

SARVER HEART CENTER

NEWSLETTER ISSUE 71 • SPRING/SUMMER 2015

BE PART OF SOMETHING BIG TO HELP BEAT HEART DISEASE

The Sarver Heart Center Biorepository is up and running



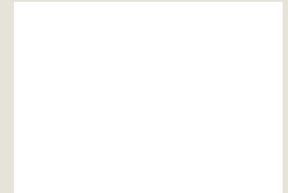
Nancy Sweitzer, MD, PhD, principal investigator, thanks Ken Block, the first Sarver Heart Center Biorepository participant. He's helping UA Sarver Heart Center scientists ask bigger questions to get better answers as we move toward a future free of heart disease and stroke.

learn how heart and vascular conditions affect groups of people differently. Providing Sarver Heart Center investigators access to such a resource, and the resulting work, will improve our ability to diagnose and treat heart diseases in the future," added Dr. Sweitzer.

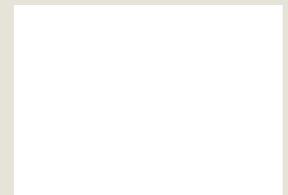
To be part of the Sarver Heart Center Biorepository, please go to our website <http://heart.arizona.edu/latest-research> and click on the Cardiology Research Registry button. Completing this simple one-page form allows our staff to contact you about the Sarver Heart Center

This won't take much – just three tablespoons of your blood, about the amount taken during a standard blood draw. This small amount will help us ask bigger questions and get better answers as we move toward a future free of heart disease and stroke. You don't have to have heart disease to be part of this big venture. You just need to be at least 18 years old.

"The biorepository will enable physicians and basic scientists to access biological samples in a range of people with and without different heart diseases. This resource will support our efforts in precision medicine, with the goal of improved understanding of how heart disease develops. It will also support our efforts in health disparities as we strive to



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Plus:

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Please visit the UA Sarver Heart Center online:
www.heart.arizona.edu

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NOTE FROM THE DIRECTOR



With a newly-announced Sarver Heart Center vision for the future, we are looking forward to 2016 – our 30th anniversary as a center dedicated to research and education in cardiovascular disease. The faculty are pursuing innovative research in heart disease, and we are recruiting increasingly impressive physicians in training and graduate students who are studying to become the specialists and researchers of tomorrow. Most importantly, we are treating thousands of people in our community and creating hope for a future free of heart disease and stroke.

In the past 30 years the Sarver Heart Center has been the site of impressive advances in heart disease research and treatment, but our work is not finished. As we proceed forward with a revitalized vision, great things are coming to the Sarver Heart Center in the new year and beyond.

This year we developed a 10-year vision that proposes to focus our mission in five areas going forward:

1. **Advanced Heart Disease, including heart failure, mechanical circulatory support, pulmonary hypertension and heart transplant.** An area of historical strength at the Sarver Heart Center, home of the team that made the total artificial heart a lifesaving technology, we are in the process of growing and revamping our clinical programs in this area. Among the patients with advanced heart disease we have recently cared for, we are touched by a Native American woman who, with the support of a ventricular assist device, was able to keep her failing heart pumping until a donor heart became available. She now can live a full life and share her culture with her granddaughter.
2. **Sudden Cardiac Arrest and Resuscitation.** Since Dr. Ewy first championed chest-compression-only CPR more than 20 years ago, more than 2,900 lives have been saved in Arizona. This year, Pima County Sheriff's deputies started immediate chest-compression-only CPR when they found a 70-year-old man who suffered a sudden cardiac arrest slumped over in his car. Their response combined with Banner – University Medical Center Tucson's ECMO technology (Extracorporeal Membrane Oxygenation) saved the life and brain function of this retired physiologist. Once again, we were reminded of the impact of our combined missions of research and community education.
3. **Precision Cardiovascular Therapies.** Imagine if the pills you took for heart disease were designed for you personally! As an advanced heart disease cardiologist, I treat most of my heart failure patients with six or more medicines, all proven to help most people with this disease. We are working to better understand disease variation between people in order to individualize and simplify treatment of complex heart diseases. I'm pleased to announce I was awarded a grant from the American Heart Association in November that supports analysis of blood samples from heart failure patients with just this goal in mind – identifying individual variation in blood proteins to better understand these individual variations.
4. **Cardiovascular Health and Wellness.** I know many of you believe passionately that Tucson is a special place of wellness and healing. During the next 10 years, we will work with you and like-minded community partners to make Tucson a destination for cardiovascular disease prevention and healing, augmenting our current knowledge of heart-healthy behavior with new discovery. Full realization of this aspect of the vision will require recruitment of top talent, capable of taking full advantage of big data resources available from Banner to facilitate transformational discoveries on the path to optimal cardiovascular wellness.
5. **Health Disparities.** Heart disease is not manifest with the same signs and symptoms, nor is it treated identically in all people. Women, minorities and older persons have different risks and benefits when heart disease is treated from the results shown in many trials that guide therapy. By better understanding population differences we can improve outcomes in these groups. We look to lead the research that must be done.

We hope you're excited to be part of this vision and will continue to support the Sarver Heart Center as we enter the next era. With your support, Sarver Heart Center physicians and scientists combine knowledge and skill better understand heart disease and find improved, targeted treatments for individual patients and populations. To speed our quest to transform the landscape of heart disease, we rely on support from people like you.

You will continue to hear about this vision. If something in the vision strikes a chord with you, please reach out to us so we can more fully develop areas of mutual interest and engage you in supporting this important effort.

Best wishes to you and your family for a happy and healthy year!

A handwritten signature in black ink that reads "Nancy K. Sweitzer".

Nancy K. Sweitzer, MD, PhD
Director, University of Arizona Sarver Heart Center
Chief, Division of Cardiology

Continued from page 1

Biorepository in addition to other ongoing studies. This webpage includes information about other clinical research studies at the Sarver Heart Center.

To participate in the Sarver Heart Center Biorepository, you'll be asked to:

1. Complete a health questionnaire.
2. Sign an informed consent form that allows researchers to view your electronic medical record.
3. Donate about three tablespoons of blood. These blood samples will help scientists better understand heart disease to improve care and treatment now and in the future. Specifically, the blood will be used for future studies of genes, proteins, and other cellular mediators of heart disease.

“While heart disease remains the leading killer of people in the United States, deaths have declined in recent years, mostly

for white men, the population that has been studied the most. Heart disease is a significant issue for women and minority groups such as Latinos and African Americans. It's clear that our current strategies may not be equally effective in all these groups – we just don't know. Much research still needs to be done,” said Nancy K. Sweitzer, MD, PhD, Director of the UA Sarver Heart Center, Chief of Cardiology and Professor of Medicine in the UA College of Medicine – Tucson. Dr. Sweitzer leads this clinical research project focused on building a cardiac biorepository at the UA, one of only a handful of universities in the U.S. with a biorepository dedicated to heart disease research.

If you have questions, please email Lizzette Marquez - marquez@shc.arizona.edu or call 520-626-5431.



Matt Darrow and Lizzette Marquez, clinical research coordinators, draw Mr. Block's three tablespoons of blood.

SOWING SEEDS FOR THE FUTURE OF RESEARCH



Cardiovascular Science Fair

The UA Sarver Heart Center has a long tradition of encouraging young researchers as evidenced by the number Investigator Award recipients who have been supported by grants early in their careers, thanks to the generosity of donors. This year a new tradition was launched – Sarver Heart Center’s Cardiovascular Science Fair. Cardiology fellows and residents were invited to meet more seasoned heart disease researchers to learn about projects and find a possible mentor match. Following a “speed-dating” format, fellows and residents switched to a different table every five minutes to learn about another area of research.

“It was a very energetic event and I’m very appreciative of the time devoted to this program by some of our most seasoned faculty members,” said Nancy K. Sweitzer, MD, PhD, Director of the UA Sarver Heart Center. “Our goal is to help physicians in training to understand they have the support and capability to pursue research questions that may lead to improved knowledge and patient care.”



Charles Cairns, MD, interim dean of the UA College of Medicine – Tucson (right) joins Dr. Nancy K. Sweitzer, director of the UA Sarver Heart Center to explain their research project physicians in training.



Cardiology faculty members, including Kapil Lotun, MD, (center with white coat) and Raj Janardhanan, MD, (left) participated in the first Sarver Heart Center Cardiovascular Science Fair.



Elizabeth Calhoun, PhD, MEd, (left), associate vice president for population health sciences at University of Arizona Health Sciences, explains her research to a physician in training.

INVESTIGATOR AWARDS

2014-2015

Medical researchers often have an abundance of questions; however, the difficulty comes with finding funding to search for the answers. Thanks to the generosity of our donors, the University of Arizona Sarver Heart Center's Investigator Awards Program continues to provide a gateway between these ideas and the proof required for researchers to compete for national grants.

CATEGORY: UNDERGRADUATE/MEDICAL SCHOOL STUDENT AWARDS



Janelle Rodriguez, BS, MS, a first-year medical student, received the **Margarito Chavez Award** for her project, "Understanding a role for ER β on elastase-induced vascular inflammation in cerebral arteries" under the mentorship of **Rayna Gonzales, PhD**, associate professor in the Department of Basic Medical Sciences in

the **UA College of Medicine - Phoenix**. Recent studies have shown that estrogen via estrogen receptor beta (ER β), a subtype of estrogen receptor, may play a protective role in aneurysm progression and development. This study will provide clinically relevant information about ER β 's role in cerebral aneurysm pathogenesis.

CATEGORY: NOVEL RESEARCH PROJECTS IN THE AREA OF CARDIOVASCULAR DISEASE AND MEDICINE



Kwan Lee, MD, Assistant Professor of Medicine in the **Division of Cardiology**, will study "Digital Health Intervention via Mobile Application for Improvement of Patient Compliance and Secondary Cardiovascular Outcomes in Patients Post Percutaneous Coronary Intervention." This award was made possible by **Phil and Bobbie Hanft**, and **J.G.**

Murray. This pilot study will examine the feasibility of using a mobile technologies platform linking patients who recently have undergone coronary stent placement and their caregivers as a prelude to a larger, future randomized trial studying the

effects on prevention of a future heart attack. This also will lay the groundwork to link current electronic medical records with a healthcare app for future outcomes-based research.



Jagdesh Kandala, MD, MPH, third-year cardiovascular disease fellow, received an award made possible by **Frank and Alex Frazer**. In collaboration with cardiologists **Frank Marcus, MD**, Professor Emeritus, and **Mark Friedman, MD**, Clinical Professor of Medicine, he is studying the Valsalva maneuver in heart failure. If you've ever

tried to breathe out while holding your nose with your mouth closed, you've done the Valsalva maneuver (VM). In this study, Dr. Kandala will record blood pressure and heart rate response while patients are blowing forcefully into a tube connected to manometer to measure pressure. Cardiovascular response to VM can provide an accurate estimate of intracardiac filling pressures and has been shown to be accurate, reliable and reproducible. This information may help cardiologists recognize congestion and intervene early, preventing hospitalizations for heart failure.



Aiden Abidov MD, PhD (center), Associate Professor of **Medicine and Radiology**, received an award to study

“Interventricular uncoupling in pulmonary arterial hypertension: development and validation of an MRI-based noninvasive assessment of left and right ventricular function in using invasive hemodynamics and septal strain measurements.” The study will assess the right ventricular geometry changes in patients with pulmonary arterial hypertension, a disease of the pulmonary blood vessels leading to right ventricular failure. Dr. Abidov and his colleagues, **Franz Rischard, DO** (left), Assistant Professor of Medicine, and **Ankit Desai, MD** (right), Assistant Professor of Medicine, are conducting in-depth analysis of existing imaging data to compare a novel noninvasive imaging method with measurements obtained invasively during cardiac catheterization procedures. The noninvasive imaging method may enhance diagnostics and treatment for these patients. This award was made possible by Florence Jaffe, and Mark and Emma Schiffman.

Kapil Lotun MD, Associate Professor of Medicine, received an award made possible by **Doris Griswold**, and **William and Dorothy Shaftner** for the study of “Selective Coronary Hypothermia in Myocardial Infarction.” Advances to limit damage to heart muscle and the brain following a heart attack have focused on shortening “door-to-balloon” time (how quickly an emergency room patient is taken to the catheterization lab to open a blocked artery) and whole-body cooling. Dr. Lotun’s study will investigate the effectiveness of selective and regional cooling in the area of the heart attack. He is collaborating with **Karl B. Kern, MD**, Professor of Medicine, and **Ranjith Shetty, MD**, Assistant Professor of Medicine.

Samantha Harris, PhD, Associate Professor of **Cellular and Molecular Medicine**, will study, “Regulation of Cardiac Myosin Binding Protein-C (cMyBP-C) by Calmodulin.” Mutations in this protein are among the most frequent causes of hypertrophic cardiomyopathy, which leads to heart failure and increases the risk of sudden cardiac arrest. These experiments will provide new basic information regarding novel pathways by which contractile proteins and calcium signaling pathways communicate. Her award was made possible by the following contributors: **Mark and Emma Schiffman, Frank and Alex Frazer, and Irving J. Levinson.**

CATEGORY: PEDIATRIC/CONGENITAL HEART DISEASE AWARDS



Katri Typpo MD, MPH, Assistant Professor of Pediatrics, received the **William “Billy” Gieszl Award** to pursue a study called, “Gut Dysbiosis is a Target to Improve Surgical Outcomes for Infants Born with Congenital Heart Disease.” Intestinal microbiome is emerging as a cause of post-surgery intestinal complications in infants with congenital

heart disease. Dr. Typpo’s goal is to identify methods to improve post-surgical care of these vulnerable patients.

CATEGORY: THE FINLEY AND FLORENCE BROWN ENDOWED RESEARCH AWARD

Christine Henderson, a PhD candidate under the mentorship of **Carol Gregorio, PhD**, Professor of **Cellular and Molecular Medicine** and Director of the **Molecular Cardiovascular Research Program**, was funded to study “CAP2, a novel regulator of thin filament length regulation in the heart.” Greater understanding of thin filament regulatory proteins could be instrumental in designing screening, therapy and, hopefully, repair for heart disease, particularly dilated cardiomyopathy.

Sarah Lehman, a PhD candidate, will use her award to study “In vivo and in silico Modeling of Structural and Functional Effects of Genetic Left Ventricular Non-compaction.” The ultimate goal is to use these two models to predict the primary cause of a genetic cardiomyopathy and track the progression of the mutations to design specific therapeutic interventions. Lehman also received the **Margaret Terry Memorial Research Award**. **Jil C. Tardiff, MD, PhD**, Professor of Medicine and Cellular and Molecular Medicine, is her mentor.

UPDATE FROM 2014-2015 INVESTIGATOR AWARDS



Puneet Raman, first-year medical student at **UA College of Medicine – Phoenix**, was the 2014-2015 recipient of the **Margarito Chavez Award** for undergraduates/medical students. He also works in Dr. Gonzales’ lab and received an award from the Arizona Chapter of the American Physiological Society in the graduate student session for his poster presentation of his research that addressed the effect of palmitate, a saturated fatty acid, on COX-2 activity in human vascular smooth muscle cells from the brain and coronary circulations. He is working on a manuscript to submit for publication.

MEMBER UPDATES



Welcome New Faculty



Jennifer Lynn Cook, MD, has joined the University of Arizona Sarver Heart Center as an Associate Professor of Medicine in the Division of Cardiology at the University of Arizona College of Medicine - Tucson, and director of Advanced Heart Failure, Mechanical Circulatory Support and Transplant Cardiology at Banner – University Medical Center Tucson.

Dr. Cook is board certified in cardiovascular disease and internal medicine. She is a Fellow of the American Heart Association, where she serves on the Leadership Committee for Clinical Cardiology and as well as the Scientific Sessions Program Planning Committee. She is a Fellow of the American College of Cardiology and a member of their Mechanical Circulatory Support Working Group as well as a member of the Cardiovascular Research Foundation's Scientific Advisory Board for High-Risk Patient Angioplasty.

Her clinical research interests include application of clinical guidelines into clinical practice. She has been lead author on American Heart Association Consensus Statements for Mechanical Circulatory Support and Acute Heart Transplant Rejection. She also participates in clinical trials for novel drug therapy to help treat heart failure.

“Dr. Cook’s expertise will help the Sarver Heart Center to build on its legendary history of being a national leader in providing heart failure patients with the fullest range of options and best possible care,” said Nancy K. Sweitzer, MD, PhD, director of the UA Sarver Heart Center and chief of cardiology in the UA College of Medicine – Tucson.

Previously, Dr. Cook was medical director of the ventricular assist device program at Medical University of South Carolina in Charleston.

Following medical school at Southern Illinois University School of Medicine in Springfield, Dr. Cook completed her internal medicine residency at Medical University of South Carolina, and cardiovascular disease and advanced heart failure fellowships at Barnes Jewish Hospital, Washington University School of Medicine in St. Louis.



Brett Colson, PhD, is an Assistant Professor in the Department of Cellular and Molecular Medicine. His research interests include muscle physiology, muscle disease, and heart failure. The primary focus of his current research is to study the cellular and molecular mechanisms underlying cardiac muscle dysfunction that occurs with genetic mutations in myosin binding

protein-C (cMyBP-C), the number one cause of hypertrophic cardiomyopathy and frequently associated with arrhythmias, heart failure and sudden cardiac death.

After earning his PhD in physiology at the University of Wisconsin, Madison, Dr. Colson did his postdoctoral training as a biophysics research associate at University of Minnesota.



Jason H. Karnes, PharmD, PhD, BCPS, is an Assistant Professor in the University of Arizona College of Pharmacy's Department of Pharmacy Practice and Science. His clinical training as a pharmacist, including board certification in pharmacotherapy and research training in personalized medicine, has put him in a strong position to bridge clinical and basic

sciences. He graduated from the University of Florida College of Pharmacy in Gainesville, and continued there to earn his PhD in Clinical Pharmaceutical Sciences followed by postdoctoral research training at Vanderbilt University.

Dr. Karnes' current research interests are in cardiovascular pharmacogenomics, specifically investigating the use of genetic polymorphisms to predict serious toxicities of widely-used cardiovascular drugs. His ultimate career goal is to facilitate personalized medicine to avoid such toxicities, using electronic medical records research, molecular genetics techniques, and prospective clinical studies.

When it comes to important topics at the forefront of heart disease research and education, Sarver Heart Center faculty are there. This was evidenced by significant involvement in the American Heart Association's Scientific Sessions 2015, held in Orlando, Fla., during early November.



The Mechanical Circulatory Support team from l to r: Jennifer Cook, MD, Richard Smith and Edward Betterton lead an interactive simulation session at the American Heart Association Scientific Sessions 2015.

Mechanical Circulatory Support Simulation, a first-of-its-kind educational tool that premiered at the AHA Scientific Sessions, was developed by **Jennifer Cook, MD**, Associate Professor of Medicine at the UA Sarver Heart Center and a member of the AHA educational planning committee, **Richard Smith**, technical director, and **Edward Betterton**, clinical engineer, Artificial Heart Program at Banner University Medical Center - Tucson. The simulation gave physicians an opportunity to discuss complicated cases while exposed to real-time observation and hemodynamic feedback using a unique simulator developed at the University of Arizona. "These sessions allowed physicians to make decisions in complex patients and get immediate feedback about the results, a practical experience with pharmacological and mechanical treatment choices never before offered, and very valuable to practicing physicians and trainees attending the meeting," said Dr. Cook, who directs the Mechanical Circulatory Support Program at Banner - University Medical Center Tucson. She moderated several panels of experts leading interactive discussions of complex heart failure patient scenarios, which included cardiogenic shock and left ventricular assist devices. **Marvin Slepian, MD**, Professor of Medicine and Biomedical Engineering at the UA and Director of the Arizona Center for Accelerated Biomedical Innovation was a panelist.

Nancy Sweitzer, MD, PhD, director of the UA Sarver Heart was awarded an **American Heart Association Cardiovascular Genome-Phenome Study (CVGPS) Discovery Grant**. The grant program is part of the newly formed AHA Institute for Precision Cardiovascular Medicine. CVGPS combines the power of long-term population studies with the precision of molecular analysis to unravel key distinctions between and within subgroups of patients.

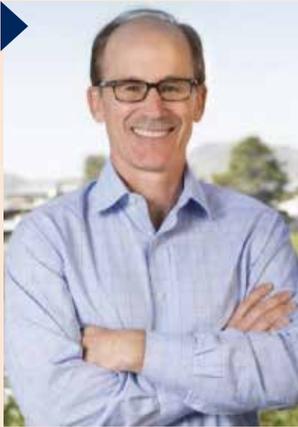
"The Institute is working to create advances in precision cardiovascular care which to this point have been absent at the bedside. AHA's goal is to provide small seed grants that will encourage other organizations to take up the challenging initiative of precision medicine, which is an area of focus at the UA Health Sciences," said Dr. Sweitzer, who is a member of the American Heart Association's Heart Failure and Transplant Committee.

The research project is titled, Large-Scale Discovery of Mechanistic and Predictive Biomarkers in Phenotypically Distinct Groups of Patients with Heart Failure and Preserved Ejection Fraction.

Karl B. Kern, MD, co-director of the UA Sarver Heart Center and Professor of Medicine, began his term as vice chair of the American Heart Association's Emergency Cardiovascular Care Committee. This national committee is charged with writing and producing the CPR guidelines and follow-up educational materials. It also oversees science, system of care and educational subcommittees, and interfaces with the International Liaison Committee for Resuscitation.

Julia Indik, MD, PhD, moderated a poster session on "Treatment of Arrhythmias: Outcomes of Ablation of Atrial Fibrillation." She also served as a judge on the selection committee for the Cournand and Comroe Award, sponsored by the Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation (3CPR), to recognize the research accomplishments of young investigators. She also was thanked by The American College of Cardiology (ACC) and American Heart Association (AHA) for her role in writing the 2015 Guideline for the Management of Adult Patients with Supraventricular Tachycardia.

Beyond the AHA



Parker Antin, PhD, was elected president of the **Federation of American Societies for Experimental Biology** Board of Directors. FASEB serves as the largest non-profit organization of U.S. societies dedicated to biological and medical research. The umbrella organization includes 27 societies and 125,000 members whose main goal is to provide a voice in policy for researchers across the country.

Dr. Antin, Professor of Cellular and Molecular Medicine and Associate Dean of Research for the College of Agriculture and Life Sciences, hopes that as FASEB president he will further the dialogue between researchers and policy makers, allowing for advancements in the medical field. Among his concerns, Dr. Antin hopes to improve the crisis in funding, which has experienced a 25 percent drop in inflation-adjusted dollars since 2004.

“This has had a devastating effect in the world of biomedical research, leaving excellent science unfunded, driving young people into other more predictable careers and creating barriers to development of treatments for many diseases including heart disease,” said Dr. Antin. Through improved funding, he hopes that more support will be available for education of graduates and to support the careers of young scientists, reversing the trend of decline in choice of scientific research as a career in the U.S.

Marvin Slepian, MD, (left) recently was inducted as president of the **International Society for Mechanical Circulatory Support** during its 23rd Annual Meeting in Dubrovnik, Croatia. Also pictured: Uli Steinsiefer (center), immediate past president (professor of biomedical engineering, Helmholtz Institute, University of Aachen); Mark Slaughter MD (right), past president – professor and chief of cardiothoracic surgery, University of Louisville.

Two projects from Dr. Slepian’s research lab were featured in national publications recently.

The National Institute of Biomedical Imaging and Bioengineering News Room highlighted Dr. Slepian’s research that sheds light on platelet properties and the relationship between ventricular assist devices (VADs) and stroke. Although VAD design has improved and unwanted blood clots occur less frequently, the devices still carry significant risks of clot

formation, bleeding and stroke. The Slepian lab has focused on changing platelet properties to reduce risk of platelet activation and dangerous clotting. This work impacts a large number of patients. About 5.1 million people in the United States have heart failure and an estimated 75,000 to 150,000 patients with end-stage heart failure are implanted with VADs, according to the American Heart Association. While this therapy was initially used to “bridge” patients with advanced heart disease to transplant, it is now approved as a “destination” therapy based on the profound improvement in quality of life and the increased life expectancy patients experience with this therapy.

Science Advances published an article on the Slepian lab’s continuing work on stretchable electronic polymer materials. In the paper the group, in collaboration with researchers at the University of Illinois, describes novel, thin, wearable blood flow sensors that utilize the principle of heat dissipation as a means of determining both the speed and direction of underlying blood flow. This technology could be put on the skin or on the surface of organs as patches to assess blood circulation. Applied patches would provide an easier method to assess circulation in patients with blocked arteries, diabetic neuropathy, heart failure and other conditions where impaired blood flow is a factor.



(left) Marv Slepian MD – President
(middle) Uli Steinsiefer – Immediate Past President (Professor of BioMedical Engineering, Helmholtz Institute, University of Aachen)
(right) Mark Slaughter MD – Past President – Professor and Chief of Cardiothoracic Surgery, University of Louisville

OTHER RECOGNITIONS

▶ **The Heart Series**, a program developed by **Charles Katzenberg, MD**, Professor of Clinical Medicine, at the UA Sarver Heart Center, and Edna Silva, RN, cardiac rehabilitation nurse and Tai Chi master, received the “Achievement in Wellness Programs” award from Tucson Local Media’s Influential Health and Medical Leaders Awards. The Heart Series is an intensive education program offered twice a year in Tucson, focused on heart disease prevention and health promotion. For more information or to register for the program, visit heartseries.org.

▶ **Joseph Alpert, MD**, Professor of Medicine, received the “Internal Medicine Excellence in Teaching Award” from the Department of Medicine at the UA College of Medicine – Tucson.



▶ The 2015 graduating fellows from the UA Sarver Heart Center honored **Mark Friedman, MD**, Clinical Professor of Medicine, with the “Outstanding Faculty Award for the Interventional Cardiology Fellowship Program,” and **Prakash Suryanarayana, MD**, Assistant Professor of Clinical Medicine (pictured with award), with the “Outstanding Faculty Award for the Cardiovascular Disease Fellowship Program.”



It was 30 years ago when then-University Medical Center staff teamed up with University of Arizona faculty physicians and scientists to be the

first in the world to successfully use the total artificial heart as a bridge to transplant. In celebration of this milestone, 30-year veterans of this pioneering team (including Joan Wild, Peggy Wiggins and Rich Smith, pictured) gathered with colleagues from the Mechanical Circulatory Support Program in September.



Structural Heart Disease Program Celebrates New Technology

The University of Arizona Structural Heart Disease program continues to grow as it enters its third successful year at the University of Arizona Sarver Heart Center. The program is centered around Transcatheter Aortic Valve Replacement (TAVR), a minimally invasive option for patients with aortic stenosis whose other health conditions make open-heart valve surgery high risk. In this type of aortic stenosis, calcium builds up on the aortic valve and it no longer opens properly, restricting blood flow from the main pumping chamber of the heart to the rest of the body.

In the last three years, the structural heart disease program, led by Kapil Lotun, MD, has performed 107 TAVR procedures. “In the past year, we have seen FDA approval of new valve designs, and we now have more FDA-approved advancements that enable us to match TAVR technology more precisely to patient needs. This includes a self-expandable valve for patients who have previously gone through tissue aortic valve replacements,” said Dr. Lotun, who also directs the Catheterization Laboratory, Interventional Cardiology and Vascular Medicine Programs at the UA Sarver Heart Center. Some of the new technologies offer the options of conscious sedation, making the procedure possible for patients who might not tolerate general anesthesia, and a smaller-size catheter delivery to accommodate patients who previously did not qualify for the procedure because of their small stature.

These advancements, and the skill of the entire TAVR team, continue to improve the treatment options for patients in the Tucson area.

By delivering the latest in treatment innovation, the UA Sarver Heart Center continues

SARVER HEART CENTER WELCOMES CHERYL HOUSE TO THE DEVELOPMENT TEAM



Cheryl House joined the University of Arizona Health Sciences Center as senior director of development in May 2015, and serves as the main point of contact for the UA Sarver Heart Center development team.

Cheryl served as assistant vice chancellor and executive director for the Pima Community College Foundation from 2003-2015. In that capacity she was responsible for the overall administration of the Foundation, including fundraising, financial management and strategic planning, and she was a member of the College's leadership team. Prior to joining the Pima Community College Foundation, Cheryl was director of development for the University of

Arizona College of Pharmacy through the University of Arizona Foundation.

In 2001, the Association of Fundraising Professionals named Cheryl Southern Arizona's Outstanding Fundraising Executive. She earned Certified Fundraising Executive (CFRE) status in 1993.

Cheryl is the immediate past chair of the Board of Directors of the YWCA of Southern Arizona. She is a 2006 alumna of Greater Tucson Leadership.

A native of Columbus, Ohio, Cheryl graduated from Bowling Green State University with a degree in journalism. She can be reached at chouse@email.arizona.edu or **(520) 626-6022**.



Thanks to the Gootter Foundation for once again including our collaborative "Be A Lifesaver" message at the Gootter Grand Slam, featuring the Bryan Brothers vs. the Jensen Brothers in October. Dr. Kwan Lee directed the tennis pros on the 3 Cs of chest-compression-only CPR: Check, Call, Compress. For more free resources on this lifesaving method that improves survival from sudden cardiac arrest, visit <http://heart.arizona.edu/learn-cpr>.

SUPPORT SARVER HEART CENTER AND INCREASE YOUR CASH FLOW

Would you like to support the work at the University of Arizona Sarver Heart Center and increase your cash flow? Consider a charitable gift annuity. With this type of gift, the University of Arizona Foundation agrees to pay you a fixed amount every year for the rest of your life. A large portion of your payments may be tax-free, and you would receive a charitable tax deduction. When the annuity terminates, the final contributions will be donated to the UA Sarver Heart Center.

Here's an example of how a \$100,000 gift annuity would work for Wilma:

WILLMA'S CHARITABLE GIFT ANNUITY AT THE AGE OF 75	
Deduction	\$45,028*
Tax Savings (33% tax rate)	\$14,859
Net Cost of Contribution	\$85,141
Annual Payment	\$5,800
Portion of payment tax-free for life expectancy	\$ 4,431
Taxable portion of payment	\$ 452
Willma's after-tax cash flow	\$ 5,348
After-tax cash flow as a percentage of net cost (\$5,348 / \$85,141)	6.28%

* Deduction and tax-free portion depend on discount rate in effect at the time of the gift.

A gift annuity to the University of Arizona Sarver Heart Center might make sense for you if you answer yes to any of these questions:

- Are you retired or planning on retiring?
- Do you want to increase your spendable income?
- Do you plan to itemize deductions on your tax return?
- Are you concerned about having enough income for the rest of your life?

Payments from an annuity can start immediately. For more information about what your gift annuity rate would be and other charitable estate-planning tools, contact Cheryl House, (520) 626-6022, chouse@email.arizona.edu.

The information contained herein is offered for general informational and educational purposes. The figures cited in the examples and illustrations are accurate at the time of writing and are based on federal law as well as IRS discount rates that change monthly. State law may affect the results illustrated. You should seek the advice of a tax professional for applicability to your own situation.

Yes! I would like to Support the University of Arizona Sarver Heart Center!

Name: _____

Address: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____

Email Address: _____

Enclosed please find my check for \$ _____

Payable to the UA Foundation/Sarver Heart Center

Please use my: Visa MasterCard American Express

UA Foundation will appear as the vendor on your credit card statement

Name (as appears on card): _____

Billing Address: _____

Card Number: _____ Exp.: _____

Signature: _____

Give online at <https://heart.arizona.edu>

I would like to make a gift to support:

Greatest Need

Research Innovation Fund to support the 10-year vision
Special area of focus (optional) _____

Education and Training

Heart Disease and Stroke in Women of Color

Other _____

To learn about other giving options, please call the Development Office at (520) 626-5752 or (877) 518-4638 or email give@ahsc.arizona.edu. All will be greatly appreciated in helping to save lives!

All donations will be greatly appreciated!

My gift is in honor of: memory of:

Please notify: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Your gift to the UA Sarver Heart Center is fully tax-deductible to the extent allowed by the IRS. Please mail this form and donation to Development Office, UA Sarver Heart Center, P.O. Box 245046, Tucson AZ 85724.

REMEMBERING IRENE SARVER: SHE FOLLOWED THE PATH OF HER HEART

Excerpted from BizTucson by Gabrielle Fimbres

As a devoted wife, mother, grand-mother, business partner and tireless community leader, Irene Sarver saw the good in everyone.

“She lived a life of absolute integrity from beginning to end,” said her daughter, Betty Anne Sarver. “She was authentic in every way. She had the C gene – character.”

Sarver, who made an immediate and lasting impact on Tucson after moving here in 1960 from Flint, Mich., with her husband, the late Jack Sarver, died July 6. She was 95.

“She was a show-up person,” Betty Anne said. “You could count on my mother in every way.”

From supporting family businesses to raising money for charities, being politically active to rolling up her sleeves to share her talents with volunteer organizations, Irene Sarver had boundless energy for good causes.

“My mom had a way about her,” said son Robert Sarver, a Phoenix businessman who is the majority owner of the Phoenix Suns. “She positively impacted everybody she came in contact with. She was a mentor to many women in the community who went on to do great things. “My mom really loved Tucson and the community loved her back.”

Sarver had a sharp business mind and was instrumental in the successes of her husband, who was a businessman, banker and hotel developer.

After her husband died in 1980, when her son was a young man, he worried he had lost his business mentor. “I had looked to my dad for business counseling and I thought of my mom as more a mother and caretaker – but the reality is my mom became my biggest business mentor in teaching me the basics of honesty, integrity, work ethic, how to conduct yourself and how to make the right decisions,” he said. “She gave me confidence to take risks. She always believed in me.”

And she believed in the community. She was involved in many



organizations, including Jewish Family and Children’s Services of Southern Arizona, Hadassah, the National Council of Jewish Women, Jewish Federation of Southern Arizona, Congregation Anshei Israel, Temple Emanu-El and Brewster Center Domestic Violence Services.

She was on the first board of the University of Arizona Cancer Center and was a founding member of The Desert Caucus, a single-issue political action committee focused on the U.S.-Israel relationship.

Not long after moving to Tucson, the Sarvers met Donald and Joan Diamond, and their friendship would last the ages. “The Sarvers were one of the best couples I have seen,” Donald Diamond said. “They came as a couple with

commitment to people and the community. It was quite rare to see.”

At the celebration of her life, Robert told of his mom’s devotion to the West, a volunteer-run retail store at River and Craycroft roads that benefits the Brewster Center and other nonprofits. Irene Sarver was a dedicated volunteer, and on days that business was slow, she worried there would be little money to help those in need. So she would start shopping, often being the best customer that day.

Sarver was born in Flint, Mich. She attended the University of Michigan and Michigan State Normal School, where she earned a degree in early elementary education. She taught reading in the poorest neighborhoods in Flint, and would bring apples to her students who came to school hungry.

She met Jack Sarver in 1948 and after they married, they moved to Tucson in 1960. They were married 32 years before Jack’s death from heart disease. In addition to Robert and Betty Anne, she is survived by daughter Ellen Dolgen as well as her grandchildren, great-children and her brother, Jack Magidsohn.

“She followed the path of her heart, and her heart was enormous,” Betty Anne said.

WE'VE GOT THE BEAT:

An Update on Atrial Fibrillation

In October, UA Sarver Heart Center cardiologists provided an update on prevention, medication management, procedures and genetic research related to atrial fibrillation. This is the most common heart rhythm disorder, affecting nearly 3 million people in the United States.

Charles Katzenberg, MD, Professor of Clinical Medicine at the UA Sarver Heart Center, discussed lifestyle and atrial fibrillation. He said many of the risk factors for a-fib are similar to those for cardiovascular disease, cancer and stroke. These include high blood pressure, obesity, lack of exercise, stress, smoking, chronic obstructive pulmonary disease (COPD), diabetes, and the only risk factor you can't control, age.

He advised people to take these steps to reduce controllable a-fib risks:

- Exercise 30 minutes a day, five days a week (150 minutes a week).
- Be aware of stress triggers which can occur at home or work, or be related to finances, depression, loss, or lack of control.
- Aggressively change your diet toward plant based as much as possible. For people with diabetes, this can lower your blood-sugar levels by 50 percent.
- If you have hyperthyroidism, ask your doctor to check for a-fib.
- Seek help for sleep apnea, which disrupts your normal respiratory pattern during sleep.
- Don't abuse alcohol. This means no more than one or two drinks a day.



Edna Silva, RN, cardiac rehabilitation nurse and founder of the T'ai Chi Center in Tucson, ended the program with a relaxing tai chi session on the plaza outside DuVal Auditorium. For information on tai chi, visit ednasilva.com.

If you have recurring episodes of atrial fibrillation, monitor your intake of possible triggers, including caffeine (coffee, tea, soda, chocolate) and alcohol.

If you're on warfarin, you don't have to avoid green vegetables that are rich in Vitamin K; just try to eat them regularly, for example one to two servings a day. Eating these nutrients regularly will not interfere with your INR monitoring.

Julia Indik, MD, PhD, Professor of Medicine, described several unique a-fib patients and emphasized each required individualized treatments based on their symptoms and stroke risks. All patients need to know their CHADS-VASc score to know their risk.

Peter Ott, MD, Associate Professor of Clinical Medicine, provided an update on several procedures to control heart rhythm, including pacemakers and ablation. He covered methods to tie off the left atrial appendage, a source for blood clots that could lead to strokes. He emphasized that

all medications and procedures work better if people address their lifestyle risk factors.

Nancy K. Sweitzer, MD, PhD, who discussed genetic research to identify mutations that could increase a-fib risks, told the audience to go to these resources for more information:

- American College of Cardiology: the new AFib Shared Decision Making Tool, designed to help guide treatment discussions around anticoagulation for patients with non-valvular AFib.
- ACC's Cardiosmart www.cardiosmart.org for helpful guides, tools and patient information.
- The Sarver Heart Center website: heart.arizona.edu/Heart-rhythm for more information and heart.arizona.edu/clinical-research to learn about clinical research studies for which you may be eligible and to complete a Cardiology Research Registry Information Form.



Nancy K. Sweitzer, MD, PhD, (left) leads a question-and-answer session with panelists Charles Katzenberg, MD, Peter Ott, MD, and Julia Indik, MD, PhD, during "We've Got the Beat: An Update on Atrial Fibrillation."



**SARVER
HEART
CENTER**

The University of Arizona
Sarver Heart Center
PO Box 245046
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UPCOMING COMMUNITY EDUCATION PROGRAMS



GREEN VALLEY LECTURES

Thursday, Dec. 17, 2015 - How to Avoid a Heart Attack

Charles Katzenberg, MD, clinical professor of medicine at the University of Arizona Sarver Heart Center, emphasizes the skills and behaviors that will lead to optimum health, resulting in improvements in both quality and length of life.

Thursday, Jan. 21, 2016 - Improving Sudden Cardiac Survival and Outcomes

Karl B. Kern, MD, co-director and the *Gordon A. Ewy, MD Distinguished Endowed Chair of Cardiovascular Medicine* at the University of Arizona Sarver Heart Center, presents an update on sudden cardiac arrest survival in Arizona and around the world, with a focus on his new research.

Wednesday, Feb. 17, 2016 - An Update on Options for Treating Atrial Fibrillation

Peter Ott, MD, associate professor of clinical medicine and the *Peter Ott, MD, Endowed Chair of Electrophysiology* at the University of Arizona Sarver Heart Center, discusses atrial fibrillation and stroke therapies, anti-coagulation medicine and new options for patients who can't tolerate anti-coagulants. **Note Time, Date & Location:** This lecture is scheduled for Wednesday at 10 a.m. at West Center, 1111 S Via Arcoiris, Green Valley, AZ 85614

Thursday, March 17, 2016 - Understanding Advanced Heart Disease

Elizabeth Juneman, MD, associate professor of medicine and director of outpatient cardiology at the University of Arizona Sarver Heart Center, will discuss the risk factors and symptoms of heart failure as well as lifestyle modifications and new therapies available for the treatment of heart failure.

Free and open to the public. Presentations are held at 10 a.m. at Canoa Hills Social Center, 3660 S. Camino del Sol, Green Valley *unless otherwise noted*. No reservation required. Refreshments provided.

For more information, please visit our website: heart.arizona.edu; email us at heart@email.arizona.edu; or call 520-626-2901.



Save the Date!

Healthy Heart Day – Saturday, April 9, 2016

Watch for details on our website: heart.arizona.edu and click on "Events."



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