WHY AHA RESEARCH MATTERS
The American Heart Association research program has tremendous impact on scientific discovery and researchers’ careers. New knowledge that results from our funding benefits millions of lives in every corner of the U.S. and around the world. The findings made possible by the AHA are translated into medical advancements and guidelines that give healthcare providers tools to most effectively treat patients, and help people improve well-being. As the largest not-for-profit funder of research related to cardiovascular disease and stroke outside of the federal government, the AHA is a leader in cutting-edge science and committed to building careers in research, in its mission as a relentless force for a world of longer, healthier lives.

- In FY 2017-18, AHA invested $160.7 million to fund 813 new awardees
- 13 Nobel Prize winners have been AHA awardees
- AHA funding contributed to many important scientific advances:
  - First artificial heart valve
  - Techniques & standards for CPR
  - Cholesterol inhibitors
  - Microsurgery
  - Implantable pacemakers
  - Drug-coated stents
  - Treatment for infant respiratory distress syndrome

The Demand for More Funding
Each year, more and more researchers look to the AHA to fund their advancements, but the pool of dollars is not large enough to accommodate every idea. AHA received 1,828 more applications, worth $351.7 million, that we could not fund. This means many scientific projects were shelved, and the knowledge that would result from them deferred.

Active AHA Awards, as of August 2018 – Nearly 2,000 awards topping $441.8 million
2017-18 Funding Allocation by Research Type

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Research Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>66%</td>
<td>Basic Science</td>
<td>The study of life processes that are universal in their application to scientific knowledge</td>
</tr>
<tr>
<td>23%</td>
<td>Clinical Investigations</td>
<td>Addresses important questions of normal function and disease using human subjects</td>
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<tr>
<td>11%</td>
<td>Population Health Research</td>
<td>Studies determinants of health status influenced by social, economic and physical environments, human biology, health policy and services</td>
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A Relentless Force for Supporting Investigators

The AHA offers a portfolio of research awards to meet the needs of the science community, respond to the current science landscape, and focus on the AHA’s mission and strategic goals.

AHA Institutional Research Enhancement Awards (AIREA) ensure funding opportunities for independent investigators at less research-intensive institutions.

- 30 awards were given in 2017-18, totaling nearly $1.85 million.
- Applications to this program were up 58% over last year.

Active AIREA Awards, as of August 2018 – 41 active awards totaling $6.2 million

Continued Focus on the Next Generation of Researchers

One research priority is to support investigators at the start of their careers, ensuring a continuous supply of researchers. AHA volunteer leaders hold at the core a commitment to programs that support trainees and early-career investigators. These awardees represented 72% of unrestricted award funds in FY 2017-18.
AHA Merit Awardees Blaze Trails

Introduced in 2016, the AHA Merit Award funds highly promising investigators who have the potential to move a field of science forward with creative approaches — those who propose novel approaches to major research challenges in cardiovascular disease and stroke that have the potential to produce an unusually high impact. Each award is $1 million over five years. The research must reflect substantially divergent ideas from those already being pursued by the awardee.

#### 2018 Merit Awardees

**Walter Koch, Ph.D.**, the W.W. Smith Endowed Chair in Cardiovascular Medicine from the Lewis Katz School of Medicine at Temple University, explains, “We are finding that the heart can ‘talk’ to fat and alter pathways in heart muscle cells that change what is secreted and changes how fat responds to certain conditions.”

**Michelle Albert, M.D.,** professor of medicine and director of the Center for the Study of Adversity and Cardiovascular Disease at the University of California, San Francisco, says, “The American Heart Association’s Merit Award will help facilitate a targeted obesity intervention focused on social determinants of health using a pragmatic public health approach in collaboration with the YMCA-San Francisco. We are interested in answering important, clinically relevant patient-centered questions and are focused on obesity and adversity among socially disadvantaged persons.”

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### Research Partnerships

The Association is committed to identifying and supporting specific science areas deemed critical to achieving our mission and strategic objectives. We have also established partnerships with various organizations to fund focused research programs and partnerships with other organizations to support focused research to achieve mutual goals. Two partnerships of note:

**With the Children’s Heart Foundation (CHF),** the **AHA/CHF Congenital Heart Defect Research Awards** were established. A total of $22.5 million is being awarded from July 2014 through June 2021 to investigators actively conducting basic, clinical, population or translational research directly related to congenital heart defects.

In partnership with the Paul G. Allen Frontiers Group, two investigators received $1.5 million **AHA-Allen Distinguished Investigator Awards** to study the extracellular matrix, or the "natural glue" that holds together tissues and organs. The awardees are Suneel Apte, MBBS, DPhil, of the Cleveland Clinic and Jeffrey Holmes, MD, PhD, of the University of Virginia.

The Enduring Hearts Foundation is working with the AHA to establish a research award for investigators conducting research specific to solid organ transplantation longevity.
Strategic Research Topics

Funding strategic research topics helps drive the AHA to achieve its 2020 goals. For example, AHA Strategically Focused Research Networks (SFRNs) focus on the causes, prevention and treatment of cardiovascular disease or stroke in specific topics, selected by AHA science leadership. The AHA is currently funding nine research networks. Two networks are added each year.

- $148 million has been allocated to SFRNs to date
- In 2017-18, new networks were centered around vascular disease and atrial fibrillation
The AHA Institute for Precision Cardiovascular Medicine

A new frontier in science – precision medicine – is finding cures and preventing diseases by considering a person’s genetics, environment and lifestyle. AHA is the only organization dedicated to advancing precision medicine in cardiovascular care. The Institute accelerates more precise scientific discoveries in cardiovascular diseases and stroke through patient engagement, integrated knowledge, data analysis, new grants and practical translation.

Serving Underrepresented Minorities in Science

- A partnership between the American Heart Association (AHA) and the Harold Amos Medical Faculty Development Program (AMFDP) of The Robert Wood Johnson Foundation was established last year to address the shortage of scholars with academic and research appointments in the fields of cardiology and stroke who come from historically disadvantaged backgrounds. Awards are offered to historically disadvantaged candidates who are committed to developing careers in academic medicine and to serving as role models for students and faculty of similar backgrounds. Our first two awardees were named this year:

  Marwah Abdalla, MD, MPH - Columbia University Medical Center
  Dr. Abdalla's research interest is the cardiovascular manifestations of hypertension, assessed by echocardiography and ambulatory blood pressure monitoring.

  Gregory Payne, MD, PhD - University of Alabama, Birmingham
  Dr. Payne's work involves research with novel mechanisms of inflammation in cardiovascular disease and cardiac transplant rejection.

- AHA maintains a goal to commit at least 6% of annual funding to underrepresented minorities in research. The FY 2017-18 actual was 7.4%.

- In early 2017, AHA worked with the RAND Corporation to explore program options to inspire and support the careers of underrepresented minorities in science and research. A pilot program for minority undergraduate students is slated to launch in 2018-19.

For more information about AHA’s research program, please visit Heart.org/Research