

Investigator Awards Provide Stepping Stones to Advanced Research

When a medical researcher is intrigued by a question that may lead to a breakthrough in knowledge and treatment, the first step is often the most difficult: obtain funding to collect data to prove the research shows promise. The UA Sarver Heart Center's Investigator Awards provide a stepping stone between bright ideas and promising proof.

Award recipients have gone on to receive major national grants and provide information that has led to improved protocols for patient care. Here are first steps that are being funded this year—all thanks to generous support to the Sarver Heart Center from families and individuals. ♥

Pediatric and Congenital Heart Disease Awards

The Stephen Michael Schneider Investigator Award is named in honor of Mr. and Mrs. Frederick Schneider's son, who passed away at a young age. This award was created to advance research in the area of pediatric cardiology.



Raymond Runyan, PhD, professor of cellular and molecular medicine, is studying a specific molecule that causes valve calcification. Knowledge of this protein will direct the development of specific therapies for both children and adults, and will show whether adult valve disease is due to a misregulated developmental process. ♥

The William J. "Billy" Gieszl Endowed Award for Heart Research was established by the Gieszl family in memory of William Gieszl to advance diagnosis, treatment and prevention of congenital heart disease.

Kevin Englehardt, MD, pediatric resident, is working to identify the potential health benefits of a high school cycling program. Particularly in the gap between childhood and adulthood, adolescents may benefit from a cycling spin class. ♥

Atherosclerotic Cardiovascular Disease Research

Edward and Virginia Madden Awards

In memory of loved ones who had heart disease, Mr. and Mrs. Madden committed through their estates to make a difference in the lives of those suffering from cardiovascular disease by funding critical research, such as these two awards:

Maria Altbach, PhD, associate professor of radiology, is working with Aiden Abidov, MD, PhD, to develop a technique that uses MRI technology to identify “myocardium at risk” without being as invasive as current procedures. This will impact the management of patients suspected of acute coronary syndrome as a result of atherosclerotic disease. ♥

Hussein Yassine, MD, assistant professor of medicine, is studying HDL or “good cholesterol,” and the mechanism of how it protects against atherosclerosis and cardiovascular disease. Using the UA’s advanced proteomics facility, the research team hopes to better understand the structure of this cholesterol and gain ideas to develop and improve therapies to decrease atherosclerotic cardiovascular disease. ♥



Research Project Awards – Cardiovascular Disease and Medicine

Frank C. Iatarola Award

Mr. Frank Iatarola’s family directed gifts to the Sarver Heart Center in his memory and as a tribute to his life.

Lauren Biwer, BSEd, a research technician in the basic sciences, is conducting research to gain a greater understanding of the mechanisms responsible for the effect of excessive collagen deposit (also known as fibrosis) on heart rhythms. These abnormal rhythms can lead to sudden cardiac death. Additionally, they are looking at rats with genetically high blood pressure and the persistent effects of blood pressure medication, even after the drug treatment is stopped. ♥



Walter and Vinnie Hinz Award

Walter Hinz, through a provision in his estate, honored his late wife, Vinnie, and his good friend, Peg Barrett, by creating this award.

Christopher T. Pappas, PhD, postdoctoral research associate in cellular and molecular medicine, is studying the role of a newly

described muscle-specific protein that has been proposed to play an important role in setting up and regulating the molecular machinery involved in muscle contraction. ♥

Darlene and Kalidas Madhavpeddi Award

Kalidas Madhavpeddi, Sarver Heart Center Advisory Board Chair, and his wife established this award with hopes to recognize and advance talented researchers.

Daniela Zarnescu, PhD, assistant professor in molecular and cellular biology, aims to model heart disease in *drosophila*, a fruit fly that has heart cells that bear structural similarities to those of vertebrates. The fruit fly has a particular protein that will aid in better understanding of heart failure in human hearts. Dr. Zarnescu is collaborating with Dr. Carol Gregorio to study the same protein in mice; however, the fly has the advantage of rapid and easy genetics that can give clues about genes involved in heart disease. ♥

The William and Dorothy Bramble Shaftner

Award for Heart Research was established through the estate of Mr. and Mrs. Shaftner to support projects that “are in the area of most compelling need for heart disease research.”

Jordan Lancaster, BS, graduate student in physiology, is working to develop implantable, cell-based matrix patches for treatment of heart failure. The patches contract spontaneously and rhythmically in culture and act as a delivery vehicle for heart muscle cells to aid in cardiac repair of an injured heart. ♥

Heart Disease in Women Grants

John T. and Janet K. Billington Award

Given in memory of her late husband, John, Mrs. Billington’s generosity seeks to advance technology in cardiovascular research and care.

Sasanka Jayasuriya, MD, assistant professor of medicine, is investigating the effectiveness of the drug used to prevent clotting after stent placement. Particularly, she is seeking a better understanding of cardiac outcomes amongst Hispanic females taking the medication. ♥



Jordan Lancaster

Sarver Heart Center's Youngest Investigator

For this year's science project, third-grader Drew Messing, a student at Castlehill Country Day School in Tucson, set out to answer the question, "How many kids does it take to save a life?"

Because his uncle, Steven Gootter, lost his life to sudden cardiac arrest, Drew is aware that the most important intervention after a cardiac arrest is performing chest-compression-only CPR. With this knowledge, Drew set out to educate his fellow classmates and discover whether or not together they could save a life. Drew's preliminary hypothesis concluded that larger students would be able to do more compressions and, because of the smaller students, it would require the combination of many students' efforts to save a life.

As part of his procedure, Drew enlisted help from Sarver Heart Center staff members Clint McCall and Melissa Ludgate to train the entire third- through fifth-grade classes in chest-compression-only CPR. After this, he collected students' ages, heights and weights along with their grade levels. Then all the students tried performing CPR for one minute while Drew measured the number of adequate compressions they could perform. After this first session, the top students from each grade were assembled in pairs. Two students alternated adequate CPR each

minute for six minutes, which is the average response time in Tucson for EMS to arrive. Drew's results revealed that the oldest and heaviest students performed the best compressions, and height and grade level were not factors. Most importantly, two kids working together are enough to save a life! Drew won first place for grades three through five in the Biomedical Exhibit from the Pima County Medical Foundation. It's important to remember that it is never too early to start thinking like a scientist! ♥

Drew Messing took first place for his grade level at the regional science fair. Below he demonstrates chest-compression-only CPR to Melissa Ludgate and his class.

