

## Course Syllabus

### Course Title:

NeuroBehavioral Assessment, Measurement, and Intervention: Contemporary Trends and Implications

### Course Description:

The Illinois NeuroBehavioral Assessment Laboratory (INBAL) is a newly created unit of the University of Illinois at Urbana-Champaign. The overarching goal of the INBAL is to foster new, innovative research collaborations focused on identifying rich measures of behavioral performance, cognitive and emotional processes, personality and social behaviors to inform research in human capital formation, population health, and more broadly, in big data approaches to the assessment sciences.

This exciting team-taught 8-week course will highlight the work of University faculty across disciplines, including the INBAL Directors, with expertise in neurobehavioral assessment, measurement, memory, learning, emotion, and/or aging.

### Course Outline and Presenters:

**Neal Cohen**  
September 2

**“Life is All Memory”**

Dr. Cohen is the Director of the Interdisciplinary Health Sciences Institute (IHSI), and the Center for Nutrition, Learning and Memory (CNLM), and Co-Director of INBAL. He is a Professor in the Department of Psychology, the Neuroscience Program, and the Carle Illinois College of Medicine. Dr. Cohen’s research involves interdisciplinary studies of human learning and memory, and he has been instrumental in the discovery and characterization of the brain's multiple memory systems. His work has emphasized the development of new approaches and methodologies for assessing different aspects of memory in various populations, both in association with brain disorders and in response to specific interventions. In 2012, Dr. Cohen was named a fellow of the American Association for the Advancement of Science, which recognized his “pioneering research on memory and amnesia, distinguishing brain systems and psychological characteristics that distinguish declarative and procedural memory.”

**Kathryn Leskis**  
September 9

**“Testing, Testing 1-2-3: A Backstage Pass”**

Dr. Leskis is a licensed clinical psychologist, clinical director of INBAL, and clinical assistant professor in the Department of psychology at the University of Illinois at Urbana-Champaign. She is also an adjunct assistant professor in the University of Illinois College of Medicine at Urbana-Champaign and provides lectures on psychological testing to medical students during their psychiatry clerkship. A native of Champaign, Dr. Leskis graduated from Central High School in 1995. She earned a bachelor’s degree in psychology in 1998, followed by a doctorate in clinical community psychology with a minor in family law and policy in 2005 from Illinois. Dr. Leskis completed a pre-doctoral internship and post-doctoral fellowship at Yale University School of Medicine. After graduating, she worked as a consulting psychologist in the Bureau of Behavioral Health and Medicine, Department of Children and Families, for the State of Connecticut and adjunct faculty at Quinnipiac University for two years before returning to Champaign. Dr. Leskis worked as a clinical psychologist with Carle health system for 11 years, specializing in diagnostic clarification and psychological testing prior to joining INBAL.

Additional information about INBAL can be accessed on the website at <https://inbal.illinois.edu/>.

**Kara Federmeier & Suzanne Jongman**

**“Language Over the Lifespan: Is Nothing Predictable in Older Age?”**

September 16

Dr. Federmeier is a Professor in the Department of Psychology, the Neuroscience Program, and Beckman Institute, where she co-leads the Illinois Language and Literacy Initiative and works with postdoctoral research fellow, Suzanne Jongman. Dr. Federmeier’s Cognition and Brain Lab has been funded by the National Institute on Aging, the Institute of Education Sciences, and the James S. McDonnell Foundation. She received the Award for Distinguished Early Career Contributions to Psychophysiology from the Society for Psychophysiology in 2006 and the Cognitive Neuroscience Society Young Investigator Award in 2010. In 2012, she was named a University Scholar and in 2013 a College of Liberal Arts and Sciences Centennial Scholar. She was President of the Society for Psychophysiology (2017-2019). Dr. Federmeier is a Fellow of the Association for Psychological Science and the Psychonomic Society and edits *The Psychology of Learning and Motivation*. Her research interests include language processing, semantic memory, aging, hemispheric differences, and Electrophysiology (EEG, ERPs).

**Monica Fabiani**  
September 23

**Theme: *Behavioral and Neural Data in the Context of Aging***

Dr. Fabiani is Co-Director of the Cognitive Neuroimaging Laboratory and Professor of Psychology, and the Beckman Institute Cognitive Neuroscience Group. Her research interests are in the cognitive neuroscience of human memory and aging, as well as in the development of tools for the non-invasive mapping of human brain function. Her research involves the integration of data from different domains, including behavioral responses, neuropsychological tests, brain anatomy and function including event-related brain potentials (ERP’s), structural and functional magnetic resonance imaging (MRI), as well as optical imaging including near infrared spectroscopy (NIRS), and a new technique developed by Gabriele Gratton (CNS Group) and Fabiani, the event-related optical

signals (EROS). Drs. Fabiani and Gratton currently have two R01 grants from the National Institute of Aging Project Titles: "Optical Measures of Cerebral Arterial Function as Predictors of Brain and Cognitive Aging, and "Role of Arterial Stiffness in the Decline of Cognitive Control in Aging." They are also the recipients of the prestigious Distinguished Scientific Contributions to Psychophysiology award.

**Elizabeth A L Stine-Morrow "The Promise of Engagement for Promoting Lifelong Cognitive Health"**  
September 30

Dr. Stine-Morrow is a Professor in the Department of Educational Psychology and Psychology as well as the Beckman Institute. Her research is broadly concerned with the multifaceted nature of adult development and aging, and in particular, how cognition and intellectual capacities are optimized over the adult life span. She has examined how self-regulated adaptations (e.g., selective allocation of attentional resources, reliance on knowledge-based processes, activity engagement) engender positive development in adulthood. Much of this research has focused on the important role of literacy and the processes through which effective reading is maintained into late life. This research has been funded by the National Institute on Aging, the National Science Foundation, and the Institute for Educational Sciences. Dr. Stine-Morrow is a Fellow of the American Psychological Association and the Gerontological Society of America. Awards include the College of Education Spitze-Mather Award for Faculty Excellence and the Department of Educational Psychology Jones Teaching Award. She has served as President of Division 20 (Adult Development and Aging) of the American Psychological Association, as associate editor for *The Journal of Gerontology: Psychological Sciences and Memory & Cognition*, and as a member of the National Research Council's Committee on Adolescent and Adult Literacy (2009-2011). Dr. Stine-Morrow currently serves as the editor of *Psychology and Aging*.

**Raksha Mudar**  
October 7

**"Memory Slips: What's Normal, What's Not"**

Dr. Mudar is an Associate Professor in the Department of Speech and Hearing Science and Director of the Aging and Neurocognition Lab. Her research focuses on: (1) understanding how age and age-related conditions (e.g., mild cognitive impairment (MCI); Alzheimer's disease dementia; age-associated hearing loss) impact higher-order cognitive functions (e.g., semantic processing), and (2) developing interventions to enhance and maintain brain health in individuals who are at risk of dementia and other age-related disorders. Dr. Mudar is part of a multi-site center grant from the National Institute on Disability, Independent Living, and Rehabilitation to help adults with cognitive disabilities deal with challenges associated with everyday activities. Dr. Mudar has served as the co-chair of the Joint Committee on Interprofessional Relations Between the American Psychological Association (APA) and American Speech-Language-Hearing Association (ASHA) (2016-2019).

**Dan Morrow**  
October 14

**“Can Conversational Agents (Avatars) Help Older Adults Learn Health Information?”**

Dr. Morrow is a Professor of Educational Psychology, and Professor of Psychology, Industrial and Enterprise Systems Engineering, the Beckman Institute, the Carle-Illinois College of Medicine, and the Illinois Informatics Institute. Dr. Morrow’s research projects have focused on health communication (funded by NIH and AHRQ) and expertise and aging in pilot performance (funded by NIH and NASA). His fields of professional interest are cognitive aging and human factors related to communication in complex tasks. He has served as President of Division 21 (Applied Experimental and Engineering Psychology) of the American Psychological Association, is current editor of the *Journal of Experimental Psychology: Applied*, has served as editor of *The Review of Human Factors and Ergonomics*, associate editor of *The Journal of Human Factors*, and on the editorial board of *Psychology and Aging*. He is a fellow of APA and the Human Factors and Ergonomics Society.

**Wendy Heller**  
October 21

**“A Tale of Two Anxieties”**

Dr. Heller is the Department Head, and Professor of Psychology, the Beckman Institute, and Co-Director of INBAL. Research interests involve the neural mechanisms associated with emotion-cognition interactions and their implications for psychopathology. Dr. Heller is particularly interested in examining cognitive and emotional risk factors associated with the development or maintenance of anxiety and depression. She uses behavioral and neuroimaging methods such as neuropsychological task performance, functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and event-related potentials (ERPs). She draws on psychological theories to model how fundamental emotion and personality constructs can be mapped onto brain systems to clarify the neural mechanisms of emotion and psychopathology. In turn, the neuropsychological and neuroimaging findings are used to inform psychological theories of emotion and psychopathology. In 2014, Dr. Heller was appointed Provost Fellow with a special focus on campus diversity. She was selected as a Fellow on the 2019-20 President’s Executive Leadership Program (PELP) and won the Executive Officer Distinguished Leadership Award in 2019. Dr. Heller is a Fellow of the Association for Psychological Science and currently serves as President of the Society for Research in Psychopathology.