



THE
PAUL G. ALLEN
FRONTIERS GROUP

Research teams from Salk Institute for Biological Studies, Stanford University, University Hospitals Cleveland Medical Center selected to study healthy brain aging, better treatments for neurodegenerative diseases

The American Heart Association and Allen Institute announce \$43 million commitment in research funding for innovative approaches to combat age-related dementia, including Alzheimer's disease

SEATTLE and DALLAS — November 9, 2018 — Could our blood hold the molecular secrets to a fountain of youth, preventing age-related brain disorders? Are brain aging and Alzheimer's disease caused by a failure of interconnected systems in our bodies, triggering a domino-like cascade of disease? Can targeting the red blood cells and blood vessels jointly keep our brains healthy and prevent dementia?

Three new large-scale, multidisciplinary research teams have just been assembled to answer those questions. Today, the American Heart Association, the world's leading voluntary organization focused on heart and brain health, and The Paul G. Allen Frontiers Group, a division of the Allen Institute, announced awardees of the American Heart Association-Allen Initiative in Brain Health and Cognitive Impairment, a new collaborative [funding initiative](#) launched earlier this year. These teams will merge research of the brain and the blood vessels to develop new understanding of — and ultimately better preventions and treatments for — age-related brain disorders such as Alzheimer's disease.

"The innovative approaches that have come about through this initiative are a clear testament to Allen Institute founder Paul G. Allen's legacy in science," said [Allan Jones](#), Ph.D., President and Chief Executive Officer of the Allen Institute. "Paul inspired all of us every day to tackle hard problems that require systematic, comprehensive approaches to solve, and these new research teams are a perfect example of that way of thinking about mysteries in science and human health."

"This is an exciting next step in our ongoing commitment to bridging the science of vascular and brain health through revolutionary, out-of-the-box thinking," said Ivor J. Benjamin, M.D., FAHA, President of the American Heart Association and Director of the Cardiovascular Center at the Medical College of Wisconsin. "The teams selected to lead these projects have exceeded expectations in their commitment to taking on challenging questions that can ultimately drive groundbreaking research outcomes."

The three teams, headquartered at the Salk Institute for Biological Studies in La Jolla, CA, Stanford University School of Medicine in Stanford, CA and University Hospitals Cleveland Medical Center in Cleveland, OH, respectively, will work to develop new solutions to the urgent problem of age-related cognitive decline. As people live longer in many parts of the world, Alzheimer's and other age-related dementias are on the rise, projected to reach more than [75 million people](#) worldwide by 2030. To date, no effective therapy has been developed for these disorders, which are not only deadly, but also exact a high financial and emotional toll on society.

"To make a difference in Alzheimer's disease and other cognitive disorders, we have to go beyond incremental research steps to innovative ideas and partnerships that will upend how we approach brain health and decline," said Kathryn Richmond, Ph.D., Director of the Frontiers Group. "We feel the neuroscientists and cardiologists leading these teams have exciting approaches and the expertise needed to have a significant and near-term impact on these devastating diseases."

The Association and the Frontiers Group, along with additional contributors including the Oskar Fischer Project and the Henrietta B. and Frederick H. Bugher Foundation, have committed \$43 million to make significant progress in the understanding of and treatments for age-related cognitive disorders.

“The questions we are asking in this project are on a frontier that’s really unknown,” said [Rusty Gage](#), Ph.D., neuroscience researcher and President of Salk, who will lead one of the new research teams. “How do we age, and why do some people age differently? I’m hopeful that we will reach a coherent answer to that question. We’re all going to age, and through our work we want to provide a map for healthy aging.”

Learn more about the American Heart Association-Allen Initiative in Brain Health and Cognitive Impairment awardees

Gage leads an interdisciplinary group of professors at Salk that believe that Alzheimer’s disease and other age-related brain disorders are triggered not by a single event, but by a failure of complex interwoven biological systems in our body that start to break down as we age. Their research team has developed unique new ways to study aging and diseased human neurons using brain “organoids” and marmosets as a new primate model of cognitive aging. They will now use these models to pursue a comprehensive understanding of the biology of aging and age-related diseases in an eight-year project. Gage’s theory is that failure in any one of these systems, which are integral to every cell in our bodies, puts pressure on the other processes, eventually causing a domino-like crash that causes devastating brain disorders like Alzheimer’s. Understanding the multi-part network that keeps our brains healthy could highlight pathways for better treatments for these diseases.

[Tony Wyss-Coray](#), Ph.D., Professor of Neurology at Stanford University School of Medicine, has found in his studies that blood or plasma from young animals or humans can halt or slow brain aging in old mice, and may even improve symptoms for patients with mild Alzheimer’s disease. Now, he will lead a research team on a four-year project to unlock the biological secrets of youth and rejuvenation in young blood. They will search for the damaging proteins and molecules which accumulate in blood with aging, obesity and vascular disease, with the goal to neutralize these factors and protect against age-related diseases. The research team hopes to ultimately figure out how to mimic the beneficial effects of young blood to create new therapeutics for vascular dementia, Alzheimer’s disease, and other aging-related brain disorders.

[Mukesh K. Jain](#), M.D., a cardiologist at University Hospitals Cleveland Medical Center and Professor of Medicine at Case Western Reserve University, will lead a team of investigators from University Hospitals Cleveland Medical Center, Johns Hopkins University, Cleveland Clinic, and University of Pennsylvania in a four-year project to explore how red blood cells, the most abundant cells in our body, and the inner lining of small blood vessels called endothelium work together as a unit to drive brain health and age-related cognitive disease. This unit of blood cells and blood vessels controls the delivery of oxygen and nutrients to our brain every second we are alive. Jain and his team will examine how connections between the red blood cells, blood vessels and the brain are altered during aging and disease and will test whether new therapeutics can restore the proper connections.

About The Paul G. Allen Frontiers Group

The Paul G. Allen Frontiers Group is dedicated to exploring the landscape of science to identify and fund pioneers with ideas that will advance knowledge and make the world better. Through continuous dialogue with scientists across the world, The Paul G. Allen Frontiers Group seeks opportunities to expand the boundaries of knowledge and solve important problems. Programs include the Allen Discovery Centers at partner institutions for leadership-driven, compass-guided research, and the Allen Distinguished Investigators for frontier explorations with exceptional creativity and potential impact. The Paul G. Allen Frontiers Group was founded in 2016 by philanthropist and visionary Paul G. Allen, and is a division of the Allen Institute, an independent 501(c)(3) medical research organization. For more information visit allenfrontiersgroup.org.

About the American Heart Association

The American Heart Association is a leading force for a world of longer, healthier lives. With nearly a century of lifesaving work, the Dallas-based association is dedicated to ensuring equitable health for all. We are a

trustworthy source empowering people to improve their heart health, brain health and well-being. We collaborate with numerous organizations and millions of volunteers to fund innovative research, advocate for stronger public health policies, and share lifesaving resources and information. Connect with us on heart.org, [Facebook](#), [Twitter](#) or by calling 1-800-AHA-USA1.

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