

Heart News for You

Get Educated to Prevent Sudden Cardiac Death

By Gordon A. Ewy, MD

No one likes to hear, think, or read about death, except how to prevent it. The bottom line of this article is that in adults, most unexpected sudden deaths are preventable as most are due to coronary artery disease—the same disease that causes heart attacks. In patients under the age of 30, a number of inherited or congenital heart disorders can lead to sudden death—and the physicians and scientists of the Sarver Heart Center are researching several of these conditions.

Most Americans die of cardiovascular disease—heart disease and stroke. Unfortunately the first sign of cardiovascular disease is often the last, as the first sign is often sudden death. After the age of 40, an American male has a one-in-eight chance of having sudden cardiac death. Since sudden cardiac arrest (stoppage of heart function) strikes adults during the sixth decade on average, many in the prime of their lives are claimed. But sudden cardiac death (SCD) at any age is a tragedy.

Since sudden cardiac arrest is unexpected,



UA College of Medicine students who are members of the REACT (Resuscitation Education and CPR Training) Group, collaborate with UA Sarver Heart Center to train the public.

it usually happens outside the hospital. It occurs when the heart suddenly stops pumping blood. The official term for this condition is out-of-hospital cardiac arrest (OHCA). It is a major public health problem—every three days it takes the lives of as many Americans as were killed in the 9/11 World Trade Center attack. In Arizona, an average of 15 OHCA's occur every day.

The prevention and treatment of cardiac arrest are major research, educational and patient-care efforts of the physician scientists and research scientists of the University of Arizona Sarver Heart Center.

What causes sudden cardiac arrest? It is most often caused by the sudden onset of an abnormal heart rhythm called ventricular fibrillation (VF). In a normal heart beat, all of the muscle fibers of the ventricles (the bottom or pumping chambers of the heart) are contracting together like a well-functioning team to pump blood to the brain and the rest of the body. They relax together to fill the heart and contract together for the

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...from the Director

What is **The University of Arizona Sarver Heart Center**?

The mandate of all state land-grant universities is to improve the quality of life of the citizens of that state with discoveries that can be exported to the state, the United States, and ultimately the rest of the world. Since cardiovascular diseases are the leading causes of death and disability in Arizona, the United States, and most industrialized nations of the world, our mission is critical to that of the University of Arizona. It is a tall order!

Our vision is “**a future free of heart disease, stroke and other vascular diseases**,” a vision that can be accomplished only through the academic pillars of research (creating knowledge), education (sharing knowledge) and patient care (using knowledge). This vision can best be accomplished by bringing together physician scientists from multiple academic departments, including medicine, surgery, emergency medicine, anesthesiology, physiology, basic science research and statistics, who partner with the community.

In research, the Sarver Heart Center has been a major contributor in the field of cardiac transplantation, artificial heart technologies, treatment of arrhythmias and the prevention and treatment of sudden cardiac arrest (see “Heart News for You” in this issue). Our advances in resuscitation science for both bystanders (chest compression only CPR) and advanced resuscitation techniques for paramedics and physicians already have saved innumerable lives. But significant scientific advances are not made overnight—most often it takes long hours in a basic research laboratory with many blind alleys before a significant advance is made. And even when made, it often takes years to change an entrenched paradigm.

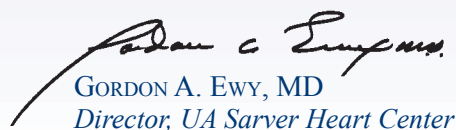
In education, the Sarver Heart Center is engaged in medical education at many levels, including that of our future primary care physicians, scientists and nurses, and our specialty training for cardiologists and cardiothoracic and vascular surgeons. We provide post-graduate education as physicians who graduated years ago must stay abreast of scientific advances, predominantly those made in academic medicine. We also are convinced that public education is as important as student and physician education. To decrease the mortality of patients with cardiovascular disease, we also must inform the public; thus, our

Sarver Heart Center Newsletter with “Heart News for You,” our heart-disease-in-women programs, Green Valley lecture series (now in its 25th year), “Healthy Heart” program (coming up February 4) and “mini-medical school” programs in cardiology in Yuma, Prescott and the Phoenix area.

In patient care, which is where physicians’ hearts are or we would not have chosen this vocation, the advances that have resulted in decreasing cardiovascular mortality have been very gratifying. In the 1970s, 40 percent of us in the United States died of cardiovascular disease. This mortality has decreased 2 percent every decade since, and advances in cardiovascular disease are major contributors to the average six years of increased survival that we have enjoyed since. While advances, first in cardiac surgery and then in interventional cardiology, have been critically important to those needing them, I think the greatest advance has been in preventing cardiovascular disease by treating the major risk factors identified decades ago: smoking, high blood pressure and abnormal lipids. We all know that genetics is the major risk, and while enormous efforts have been placed on accurately detecting risk by genetic analysis, to date, these results have been disappointing. We do know that if cardiovascular disease runs in your family—grandparents, parents and siblings—your risk is greater. See *Top 10 Tips to Prevent Heart Disease & Stroke* in issue 60, www.heart.arizona.edu.

The future: We are committed to continuing our traditions of the past while meeting the challenges of the future. While approaches will continue to evolve, the information will be easier to obtain. The good and bad news is that because of enhanced electronic communications, we get correct information as well as misinformation—faster and faster!

One of the educational goals of the Sarver Heart Center is to provide up-to-date, accurate information about the prevention and treatment of heart disease, stroke and vascular diseases to the public. Attend our upcoming “Healthy Heart Conference” and bring your questions—our format will emphasize adequate time for responses to your questions. (See page 12 for more information.)


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Director, UA Sarver Heart Center

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next heartbeat. In contrast with VF, the muscle fibers of the ventricles suddenly no longer work together as a team to pump the blood to the brain and other parts of the body. Rather some of these muscle fibers contract while others relax. The result is that the heart suddenly loses its pumping action, the blood pressure suddenly falls, the blood flow to the brain stops and the patient collapses.

If one is wearing an electrocardiographic (ECG) monitor during an OHCA, the regular tall, narrow spikes of the electrocardiogram that signal the synchronous contraction of the ventricles is suddenly replaced by a distinctive rapid wavy line, characteristic of ventricular fibrillation (Figure below).

Definitive therapy of ventricular fibrillation (VF) is a shock by a defibrillator, which causes all of the muscle fibers to contract at the same time and restore regular rhythm and thus blood pressure. Defibrillators, at one time were found only in hospitals (and could be used only by doctors and later by nurses in coronary care units). Next they were placed in ambulances (for use only by paramedics). Now, automated external defibrillators, or AEDs, are in most airports, schools, shopping malls and at athletic events—locations where a large number of people tend to congregate.

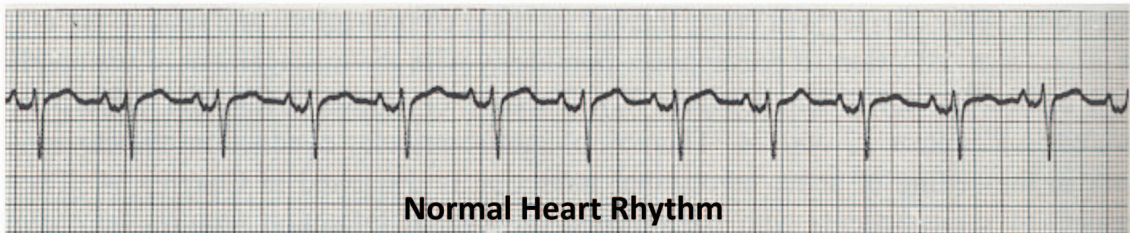
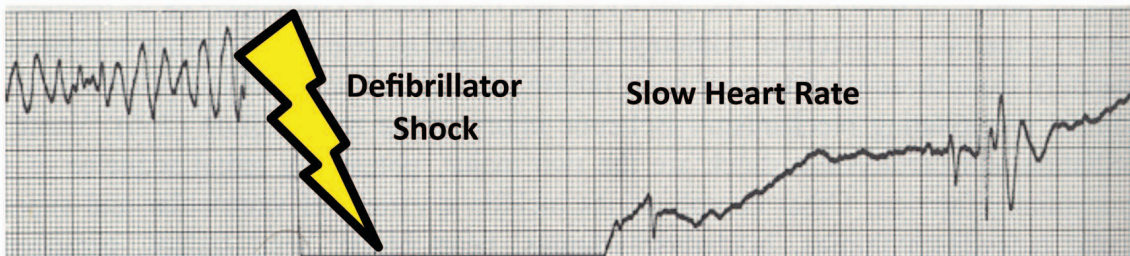
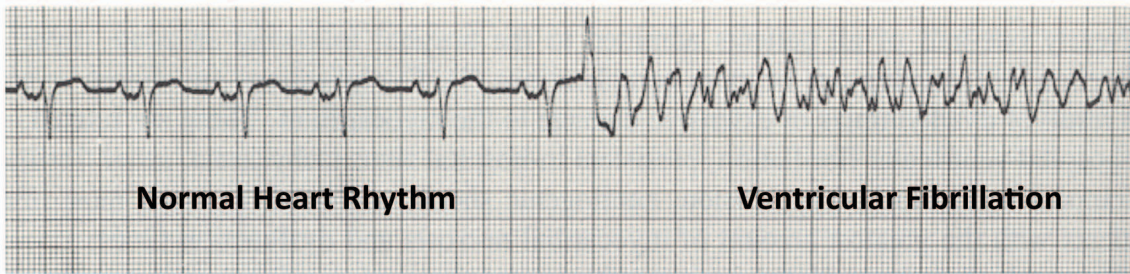
They are intended to be used by the general public. They are so automated that when you turn them on, they tell you what to do. Even middle school children have been taught to use them.

So, cardiac arrest is a witnessed (seen or heard), sudden (unexpected) collapse of an individual who is not responsive. These individuals often have an abnormal breathing pattern—gasping, snoring or a gurgling noise. This gasping is at a slow rate—one to two per minute and only lasts three to four minutes. It is important to recognize that gasping is an early sign of cardiac arrest—and if you begin chest compressions in such individuals, they are more likely to continue to gasp—a sign that you are doing a good job! Do not stop chest compressions when someone is gasping.

If a person suddenly collapses, first check for responsiveness, then call 911 and start continuous chest compressions. If you are in an area where an AED is known or likely to be available, holler for someone to “get an AED.” When the AED arrives, turn it on and follow the simple instructions. After an AED delivers a shock, it changes the electrocardiogram of VF and the helter-skelter contractions of the pumping chambers of the heart return to synchronous contractions. If an AED is not available, continue

chest compressions until the firefighters/paramedics arrive. They will take over chest compressions and use their defibrillator to restore regular rhythm.

Why has the UA Sarver Heart Center Resuscitation Research Group focused on sudden cardiac arrest? In spite of decades of national resuscitation guidelines for treatment of OHCA, the survival rates were low and were



unchanged for almost three decades (1980-2008). With cardiocerebral resuscitation, the “new CPR,” the survival rate of patients in Arizona with witnessed arrest has increased dramatically. Survival of patients with cardiac arrest due to drowning, drug overdose or breathing problems remains very poor and only slightly improved. For these individuals, we have always and continue to recommend “Guidelines” cardiopulmonary resuscitation—that is, 30 chest compressions and two rescue breaths. Nevertheless, our analysis has shown that even in these cases, “something is better than nothing.”

As noted above, the majority of cardiac arrests in individuals over the age of 40 is caused by the same thing that causes heart attacks—heart muscle damage due to a blockage of a coronary artery—and, therefore, is preventable. Many of these patients will have chest discomfort prior to cardiac arrest. So, if you experience chest pain or severe shortness of breath, do not drive to the hospital (or waste time coughing). Call 911 and have the paramedics take you to the nearest hospital.

Almost 10 percent of OHCA's are witnessed by paramedics who were called because the patient had chest pains or other symptoms of a heart attack. This emphasizes the need to call 911. Don't wait if you have chest discomfort, weakness or shortness of breath!

The majority of OHCA's can be prevented by aggressive treatment of the risk factors for coronary artery disease. (See previous issues of the Sarver Heart Center

Newsletters, available online under “News & Information” at <http://www.heart.arizona.edu>; especially “Top 10 Tips” in issue 60.)

While coronary artery disease is by far the most common cause of OHCA over age 40, younger individuals and athletes are affected by other causes. Most of these are due to inherited abnormalities, either electrical (abnormal electrocardiograms which predispose a person to ventricular fibrillation) or abnormal heart muscle development, where the muscle of the ventricles becomes either too thick (hypertrophic cardiomyopathy) or too weak (dilated cardiomyopathy). Others have too much fat and scar tissue in the heart muscle (arrhythmogenic right ventricular cardiomyopathy) or congenital heart defects such as abnormalities of the coronary arteries, the vessels which supply

the heart with blood. The UA Sarver Heart Center has experts in each of these areas or is recruiting new faculty members to fill any gaps.

Out-of-hospital cardiac arrest is a preventable and treatable public health problem. The UA Sarver Heart Center, in cooperation with our partners, such as the Steven M. Gootter Foundation, the Arizona statewide Save Hearts in Arizona Registry and Education (SHARE) program (www.azshare.gov) and support from contributors like you, is attacking this major public health problem. We need you to be a partner as well. Visit www.heart.arizona.edu (Be A Lifesaver) to see our schedule of training sessions and our six-minute training video and support our research programs designed to prevent or treat this major public health problem. ♥



Celebrating 735 Lives Saved in Arizona and Counting!

Together they have changed resuscitation protocols in Arizona for bystanders, emergency responders and hospitals. SHARE has counted at least 735 lives saved in Arizona since the “new CPR” was instituted in 2004. Leaders of the UA Sarver Heart Center Resuscitation Research Group celebrating the progress include (left to right) Bentley J. Bobrow, MD, medical director of the Bureau of Emergency Medical Services & Trauma System at the Arizona Department of Health Services, Gordon A. Ewy, MD, director of the Sarver Heart Center, and Karl B. Kern, MD, chair of the Resuscitation Research Group and chief of cardiology at the UA College of Medicine.

More Life-Saving Initiatives



REACT Group Spreads the Word

The Resuscitation Education and CPR Training (REACT) Group consists of medical students from the University of Arizona, dedicated to serving their community through education and outreach. Founded in 2009 in Tucson, these medical students collaborated with members of the Sarver Heart Center Resuscitation Research Group to create a curriculum and presentation to educate the public about chest-compression-only CPR. Now, more than 100 students are involved with REACT in Tucson and Phoenix. In Tucson, REACT members hold independent training events

by request and pair with the UA Sarver Heart Center to orchestrate monthly training sessions in DuVal Auditorium at The University of Arizona Medical Center. In Phoenix, the REACT group works closely with the Arizona Department of Health Services on community education programs.

For information on training sessions, contact Carol Gibbs in Phoenix at 480-322-1129 or cgibbs@shc.arizona.edu. In Tucson, contact Melissa Ludgate at 520-626-2419 or mludgate@shc.arizona.edu. ♥

Student EMS Improving UA Tucson Campus Emergency Response

University of Arizona students on the Tucson campus have established a service organization that will focus on both emergency response and education. These students are EMT-Basic and Cardiopulmonary Resuscitation (CPR) certified and will be first responders to medical incidents on campus, alongside the UA Police Department. Of course, these students are trained to use

chest-compression-only CPR if they encounter a primary cardiac arrest on campus. These student leaders have committed themselves to training other students and faculty in chest-compression-only CPR and basics about emergency care. They also are working to ensure that automated external defibrillator locations are known to the student body. ♥



UA Student EMS founders (from left to right) Brandon Murphy, Melissa Ludgate and Justin Friedenthal.

Are Defibrillators Properly Maintained?



Although sudden cardiac arrest is one of the leading causes of death in the United States, studies conducted by the UA Sarver Heart Center have shown that immediate implementation of chest-compression-only CPR has more than doubled survival rates. Equally compelling is the fact

that the use of an AED in a cardiac emergency decreases the chance of neurological damage. Owning an AED is an important step towards saving lives in your community. However, ensuring maintenance of this equipment and training staff members are critical steps to perpetuating a safe environment for yourself and others.

If you have an AED, please ask yourself these questions: are the AEDs being maintained properly and what barriers are in place that could prevent bystanders from wanting to use an AED? For more information or training, please contact Melissa Ludgate at 520-626-2419 or mludgate@shc.arizona.edu. ♥

Welcome Cardiothoracic Surgeons



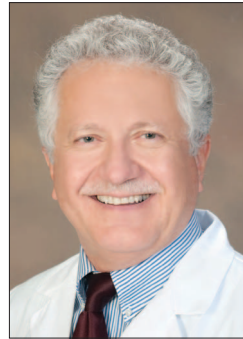
Jess L. Thompson, MD, a cardiothoracic surgeon specializing in the repair of congenital heart defects, has joined the **University of Arizona Department of Surgery** as assistant professor in the Division of Cardiothoracic Surgery.

A fourth-generation Arizona native, Dr. Thompson comes to the UA from Texas Children's Hospital in Houston, where he completed a fellowship in congenital heart surgery. His clinical expertise includes repair of complex congenital heart disease in children and adults.

Dr. Thompson attended medical school at the University of Southern California, Los Angeles, Keck School of Medicine. He completed his general surgery residency training and cardiothoracic training at the Mayo Clinic in Rochester, Minn.

While at Mayo Clinic, Dr. Thompson participated in a National Institutes of Health Clinical Investigator Program, receiving a master's degree in biomedical sciences and clinical research. His studies centered on complex heart-valve disease with a specific emphasis on novel anticoagulants and anticoagulation strategies, as well as minimally invasive heart-valve repair and

replacement techniques. Dr. Thompson has published his research in scientific journals and presented at both national and international meetings. ♥



Allen Raczkowski, MD, assistant professor of surgery, joined the Division of Cardiothoracic Surgery as part of the minimally invasive heart surgery group. Prior to joining the faculty in Tucson, he performed hundreds of robot-assisted heart surgeries in Phoenix.

Dr. Raczkowski's practice focuses on robot-assisted heart valve surgery, such as mitral valve repair and replacement and robot-assisted aortic valve surgery. He was the first surgeon in the world to use a robot to do non-arrested mitral repairs on a human. During this procedure, the heart continues to beat while the valve is repaired. In Arizona, he was the first to do endoscopic robotic mitral valve replacement and repairs, and the first to do a surgical procedure to treat atrial fibrillation. Board certified in surgery and thoracic surgery, Dr. Raczkowski completed his general surgery residency and cardiothoracic surgery fellowship at the University of Wisconsin in Madison. ♥

Stroke Support Group Available

Sharing similar problems helps stroke survivors, caregivers and their family members learn to live with changes in their lives. Stroke support groups offer chances to share concerns, lift each other up, unite around common experiences and find positive solutions.

Leslie Ritter, RN, PhD, the *William M. Feinberg, MD, Endowed Chair in Stroke Research* at the UA Sarver Heart Center and coordinator of the University of Arizona Medical Center Primary Stroke Center, has launched a new stroke support group for stroke survivors and caregivers who live in Tucson and surrounding communities. The group meets every second Monday of the month at 11:30 am in the Vine Avenue Annex, 1125 N. Vine, on the UA Campus in Tucson. A light lunch is served and parking is available immediately adjacent to the building (free) or in the Highland Garage (fee for use), which is north of the Vine Annex. To RSVP, please call 520-626-2901. A support group also is being planned for Green Valley.

PROMISE Trial Evaluating Tests to Determine Chest Pain Causes

More than 10 million Americans develop chest pain each year, often requiring testing to determine if heart disease is to blame. However, tests can be imprecise and their costs are rising faster than any other area of health care.

The PROMISE study (**PRO**spective **M**ulticenter **I**maging Study for **E**valuation of Chest Pain) is comparing two types of non-invasive testing—functional and anatomic—to determine which might be better at finding out which patients have heart disease and require more testing and treatment.

You could be having a stroke if you experience:

- **Sudden** numbness or weakness of the face, arm or leg
- **Sudden** confusion, or trouble speaking or understanding
- **Sudden** trouble walking, dizziness, loss of balance or coordination
- **Sudden** severe headache with no known cause

You are at greater risk of having a stroke if you:

- Have atrial fibrillation
- Have high blood pressure
- Smoke cigarettes
- Have high cholesterol
- Have diabetes
- Have heart or blood vessel disease
- Are age 55 or older
- Have had a stroke or TIA
- Have sickle cell disease
- Have a high red blood cell count
- Take birth control medication



Dr. Aiden Abidov, the C. Leonard Pfeiffer Chair in Cardiology at the UA Sarver Heart Center, focuses on basic and clinical research that leads to better treatments for patients with heart and vascular disease. He is the principal investigator in Tucson for the PROMISE clinical trial.

The *functional tests* include exercise electrocardiography (ECG) on a treadmill, stress ECG and stress nuclear imaging. The work load of the heart is increased by exercise or drugs to see if abnormalities or symptoms related to blockages in the coronary arteries might happen during the test.

The *anatomic test* included in PROMISE is coronary computer tomographic (CT) angiography, which shows if blockages are present in the coronary arteries.

This NIH-funded trial has 134 active sites across North America and will enroll 10,000 chest pain patients in the next two years. **Aiden Abidov, MD, PhD**, is the principal investigator in Tucson at the UA Sarver Heart Center. The goals are to show which type of test is the most clinically effective and cost-effective in people without a history of heart disease, to help shape health policy for the millions of people referred for stress testing each year, and to address rising health care costs. For more information, please contact Denise Bruck at 520-626-1933 or dbruck@shc.arizona.edu. ♥

New Kind of Science is Advancing Prevention and Treatment of Heart Disease



Fernando D. Martinez, MD, director of the BIO5 Institute and head of the Arizona Respiratory Center; leads the UA Clinical and Translational Sciences Institute.

University of Arizona scientists routinely make discoveries that hold the potential for new drugs, medical treatments or medical devices. Because medical doctors and research scientists often speak different languages—even when they study the same diseases—it can take years for such a discovery to make it from the laboratory “bench” to the “bedside” in the form of a new treatment that benefits patients.

The UA has a new science initiative under way to accelerate its bench-to-bedside science and position itself in a more competitive place to acquire translational research funding from the National Institutes of Health. The Clinical and Translational Sciences Institute (CTSI), which provides the groundwork for therapeutic medical advances at the UA, has selected

cardiovascular disease and the UA Sarver Heart Center as one of its priority areas for support.

“Our priorities are based on leveraging our current strengths, particularly in fields that hold great interest for the next 50 years in terms of preventing and treating important diseases that affect the United States,” says Fernando D. Martinez, MD, who leads the translational institute’s efforts. He also is director of the BIO5 Institute and head of the Arizona Respiratory Center.

“One of the UA’s research strengths is in heart disease, especially sudden cardiac arrest. This combined with the support received from the Gootter Foundation, makes the Sarver Heart Center very competitive when it comes to committing university resources to recruit critically important translational researchers to the UA,” says Dr. Martinez.

While the Sarver Heart Center is a leader in resuscitation research that has led to doubling a person’s chance of survival from sudden cardiac arrest, we still don’t know who will experience sudden death, despite years of strong basic-science research focused on heart development and function.

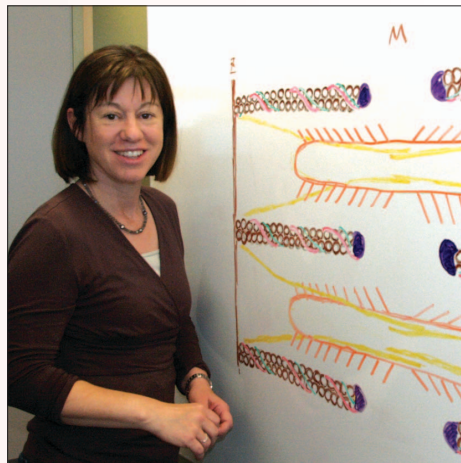
By recruiting physician scientists who are considered renowned researchers in sudden cardiac arrest, the Sarver Heart Center will be moving to a new level that includes the missing link of translational medicine. “In this case, we will have someone who can provide a bridge

between a physician researcher in the center and the great basic-science researchers,” says Dr. Martinez.

“Ideally we will find ways to predict who is likely to have sudden death and we’ll develop preventive devices or treatments. The ultimate goal would be to make the need for the new CPR obsolete because we will learn how to predict and prevent sudden cardiac arrest,” adds Dr. Martinez.

“Translational medicine makes research more efficient,” says Carol Gregorio, PhD, director of the UA College of Medicine’s Molecular Cardiovascular Research Program and a co-director of the Sarver Heart Center.

With the current model, health care practitioners have first-hand knowledge about their patients’ concerns and how current treatments affect them. Physicians often struggle with balancing clinical obligations and pursuing efficient, outcome-oriented lab research. The



Carol Gregorio, PhD, directs the UA College of Medicine’s Molecular Cardiovascular Research Program.

CTSI provides opportunities for practitioners to interact with scientists engaging in basic research.

“The CTSI provides an environment for an exciting, new kind of science, which you could call use-inspired research,” says Dr. Martinez. Physicians who want to be able to apply the most recent findings in their patient care have to have a much deeper understanding of molecular biology than has been required in a traditional clinical setting.

The UA Sarver Heart Center is obtaining CTSI support to recruit another physician scientist with research strengths in developmental cardiovascular biology and the molecular and genetic basis of muscle disease. Under the leadership of Dr. Gregorio, the Center is seeking a tenure-track scientist who will develop or bring an independent and sustainable research program in the field of integrative and translational cardiovascular research.

In the meantime, knowing how to respond if you witness a sudden cardiac arrest is the best prevention we have against sudden death, so visit the “Be A Lifesaver” page on the website, www.heart.arizona.edu for information on upcoming training sessions and to view a six-minute training video. ♥

Congratulations

Congratulations to **Wanda Moore**, recipient of the 2011 *Mary Anne Fay Heart Health Advocate of the Year Award*

from the UA Sarver Heart Center. The award was established to honor the advocacy and leadership of Mary Anne Fay, a Sarver Heart Center Advisory Board member and chair of the Women’s Heart Health Education Committee. It was given to Wanda this year to recognize her energetic and enthusiastic outreach and advocacy for all women, especially women of color. Wanda, who also serves on the advisory board and women’s education committee, leads the *Community Coalition for Heart Health Education for Women of Color* (Minority Outreach Program). She is pictured with Dr. Gordon A. Ewy, who presented the award in October at the *Heart of the Matter Luncheon*, which focuses on women’s heart health issues. ♥



Congratulations to **Leslie Ritter, PhD, RN, FAAN**, who received the *Extraordinary Faculty Award* from the UA College of Nursing for bringing “honor and distinction



to the UA College of Nursing through her work with nursing, neurosciences, physiology and medicine at the UA.” Dr. Ritter has earned multiple awards and honors, including the August Krogh Young Investigator Award in 1995, the Presidential Early Career Award for Scientists and Engineers in 2000 and most recently, the UA Sarver Heart Center’s William M. Feinberg Endowed Chair for Stroke Research. She led efforts to establish The University of Arizona Medical Center as the first certified Primary Stroke Center in Tucson and Southern Arizona. She provides extensive professional development opportunities to graduate and undergraduate students by catalyzing connections with alumni and faculty members and engages with various communities to promote knowledge about preventing and managing stroke. ♥

Congratulations to **Marvin J. Slepian, MD**, UA Sarver Heart Center member and chairman of SynCardia Systems, Inc. The company was founded based on technology that was researched and developed by Dr. Jack Copeland and Richard Smith, a biomedical engineer at the University of Arizona Medical Center. Syncardia manufactures the FDA-approved temporary total artificial heart and was named “Arizona Bioscience Company of the Year” by the Arizona BioIndustry Association (AZBio). It also has been inducted into the World Technology Network (WTN) as a new corporate member. Membership occurs through the annual awards process, in which individuals and companies are selected via the judgment of the current WTN fellows. SynCardia was selected as one of six finalists for the 2011 World Technology Award in Health & Medicine, presented in association with TIME, Fortune, CNN, Science/AAAS and Technology Review. ♥





Generous Bequest Funds Cardiovascular Research

“Mom and Ed were a wonderful couple,” says Sharon Seekins, the daughter of Virginia Madden. “They met through their church in Sierra Vista. We were thrilled when they married,” she explains. Virginia and Edward “Ed” Madden had both lost two previous spouses to cancer and heart disease, so finding love a third time was something a bit unexpected.

Ed, a retired postal worker, had saved throughout his life, though he was always a generous man when it came to causes he believed in, including the University of Arizona Sarver Heart Center. Heart disease played a role in the deaths of his first and second wives. These losses led him to make a generous provision through his estate for the UA Sarver Heart Center.

Growing up in New York, Ed never drove and always used some form of public transportation. This didn't change when he moved to Sierra Vista in 1980. In fact, it was because he didn't drive that he met Virginia. “Mom was a volunteer driver for their church and Ed was one of her passengers.” From their friendship grew romance and eventually marriage. “Much like Ed, Mom had been widowed twice before, so for them to find each other was wonderful,” says Sharon.

Before Ed passed away in 2007, Virginia and he would travel and spend time with children, grandchildren and great grandchildren. Just after Ed's

passing, Virginia wrote to the UA Sarver Heart Center to say simply that she and her children had discussed it and although Ed had changed his will to provide for her, she would be honoring Ed's wishes by ensuring that his estate passed on to the Center, just as he had intended.

“This story behind this gift is wonderful,” says Dr. Gordon A. Ewy. “Mr. and Mrs. Madden's hope to make a difference in the lives of those suffering from cardiovascular disease will be realized through critical research funded by the *Edward and Virginia Madden Investigator Award*. We also are grateful to Mrs. Madden's daughter, Sharon, for helping us to get to know the Maddens and why this gift meant so much to them.”

The research award recipient for 2011-2012 is **Maria I. Altbach, PhD**, who is working with **Aiden Abidov, MD, PhD**, to study a magnetic resonance imaging (MRI) technique that may be a non-invasive way for doctors to diagnose whether a patient with chest pains is at risk of developing a heart attack. If successful, this project could alter the management of patients suspected of acute coronary syndrome as a result of atherosclerotic disease.

If you would like to make a provision in your estate to benefit the Sarver Heart Center, please call the Office of Development at 520-626-4146. ♥

The Gootter Foundation: The Little Foundation That Could

Success for the **Steven M. Gootter Foundation** is bittersweet. Established in 2005, the Foundation is named for a beloved son, father, brother, husband and friend. “We wish we never would have had to establish this Foundation. But when we lost Steve to sudden cardiac arrest, we had to do something—and we hope that the work of the foundation will prevent other families from having a loved one stolen away too soon,” says Steven's sister, Claudine Messing.

The Gootter Foundation has found incredible success in raising awareness and significant support toward preventing sudden cardiac arrest. “Two things still surprise me—the number of people that my son touched in some way and the number of families that have similar stories to ours,” says Steve's mother, Paulette Gootter. It is perhaps because of these two observations and the dedication of the all-volunteer Foundation that in six years more than \$1.5 million has been raised to support the Sarver Heart Center's research.

The Gootter Foundation has made 12 research awards to faculty with innovative and novel ideas to prevent sudden cardiac arrest and is working to establish an endowed chair to recruit a new faculty member focused on this issue. The Foundation also has provided

life-saving AEDs to more than 40 schools, churches, synagogues and nonprofit organizations. Through their partnership with the Sarver

Heart Center, those sites also have received training on chest-compression-only CPR and how to properly maintain and use an AED.

As the Gootter Foundation enters its seventh year, the Sarver Heart Center is proud to celebrate and share a few milestones. ♥

2005

Steven M. Gootter Foundation established.

First Gootter Investigator Award given to **Julia Indik, MD, PhD**, for her work on improving how AEDs work.

2006

First Annual Steven M. Gootter Foundation Gala Dinner and Gootter Grand Slam hosted. More than 80 players participate in the tennis tournament and 250 guests gather to celebrate Steve's memory.

2007

Gootter Foundation presents a check to the Sarver Heart Center for \$250,000 and establishes an endowment that one day will be the Steven M. Gootter Foundation Endowed Chair for the Prevention and Treatment of Sudden Cardiac Arrest.

Three research awards are given to **Mohamad Azhar, PhD, Carol Gregorio, PhD, and Richard Lane, MD**.

Steven M. Gootter Foundation introduces the Gootter Philanthropic Award as part of its Gala Dinner. The inaugural recipients are **Robert and Penny Sarver**.

2008

Thanks to the support of many generous donors, the Gootter Foundation raises \$270,000, grants two research investigator awards.

The Philanthropic Award is presented to **Mrs. Bazy Tankersly**.

2009

The Gootter Foundation recognizes a need in the Tucson community and purchases and installs 32 automated external defibrillators in high schools throughout Arizona.

The Gootter Gala Dinner, the Grand Slam and Tennis Tournament become the signature events for the Foundation.

The Gootter Foundation raises \$300,000 despite the economic downturn.

Foundation names **Gordon A. Ewy, MD** the recipient of the Philanthropic Award for 2009.

2010

Former world champion Mats Wilander makes his fourth appearance at the Gootter Grand Slam.

The 2010 Philanthropic Award is given to **Bobby Present**.

2011

The Foundation breaks the \$1 million mark toward its goal of \$2 million for a chair.

Allan and Alfie Norville are named the 2011 Philanthropic Award Recipients.

2012

Save the Date. The Gootter Gala Dinner and Grand Slam Tennis Tournament are scheduled for March 24 and 25, 2012. For more information, visit www.stevenmgootterfoundation.org.



Gordon A. Ewy, MD, with members of Steven Gootter's family: his mother, Paulette; brother-in-law, Andrew Messing; sister, Claudine Messing; and father, Joe.



Sarver Heart Center

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UA Sarver Heart Center
Green Valley
25th Annual Lecture Series . . . 2011 – 2012
Presented by Green Valley Recreation, Inc.

- ♥ **Jan. 19, 2012** – Gordon A. Ewy, MD
What’s So Different About Heart Disease in Women?
- ♥ **Feb. 16, 2012** – Peter Ott, MD
Keeping the Beat: the Role of Pacemakers,
Defibrillators and Ablation
- ♥ **March 15, 2012** – Betsy Dokken, NP, PhD
Taking Control of Diabetes
- ♥ **April 19, 2012** – Karl B. Kern, MD
Why Arizona is a Great Place for Heart Care:
the New CPR and Beyond

Join us for our 25th year on the third Thursdays of each month, October - April at 10 a.m., **Canoa Hills Social Center, 3660 S. Camino del Sol, Green Valley**. Free and open to the public. No reservation required. Refreshments provided.



2012 **Healthy Heart**

Public Education
Conference

Saturday, Feb. 4, 2012
8 a.m. to Noon

The University of Arizona Medical
Center–University Campus
1501 N. Campbell, Tucson AZ

- **Health Screenings by UA College of Pharmacy students**
- **Healthy Heart Information**
- **Update on Cardiovascular Procedures**
- **Light breakfast**
- **Cost \$15**

For details and registration
www.heart.arizona.edu