Unlocking the mysteries of the aging brain takes several keys. Scholars are learning about brain function and the modifiers of brain aging from dietary intake to genetics. Age-related changes in perception, attention, and memory are examined with both behavioral measures and imaging technologies. Neurological diseases such as Parkinson's, Alzheimer's, Huntington's and stroke occur more frequently in older adults and will become increasingly prevalent as the population ages. This symposium presents current research on the aging brain and developmental neuroscience. The symposium concludes with a poster session and reception.

We are grateful to the colleges of Consumer and Family Sciences, Liberal Arts, and Pharmacy, Nursing and Health Sciences and the School of Nursing for their support of this symposium.

 CALC 2009 Symposium Committee
Wayne Campbell, PhD, Foods & Nutrition
Alexander Francis, PhD, Speech, Language and Hearing Sciences
David Kemmerer, PhD, Speech, Language and Hearing Sciences
George McCabe, PhD, Statistics
Robert Proctor, PhD, Psychological Sciences
Laura Sands, PhD, Nursing
Joseph Thomas III, PhD, Pharmacy Practice

Scope

1:00 Registration
West Faculty Lounge
Purdue Memorial Union

1:15 Welcome
Kenneth F. Ferraro, PhD
Director of CALC
Distinguished Professor of Sociology

1:20 Opening Remarks
David Kemmerer, PhD
Associate Professor
Speech, Language, and Hearing Sciences

1:30 Brain Aging and its Cognitive Correlates: The Role of Vascular Risk Factors as Negative Modifiers
Naftali Raz, PhD

2:25 Break

2:40 Aging Mind and Aging Brain: Neuroimaging Studies of Cognitive Aging
David J. Madden, PhD

3:30 Dietary Intake and Neuronal Vulnerability in Aging
Mark P. Mattison, PhD

4:15 Panel Discussion

4:45 Poster Session and Reception
Anniversary Drawing Room
Purdue Memorial Union

* Each presentation will conclude with a brief time for questions.
Brain Aging and its Cognitive Correlates: The Role of Vascular Risk Factors as Negative Modifiers

Naftali Raz, PhD

Dr. Raz is currently a Professor of Psychology and Associate Director for Life-Span Cognitive Neuroscience at the Institute of Gerontology, Wayne State University in Detroit, MI. He completed his undergraduate studies at Hebrew University in Jerusalem in 1979. He was trained in psychology and human neuroscience at the University of Texas at Austin and received his PhD in 1985. Dr. Raz’s research focuses on the neural correlates and modifiers of cognitive aging. The main themes in the current studies in Dr. Raz’s lab are: Differential aging of brain structure in healthy adults; cognitive consequences of differential structural changes; the role of physiological and genetic vascular risk factors on trajectories of brain aging and their impact on cognitive performance. Dr. Raz’s research has been continuously funded since 1993 by the National Institute on Aging and is currently supported by a MERIT grant from NIA.

Aging Mind and Aging Brain: Neuroimaging Studies of Cognitive Aging

David J. Madden, PhD

Dr. Madden completed his PhD degree in psychology at the University of California at Davis and a postdoctoral fellowship at the Duke University Medical Center. Since then he has been a faculty member in the Department of Psychiatry and Behavioral Sciences and is currently a Professor of Medical Psychology in that department. He is core faculty in the Duke Brain Imaging Center, and in the Center for the Study of Aging and Human Development. His research has focused primarily on the cognitive neuroscience of aging: the investigation of age-related changes in perception, attention, and memory, using both behavioral measures and neuroimaging techniques, including positron emission tomography (PET), functional magnetic resonance imaging (fMRI), and diffusion tensor imaging (DTI). He is a Fellow of the American Psychological Association; Gerontological Society of America, and the Association for Psychological Science. In 2004 Dr. Madden was the recipient of the Distinguished Research Achievement Award from Division 20 (Adult Development and Aging) of the APA, for his behavioral and neuroimaging research on cognitive aging.

Dietary Intake and Neuronal Vulnerability in Aging

Mark P. Mattson, PhD

After receiving his PhD degree from the University of Iowa, Dr. Mattson completed a postdoctoral fellowship in Developmental Neuroscience at Colorado State University. He then joined the Sanders-Brown Center on Aging and the Department of Anatomy and Neurobiology at the University of Kentucky College of Medicine as an Assistant Professor. Dr. Mattson was promoted to the rank of Associate Professor with tenure and then to Full Professor. In 2000, Dr. Mattson took the position of Chief of the Laboratory of Neurosciences at the National Institute on Aging in Baltimore, where he leads a multi-disciplinary research team that applies cutting-edge technologies in research aimed at understanding molecular and cellular mechanisms of brain aging and the pathogenesis of neurodegenerative disorders. He is also a Professor in the Department of Neuroscience at Johns Hopkins University School of Medicine.

Dr. Mattson is considered a leader in the area of cellular and molecular mechanisms underlying neuronal plasticity and neurodegenerative disorders, and has made major contributions to understanding the pathogenesis of Alzheimer’s disease, Parkinson’s disease, amyotrophic lateral sclerosis and stroke, and to their prevention and treatment. He has published more than 400 original research articles and numerous review articles in leading journals and books, and has edited 10 books in the areas of neuronal signal transduction, neurodegenerative disorders and mechanisms of aging. Dr. Mattson is the most highly cited neuroscientist in the world according to the ISI information database. He has received many awards including the Metropolitan Life Foundation Medical Research Award, the Alzheimer’s Association Zenith Award, the Jordi Folch Pi Award, the Santiago Grisolia Chair Prize, and several Grass Lectureship Awards. He is Editor-in-Chief of NeuroMolecular Medicine and Aging Research Reviews, and has been a Managing or Associate Editor of the Journal of Neuroscience, Trends in Neurosciences, the Journal of Neurochemistry, the Neurobiology of Aging, and the Journal of Neuroscience Research. Dr. Mattson has served on several NIH study sections and on scientific advisory boards for many research foundations. He has trained more than 60 postdoctoral and predoctoral scientists, and has made major contributions to the education of undergraduate, graduate and medical students.