The brain and how it gives rise to conscious thought is one of the great mysteries in all of science. Researchers who are leaders in discovery science are finding new genes, biomarkers of brain diseases and therapeutic targets for drug development. This effort represents a major challenge – to unravel the millions of neurons and neural connections that make up the human brain. Although this is a very big technical challenge, we now have the tools and imaging technologies needed to understand dynamic changes in the brain.

A better understanding of how the brain is organized could improve diagnosis of brain diseases like Alzheimer’s and Parkinson’s disease, amyotrophic lateral sclerosis (ALS), progressive supranuclear palsy (PSP) and stroke. Knowledge about the root causes of diseases like schizophrenia, bipolar and autism will translate into economic benefits for our country. For all of the brain initiatives to succeed, we need the support of enlightened people, who will consider brain donation to support the research.

The UM Brain Endowment Bank enables researchers to study the pathology, genetics and biochemistry of the brain in health and disease. We are part of the new NIH NeuroBioBank Initiative to support American researchers who study the brain. There are many broad-ranging scientific interests, but not enough brains donated after death. Your gift of a brain donation can support many scientists and doctors to discover better ways to diagnose, treat and ultimately cure diseases of the brain.

Imagine a world without schizophrenia or autism. Imagine aging without a fear of Alzheimer’s or Parkinson’s disease. Imagine living with a razor sharp mind into your ninth and tenth decade of life. Successful brain aging is on the horizon for all Americans, but only if we have more brains donated for research.

At the Massachusetts Institute of Technology (MIT) Department of Brain and Cognitive Sciences, doctors and scientists have shown that nutrient intake can affect the rate at which the brain makes new synapses – the connections of brain cells. This activity is important for learning and memory. Brain synapses must be renewed and this activity can slow down as a person ages. The loss of synapses in Alzheimer’s disease and other dementias may explain memory loss across the lifespan.

Understanding nutrient intake and synapse formation may help scientists develop better treatments for children with autism, especially if autism can be recognized earlier. Developmental disabilities that affect children are not well characterized because very few brains of children are donated for research. Families need to be aware that brain donation programs exist and that this gift will support the next generation – your children and grandchildren.

The decision to become a brain donor is no different than organ and tissue donation for transplantation. Being a brain donor after death is a generous and worthwhile decision. The first step to begin the process is to enroll in the Brain Endowment Bank registry. Signing up to be a donor usually takes place many years before the donation becomes a possibility. Make the commitment and tell your family and friends about your decision.

“Brain donation is a gift that will support the next generation – your children and grandchildren”
Susan Miller’s Poetry Touches the Heart of Parkinson’s Patients

Susan Miller is a Parkinson’s patient and member of the Brain Endowment Bank registry. She is also a poet. Susan generously shares her humor, strength and encouragement through the power of the written word. She enjoys sharing her day-to-day experiences to educate health care professionals and bring awareness to others about the complexities and realities of living with Parkinson’s disease. She also is editor of Inspire!, a newsletter by and for those living with Parkinson’s disease.

Susan was diagnosed with Parkinson’s at age 42. But as young as 16, she started to experience symptoms of the illness, such as dystonia and loss of balance. As an activist for Parkinson’s research, she served as a team captain at the 2002 Parkinson’s Unity Walk in New York City. Her group raised the second largest amount of money in the nation.

In addition to poetry, Susan enjoys swimming, shopping and spending time on her boat. She readily shares her philosophy in her poetry and is pleased to help others.

Sir Parkinson
Be on your way, Sir Parkinson,
You uninvited guest.
You must have lied to get inside,
You wretched, loathsome pest.
You robbed me of my motor skills.
You give me grief with no relief
And laugh when I’m in pain.
You better leave while you still can.
I’m feeling strong and witty.
Take your disease when you go please,
And with it shame and pity.
I do not fear you evil one.
Just stay away from me.
I’ll proudly fight this nasty plight
Till you’ll no longer be.
BE GONE SIR PARKINSON!
Stepping Out of Your Comfort Zone May Improve Brain Health

Scientific studies have long shown that seniors who stay mentally and physically active score better on cognitive and memory tests than those who are sedentary. New research shows that just being active is not necessarily enough. More robust challenges, such as taking acting or photography classes, may be the key to preserving or improving cognitive function in the aging mind.

“Older adults should seek out activities that are not just challenging, but are also novel,” said Denise Park, head of the University of Texas Center for Vital Longevity. “Seek out stimulating activities that will lead to more engaging experiences.”

Dr. Park compared seniors who attended a class to learn a new skill to those who joined a social club or stayed home and did word games. Those who learned a skill they had never tried before, such as painting, playing the piano or speaking another language, improved their memory and the speed with which they processed information. Those who scored highest attended two classes over 14 weeks.

The study, published in the January 2014 *Journal of Psychology Science*, shows that enjoying social time does not benefit as much as stepping out of your comfort zone and trying something new. Researchers believe that physical changes and the shrinking of white matter in the frontal area of the brain causes aging brain disorders. Scientists are looking for clues to help older adults preserve their cognitive health along with physical health.

IN THE MEDIA
Dr. Mash’s Research in *National Geographic*

Dr. Mash and her colleagues work in detecting a neurotoxin in shark products was featured in a story in the February 2013 *National Geographic*. The neurotoxin is called beta-methylamino-L-alanine (BMAA) and is made by blue-green algae. BMAA has possible links to Parkinson’s, Alzheimer’s and Lou Gehrig’s disease.

Toxic Shark Fins?

University of Miami neuroscientist Deborah Mash found an unsavory ingredient in the fins of seven shark species: a neurotoxin with possible links to Parkinson’s, Alzheimer’s and Lou Gehrig’s disease. Called beta-methylamino-L-alanine (BMAA), the molecule is made by cyanobacteria, often called blue-green algae, and can accumulate as it travels up the food chain. Previous research in Guam found that BMAA in bats eaten by locals was the likely cause of a neurodegenerative illness: the bats fed on the seeds of cycad trees with bacteria-harboring roots. Because the bacteria are ubiquitous in the ocean, Dr. Mash and fellow researchers turned to marine species. Some controversy remains about BMAA detection methods, but Dr. Mash believes that with cyanobacterial blooms on the rise, more BMAA will be on the menu for sharks and possibly people too. -Elizabeth Preston

Brain Bank Featured During Brain Awareness Week

The Brain Bank was featured on CBS Channel 4 as part of the organization’s promotion efforts for National Brain Awareness Week in March. The feature focused on the biorepository, the laboratories and the importance of joining the Brain Endowment Bank registry.

Your gift can make the difference that could lead to the next scientific breakthrough!

Miami-Dade: (305) 243-6219
Outside Miami-Dade: (800) UM-BRAIN
www.brainbank.med.miami.edu

University of Miami Brain Endowment Bank™
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Miami, FL 33136

In Bangkok, shark fins hang on hooks to promote the sale of shark fin soup.
Presentation by Dr. Mash on Brain Health & Donation

Members of the East Ridge Village in south Miami-Dade recently hosted a visit by the Brain Endowment Bank’s Deborah Mash, Ph.D. who made a presentation entitled Successful Brain Aging: Current Advances in Brain Research and discussed the activities of the University of Miami Brain Endowment Bank.

Those in attendance learned about disorders affecting the human brain and the latest research developments that offer hope to individuals and families who suffer from traumatic brain injury, schizophrenia, depression, autism and multiple sclerosis. After the presentation, many of those in attendance signed the Brain Endowment Bank registry to become brain donors.

Your Group or Association Can Learn About the Human Brain
For more information, contact Jeff Farmer at (305) 243-6219 or jfarmer1@med.miami.edu.

Neurologist Zeno Sanchez-Ramos Continues to Create Art

It was nearly 25 years ago that artist/neurologist Zeno Sanchez-Ramos volunteered to create a logo for the newly founded University of Miami Brain Endowment Bank (see below). His iconic design of a human face and brain has represented the organization ever since. During that time, Dr. Sanchez-Ramos has continued both careers as a neuroscientist/physician and artist.

Currently, he is the Medical Director of Parkinson Research Foundation and a Professor of Neurology at the University of South Florida (USF) in Tampa, where he holds the Helen Ellis Endowed Chair for Parkinson’s Disease research. As a young man, he was a wandering portrait artist and designer and has continued that pursuit as well. He recently exhibited his show, Neon Neurons, at the ArtSpace in Anna Maria, FL.

Help us find the answers!
Contact us today to join our brain registry.
Miami-Dade: (305) 243-6219
Outside Miami-Dade: (800) UM-BRAIN
www.brainbank.med.miami.edu

UM Researchers Publish Schizophrenia Research

Getting and keeping a good job is particularly difficult for those suffering from schizophrenia, according to a recent study by a group of University Miami Miller School of Medicine researchers in Schizophrenia Research -Cognition. The scientists included psychiatrists associated with the Brain Endowment Bank. Dr. Philip Harvey and Dr. Martin Strassnig were among the group who compared schizophrenic patients from an outpatient facility and a VA hospital. The VA patients had more education and therefore had better functionality and job status than the outpatients. Overall, both groups showed a decline in their job status from their best job to their current one and their job status was closely related to their social opportunities.

Drinking coffee in moderate amounts during middle age may reduce the risk of dementia and Alzheimer’s disease in the elderly, according to a new study.

Researchers in Finland and Sweden examined people whose coffee drinking habits had been recorded at midlife. Those who drank three to five cups of coffee per day (500 mg of caffeine) in midlife were much less likely to have developed dementia or Alzheimer’s in follow-up checks two decades or more later, the researchers say in the January issue of the Journal of Alzheimer’s Disease.

“Given the large amount of coffee consumption globally, the results might have important implications for the prevention of or delaying the onset of dementia/Alzheimer’s disease,” said Miia Kivipelto, a researcher from the University of Kuopio, Finland and the Karolinska Institutet in Stockholm, Sweden.

In the study, participants were asked in 1972, 1977, 1982 or 1987, when they were all in midlife (average age 50), how much coffee they drank. Then they were split into three groups: low, moderate and high coffee consumption. After an average of 21 years, 1,409 people between ages 65 and 79 were re-examined. A total of 61 were classified as having dementia, 48 with Alzheimer’s. Coffee drinkers at midlife had a lower risk for dementia or Alzheimer’s later in life than people who drank little or no coffee at midlife. Previous studies have shown that coffee drinking improves cognitive performance, and caffeine reportedly reduces the risk of Parkinson’s disease.