American Heart Association and The Children's Heart Foundation invest more than $826,000 in latest round of Congenital Heart Defect Research Awards

Latest awards go to seven research projects focused specifically on better understanding, identifying and treating congenital heart defects

Dallas, March 1, 2018 – The Children's Heart Foundation and the American Heart Association today announced their latest collaborative investment in research to better understand and treat congenital heart defects (CHDs), the number one birth defect in the United States. This is the fourth round of their co-funded Congenital Heart Defect Research Awards program and represents a $826,600 investment in seven research programs from around the country. The program will ultimately fund more than $22 million in CHD-specific research through 2021.

At least 40,000 infants are estimated to be affected by congenital heart defects each year in the United States. About 25 percent of babies born in the U.S. with a CHD require invasive treatment in their first year of life. Research that helps understand, identify and treat CHDs is helping these children live longer healthier lives. Today, it is estimated that more than 800,000 American adults are living with a CHD.

"We are honored and excited to continue our research funding partnership with the American Heart Association," said Tamara Thomas, President of The Children's Heart Foundation. "Through this collaboration and our ongoing commitment to research focused on congenital heart defects, we strive to make a lasting impact in the lives of those with congenital heart defects. This $826,600 of new research will help bring innovative solutions to survival rates and care."

The seven new grants are:

- **Craig Broberg of Oregon Health & Science University, Portland** – Using existing clinical records from multiple hospitals across the country on patients born with a systemic right ventricle due to transposition of the great arteries who are now adults, this study will study factors that determine which patients do well and which have severe heart failure, such as need for heart transplant. The study will be the largest collection of data on such patients thus far. It will provide a greater understanding of what leads to heart deterioration, and therefore what treatment options may have the most potential benefit.
- **Srinivas Manideep Chavali of University of California, San Francisco** – While poor neurodevelopmental outcomes in the survivors of congenital heart disease (CHD) remain a serious concern, the underlying pathology is not yet clearly understood. This research will focus on the role of blood flow in building myelin, which protects and coast

brain cells, allowing for health brain development. A better understanding of the relationship between CHDs and brain health will aid in developing treatment.

- **Ibrahim Domian of Massachusetts General Hospital** – Understanding how the heart forms is important to treat congenital heart defects and this study will look at a specific gene which controls how proteins are broken down to form the heart. This will help isolate specific targets that need to be controlled to produce a healthy heart.
- **Nicole Fleming of University of North Carolina, Chapel Hill** – Using zebrafish, which are fast-growing and easy to manipulate, and whose heart cells are easy to see, this study aims to understand defective ventricular growth in embryos and better understand pharmacological treatments that may improve heart function.
- **Chulan Kwon of Johns Hopkins University School of Medicine** – Examining the biology of cardiac progenitor cells (CPCs), which act as building blocks for a developing heart will provide fundamental insights into how improper regulation of factors affecting CPC multiplication can lead to congenital heart disease, which may provide a new direction for preventive or therapeutic approaches. In addition, the knowledge gained from this work might be directly applied to control CPCs in a dish, which will accelerate CPC-mediated heart regenerative research to repair heart disease.
- **Yuntao Song of Cincinnati Children's Hospital Medical Center** – Many congenital heart defects relate to a issue in the cardiac outflow tract. This study will examine the roles specific genes play in developing the cardiac outflow tract – which ones lead to a healthy development and which lead to defects.
- **Kathryn Vannatta of Nationwide Children's Hospital** – As more children survive congenital heart defects, society needs a better understanding of how to support them as they grow. This study will identify details about social difficulties experienced by children with severe forms of CHD, including levels of social withdrawal, disruptive behavior, and whether survivors are victimized by peers. It will examine whether CHD survivors have more of those interactions or have fewer friends than healthy classmates. The study will test whether these difficulties are explained by cognitive and social-affective abilities or less engagement in physical activity and extracurricular activities, as well as the benefits of different parenting practices and types of school environments in promoting social competence.

“By funding research into what causes congenital heart defects and how to better treat people living with them, we are laying the groundwork for more children to survive into healthy adulthoods,” says Bradley S. Marino MD, MPP, MSCE, congenital heart defect specialist, American Heart Association Chair of the Council on Cardiovascular Disease in the Young, member of The Children’s Heart Foundation Medical Advisory Board, and AHA and CHF funded scientist.

Scientists who are conducting research on congenital heart defects to advance knowledge for prevention and treatment are encouraged to submit applications for the next round of funding. For more about the AHA/CHF Congenital Heart Defects Research Awards, including deadlines for submitting proposals, please visit www.professional.heart.org/CHDResearchAwards.

Additional Resources:

- To learn more about congenital heart defects, visit heart.org/CHD
- For support for parents of young children diagnosed with CHDs or adults living with the impact of a CHD, visit SupportNetwork.heart.org

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About the American Heart Association and American Stroke Association

The American Heart Association and the American Stroke Association are devoted to saving people from heart disease and stroke – America's No. 1 and No. 5 killers. We team with millions of volunteers to fund innovative research, fight for stronger public health policies, and provide lifesaving tools and information to prevent and treat these diseases. The Dallas-based American Heart Association is the nation's oldest and largest voluntary organization dedicated to fighting heart disease and stroke. The American Stroke Association is a division of the American Heart Association. To learn more or to get involved, call 1-800-AHA-USA1, visit heart.org or call any of our offices around the country. Follow us on Facebook and Twitter

About The Children's Heart Foundation

The Children's Heart Foundation (CHF) is the country's leading national organization solely committed to congenital heart research funding. The mission of CHF is to fund the most promising research to advance the diagnosis, treatment, and prevention of congenital heart defects (CHD). Since 1996, CHF has funded millions of dollars of research across the U.S. and Canada. For more information, please visit www.childrensheartfoundation.org. Follow us on Facebook and Twitter.

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