Dr. Louise McCullough is known for her research in identifying sex differences in cell death pathways during stroke, which are now recognized as major factors in the response to an ischemic insult or the damage tissue suffers when the blood supply returns to it after a period of time with a lack of oxygen.

McCullough was named the new chair of the Department of Neurology on Sept. 1, 2015, making her the Department of Neurology’s fifth chair. She is a nationally recognized physician-scientist who is passionate about academic growth, is an energetic investigator and is well-versed in all aspects of cerebral vascular diseases.

She received her PhD in Neuroscience from the University of Connecticut. She then received her medical degree from the University of Connecticut School of Medicine. After graduating from medical school, McCullough continued her training at Johns Hopkins in Baltimore, Maryland completing a neurology residency and a fellowship in cerebrovascular disease.

She then joined the faculty at Johns Hopkins Hospital in Baltimore and began her translational research studying stroke and its effects on men versus women. Clinically, stroke is increasingly recognized as a sexually dimorphic disease, or exhibiting different characteristics between the two sexes, with most international databases demonstrating that women experience lower stroke incidence relative to men until advanced age. This native neuroprotection is lost after menopause, which is often attributed to the loss of estrogen.

Her laboratory began actively investigating differences in age-related inflammation in both the brain and peripheral tissues after stroke, peripheral post-stroke immunosuppression, and the detrimental effects of social isolation on the immune response to stroke during chronic recovery. Additionally, her lab is currently attempting to modulate peripheral age-related inflammation in an attempt to reduce brain injury using bone marrow replacement and the manipulation of the body’s microbiome. A microbiome is collective genetic material that resides on the surface and in deep layers of skin (including in mammary glands), in the saliva and oral mucosa, in the conjunctiva and in the gastrointestinal tracts.

She relocated to Connecticut in 2004 to become a professor in the Departments of Neurology and Neuroscience at The University of Connecticut Health Center and John Dempsey Hospital in Farmington, Connecticut, as well as the director of Stroke Research and Education at Hartford Hospital, one of the largest stroke centers in New England. She came to The University of Texas Health Science Center at Houston (UTHealth) in 2015 and is currently professor and chair of the Department of Neurology at McGovern Medical School and chief of the Neurology Service at Memorial Hermann-Texas Medical Center.

She is certified by the American Board of Psychiatry and Neurology and has subspecialty board certification in vascular neurology as well as vascular ultrasound and has published over 150 papers. McCullough is a member of eight professional societies, including the Society for Neuroscience and the American Academy of Neurology, and is also an active clinician and has been recognized as one of America’s Top Doctors for the past eight years.

Dr. McCullough will be speaking about the different characteristics that stroke exhibits between the two sexes, her research on the detrimental effects of social isolation on the immune response during recovery and stroke signs and prevention.
STROKE SIGNS and SYMPTOMS

Knowing the signs and symptoms of a stroke is the first step to ensuring medical help is received immediately. For each minute a stroke goes untreated and blood flow to the brain continues to be blocked, a person loses about 1.9 million neurons. This could mean that a person’s speech, movement, memory and so much more can be affected.

Learn as many stroke symptoms as possible so you can recognize stroke FAST and save a life!

Stroke symptoms include:

- Numbness or weakness of face, arm or leg, especially on one side of the body
- Confusion, trouble speaking or understanding
- Trouble seeing in one or both eyes
- Trouble walking, dizziness, loss of balance or coordination
- Severe headache with no known cause

F.A.S.T. is an easy way to remember and identify the most common symptoms of a stroke. Recognition of stroke and calling 9-1-1 immediately will determine how quickly someone will receive help and treatment. Getting to a hospital rapidly increases the chances of a better recovery.

Use F.A.S.T. to remember the warning signs of a stroke.

**Face:** Ask the person to smile. Does one side of the face droop?

**Speech:** Ask the person to repeat a simple phrase. Is their speech slurred or strange?

**Arms:** Ask the person to raise both arms. Does one arm drift downward?

**Time:** If you observe any of these signs, call 9-1-1 immediately.

WHAT IS STROKE?

A stroke is a “brain attack” and it can happen to anyone at any time. A stroke occurs when the blood flow to an area of the brain is cut off. When this happens, brain cells are deprived of oxygen and begin to die. When brain cells die during a stroke, abilities controlled by the area not receiving oxygen begin to be affected such as memory and muscle control.

How a person is affected by stroke depends on where the stroke occurred in the brain and how much the brain is damaged. For example, someone who had a small stroke may only have minor problems such as temporary weakness of an arm or leg. People who have larger strokes may be permanently paralyzed on one side of their body and/or lose their ability to speak. Some people recover completely from strokes, but more than 2/3 of survivors will have some type of disability.

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