID: 34954454

Aging disrupts circadian gene regulation and function in macrophages. Blacher E, Tsai C, Litichevskiy L, Shipony Z, Iwaka CA, Schneider KM, Chuluun B, Heller HC, Menon V, Thaiss CA, Andreasson KI. *Nat Immunol.* 2021 Dec 23. doi: 10.1038/s41590-021-01083-0. PMID: 34949832

Prescription Patterns for Pulmonary Vasodilators in the Treatment of Pulmonary Hypertension Associated With Chronic Lung Diseases: Insights From a Clinician Survey. Thomas CA, Lee J, Bernardo RJ, Anderson RJ, Glinskii V, Sung YK, Kudelko K, Hedlin H, Sweatt A, Kawut SM, Raj R, Zamanian RT, de Jesus Perez V. *Front Med (Lausanne).* 2021 Dec 3;8:764815. doi: 10.3389/fmed.2021.764815. PMID: 34926507

Best Practices for Imaging Cardiac Device-Related Infections and Endocarditis: A JACC: Cardiovascular Imaging Expert Panel Statement. Dilsizian V, Budde RPJ, Chen W, Mankad SV, Lindner JR, Nieman K. *JACC Cardiovasc Imaging.* 2021 Dec 7;S1936-878X(21)00766-X. doi: 10.1016/j.jcmg.2021.09.029. PMID: 34922877

Preoperative Computed Tomography Angiography Reveals Leaflet-Specific Calcification and Excursion Patterns in Aortic Stenosis. Chen IY, Vedula V, Malik SB, Liang T, Chang AY, Chung KS, Sayed N, Tsao PS, Giacomini JC, Marsden AL, Wu JC. *Circ Cardiovasc Imaging.* 2021 Dec;14(12):1122-1132. doi: 10.1161/CIRCIMAGING.121.012884. PMID: 34915729

Coronary blood vessels from distinct origins converge to equivalent states during mouse and human development. Phansalkar R, Krieger J, Zhao M, Kolluru SS, Jones RC, Quake SR, Weissman I, Bernstein D, Winn VD, D'Amato G, Red-Horse K. *Elife.* 2021 Dec 15;10:e70246. doi: 10.7554/eLife.70246. PMID: 34910626

Association between temporal summation and conditioned pain modulation in chronic low back pain: baseline results from 2 clinical trials. Kong JT, You DS, Law CSW, Darnall BD, Gross JJ, Manber R, Mackey S. *Pain Rep.* 2021 Dec 8;6(4):e975. doi: 10.1097/PR9.0000000000000975. PMID: 34901679

CT Angiography of Venoarterial Extracorporeal Membrane Oxygenation. Shen J, Tse JR, Chan F, Fleischmann D. *Radiographics.* 2022 Jan-Feb;42(1):23-37. doi: 10.1148/rg.210079. PMID: 34890275

Microcirculatory Resistance Predicts Allograft Rejection and Cardiac Events After Heart Transplantation. Ahn JM, Zimmermann FM, Gullestad L, Angerås O, Karason K, Russell K, Lunde K, Okada K, Luikart H, Khush KK, Honda Y, Pijls NHJ, Lee SE, Kim JJ, Park SJ, Solberg OG, Fearon WF. *J Am Coll Cardiol.* 2021 Dec 14;78(24):2425-2435. doi: 10.1016/j.jacc.2021.10.009. PMID: 34886963

Identifying Atrial Fibrillation Mechanisms for Personalized Medicine. Deb B, Ganesan P, Feng R, Narayan SM. *J Clin Med.* 2021 Dec 1;10(23):5679. doi: 10.3390/jcm10235679. PMID: 34884381

Patient-derived gene and protein expression signatures of NGLY1 deficiency. Rauscher B, Mueller WF, Clauder-Münster S, Jakob P, Islam MS, Sun H, Ghidelli-

Disse S, Boesche M, Bantscheff M, Pflaumer H, Collier P, Haase B, Chen S, Hoffman R, Wang G, Benes V, Drewes G, Snyder M, Steinmetz LM. *J Biochem.* 2021 Dec 8;mvab131. doi: 10.1093/jb/mvab131. PMID: 34878535

Treatment with the Prolyl Hydroxylase Inhibitor JNJ Promotes Abdominal Aortic Aneurysm Progression in Diabetic Mice. Guo J, Shoji T, Ge Y, Zheng X, Li Y, Zhao S, Ikezoe T, Liu S, Huang J, Wang W, Xu B, Dalman RL. *Eur J Vasc Endovasc Surg.* 2021 Dec 3;S1078-5884(21)00814-5. doi: 10.1016/j.ejvs.2021.10.030. PMID: 34872812

Xenogeneic skin transplantation promotes angiogenesis and tissue regeneration through activated Trem2+ macrophages. Henn D, Chen K, Fehlmann T, Trotsyuk AA, Sivaraj D, Maan ZN, Bonham CA Jr, Barrera JA, Mays CJ, Greco AH, Moortgat Illouz SE, Lin JQ, Steele SR, Foster DS, Padmanabhan J, Momeni A, Nguyen D, Wan DC, Kneser U, Januszzyk M, Keller A, Longaker MT, Gurtner GC. *Sci Adv.* 2021 Dec 3;7(49):eabi4528. doi: 10.1126/sciadv.abi4528. PMID: 34851663

Geometric Uncertainty in Patient-Specific Cardiovascular Modeling with Convolutional Dropout Networks. Maher GD, Fleeter CM, Schiavazzi DE, Marsden AL. *Comput Methods Appl Mech Eng.* 2021 Dec 1;386:114038. doi: 10.1016/j.cma.2021.114038. PMID: 34737480

Prognostic value of comprehensive intracoronary physiology assessment early after heart transplantation. Ahn JM, Zimmermann FM, Arora S, Solberg OG, Angerås O, Rolid K, Rafique M, Aaberge L, Karason K, Okada K, Luikart H, Khush KK, Honda Y, Pijls NHJ, Lee SE, Kim JJ, Park SJ, Gullestad L, Fearon WF. *Eur Heart J.* 2021 Dec 21;42(48):4918-4929. doi: 10.1093/eurheartj/ehab568. PMID: 34665224

Physical activity, well-being, and priorities of older women during the COVID-19 pandemic: a survey of Women's Health Initiative Strong and Healthy (WHISH) intervention participants. Wegner L, Mendoza-Vasconez AS, Mackey S, McGuire V, To C, White B, King AC, Stefanick ML. *Transl Behav Med.* 2021 Dec 14;11(12):2155-2163. doi: 10.1093/tbm/ibab122. PMID: 34633465

The Stanford experience of heart transplantation over five decades. Zhu Y, Lingala B, Baiocchi M, Toro Arana V, Williams KM, Shudo Y, Oyer PE, Woo YJ. *Eur Heart J.* 2021 Dec 21;42(48):4934-4943. doi: 10.1093/eurheartj/ehab416. PMID: 34333595

Operative Technique of Donor Organ Procurement for En Bloc Heart-liver Transplantation. Elde S, Brubaker AL, Than PA, Rinewalt D, MacArthur JW, Alassar A, Bonham CA, Esquivel CO, Shudo Y, Concepcion W, Woo YJ. *Transplantation.* 2021 Dec 1;105(12):2661-2665. doi: 10.1097/TP.0000000000003697. PMID: 33606485

Chitinase 3 like 1 is a regulator of smooth muscle cell physiology and atherosclerotic lesion stability. Tsantilas P, Lao S, Wu Z, Eberhard A, Winski G, Vaerst M, Nanda V, Wang Y, Kojima Y, Ye J, Flores A, Jarr KU, Pelisek J, Eckstein HH, Matic L, Hedin U, Tsao PS, Paloschi V, Maegdefessel L, Leeper NJ. *Cardiovasc Res.* 2021 Dec 17;117(14):2767-2780. doi: 10.1093/cvr/cvab014. PMID: 33471078

January 2022

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