

Barrow Aneurysm and AVM Research Center



The most frightening part about having a brain aneurysm or arteriovenous malformation (AVM) is that you may not even know it until it's too late. These vascular malformations typically do not cause symptoms until they become very large or rupture. When a rupture does occur, it causes bleeding in the brain that can have life-altering or fatal consequences.

Led by Barrow Neurological Institute President and CEO Michael T. Lawton, MD, the Barrow Aneurysm and AVM Research Center conducts vital research into the genetics, formation, and rupture of aneurysms and AVMs. Scientists in the Center continuously push boundaries in research to develop new, less invasive, and more effective treatments for patients worldwide.

IMPACT OF PHILANTHROPY



10+
ongoing research studies



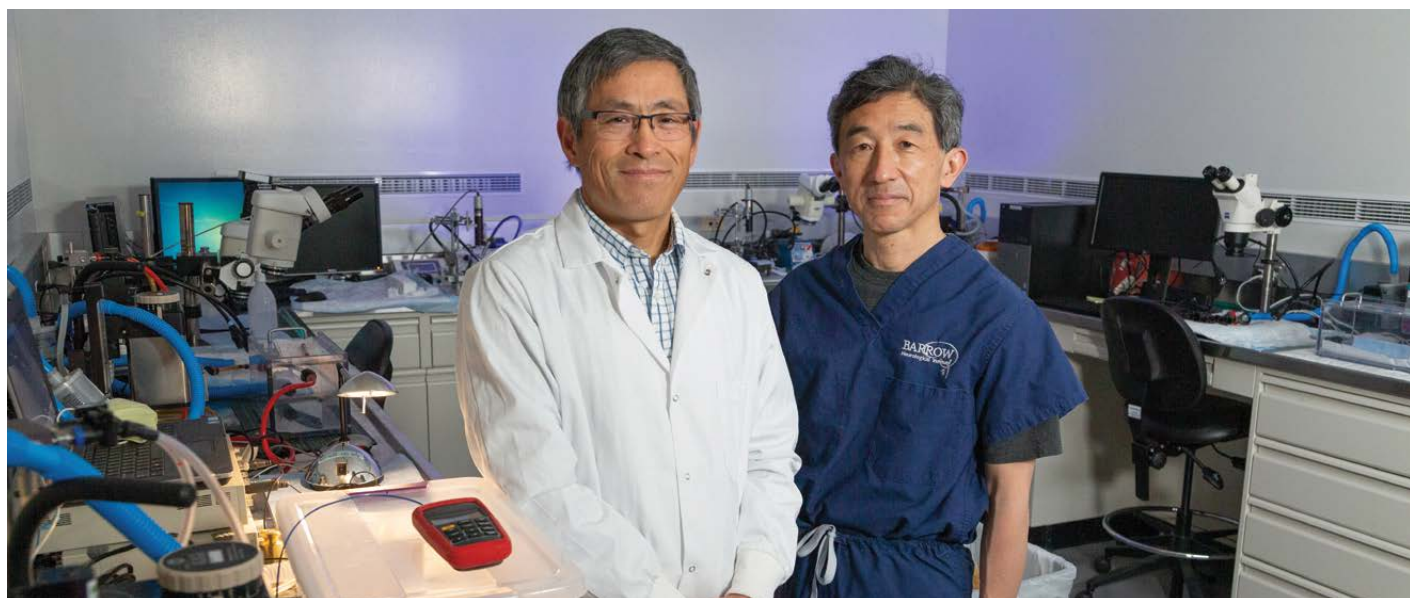
3
studies by
Dr. Hashimoto funded
by NIH grants



54
peer-reviewed articles
by Dr. Lawton

You advance life-saving aneurysm and AVM research.

Barrow Neurological Foundation donors provide critical funding for scientists to produce and test novel ideas. The preliminary data generated by these initial studies is essential to securing grants for larger studies and, eventually, clinical trials.



RESEARCH FUNDED BY PHILANTHROPY

Aging and Aneurysm Rupture

Tomoki Hashimoto, PhD, is studying age-related biological events that can lead to an aneurysm rupture. This research has two translational potentials: (1) certain drugs that modify these events could be incorporated into a treatment strategy and (2) blood tests that measure these events could be used to predict the risk of an aneurysm rupture.

Familial AVM Drug Targets

S. Paul Oh, PhD, and Lea Scherschinski, MD, are utilizing a preclinical model of familial AVMs to test drug candidates that could prevent them from rupturing. One of the drugs they tested, trametinib, demonstrated the ability to reduce the size of AVMs, thus stabilizing them.

Sporadic AVM Drug Targets

Dr. Oh developed a preclinical model to regulate the overexpression of the KRAS gene, which is linked to the formation of sporadic AVMs. He tested the drug doxycycline in this model, showing that it could suppress the KRAS gene and reduce the size of AVMs.

Effects of Microplastic Exposure

Dr. Hashimoto is collaborating with scientists at Arizona State University to assess whether daily exposure to microplastic particles increases the risk of aneurysm ruptures or leads to worse outcomes in stroke.

You inspire the next generation of leading neuroscientists.

Takuma Maeda, MD, PhD

Dr. Maeda, a postdoctoral fellow, is studying a new drug to improve patient outcomes after a subarachnoid hemorrhage (bleeding caused by an aneurysm rupture). He was awarded one of the Foundation's Fast Track Awards to begin this research and recently received a grant from the Brain Aneurysm Foundation to expand it.

"I express my sincere gratitude for this opportunity to conduct research. Your generous donations have yielded valuable results that have propelled me toward my long-term scientific goals."

Takuma Maeda, MD, PhD

Gia Patel

When Gia was only 14 years old, Dr. Lawton performed life-saving surgery on her ruptured brain aneurysm. This summer, she was selected to participate in Barrow's High School Research Program, spending four weeks researching the condition that almost took her life.

"I am incredibly grateful to have been able to gain more hands-on experience in the Hashimoto Lab. This internship will significantly impact my education as I continue pursuing my career goals."

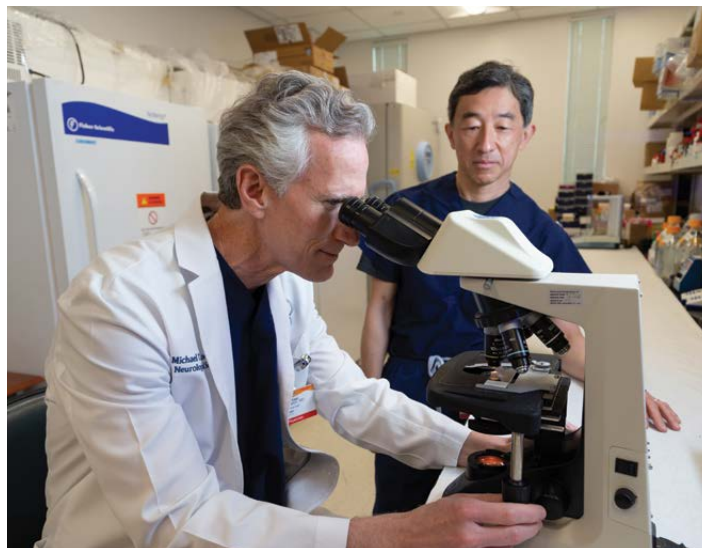
Gia Patel



On The Horizon

Aneurysm Research: Dr. Hashimoto will continue investigating age-related events that could lead to an aneurysm rupture. His study on cellular senescence (when cells die due to aging) is currently funded by an NIH grant, and he plans to submit NIH grant applications for two more of age-related events within the next year.

AVM Research: Dr. Oh will expand the number of drugs tested in his preclinical models for both familial and hereditary AVMs.



The mission of Barrow Neurological Foundation is simple: to be the catalyst of our donors' passion for transformation by providing the resources for Barrow Neurological Institute to achieve its mission of saving human lives through innovative treatment, groundbreaking research, and educating the next generation of the world's leading neuroscience specialists.