National Science Foundation-Gallaudet University Science of Learning Center, Visual Language and Visual Learning (VL2)

About the Ph.D. in Educational Neuroscience Program

Growing from our mission to educate the next generation of students, scholars in our National Science Foundation-Gallaudet University Science of Learning Center, Visual Language and Visual Learning (VL2) created the pioneering Ph.D. in Educational Neuroscience (PEN) Program. The PEN program encompasses research in how humans learn across the lifespan, from infants to adults, with a special interest in the neuroplasticity of visually-guided learning that contributes to language learning and bilingualism, reading and literacy, and higher cognitive processes (such as action perception, math and numeracy, memory and attention, emotional and social development, and more). The PEN Program at Gallaudet University further provides a unique strength in groundbreaking scientific discoveries about learning that have important translational significance for the education of all children, especially young visual learners.

Proud Sponsors

The 2017-2018 PEN Distinguished Lecture Series in Educational Neuroscience is sponsored by the Ph.D. in Educational Neuroscience (PEN) Program; the National Science Foundation-Gallaudet University Science of Learning Center, Visual Language and Visual Learning (VL2); and Gallaudet University.

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2017 - 2018

The PEN Distinguished Lecture Series in Educational Neuroscience

The Origin and Nature of Language, Numeracy, and Thought

The Ph.D. In Educational Neuroscience (PEN) Program and Gallaudet University are proud to announce the 2017-2018 *Distinguished Lecture Series in Educational Neuroscience.* This series honors world-renowned scientists and aims to form a bridge between science and society.

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PhD in
EDUCATIONAL
NEUROSCIENCE

VISUAL LANGUAGE
AND VISUAL LEARNING

The PEN Distinguished Lecture Series

The PEN program's Distinguished Lecture Series in Educational Neuroscience honors researchers who have changed the landscape of science. We invite them to share their discoveries as we forge new links across research communities within Gallaudet University, Washington D.C., and the world.

About This Year's Presenters

This high-profile lecture series honors our presenters – true pioneers in science who work at the intersection of the Science of Learning (learning across the lifespan) and Educational Neuroscience (learning across early life). This year's theme, "The Origin and Nature of Language, Numeracy, and Thought," showcases work investigating the neural underpinnings of human higher cognition. What brain and cognitive functions are at the root of language, numeracy, memory, and thought? Our esteemed scientists will guide us in their quest for answers presenting their brain and behavioral discoveries on infants, adults, brain-lesioned patients, and nonhuman primates in the attempt to unravel the human ability to learn. No science would be possible without appropriate methods and analytical tools, therefore, this year we are also welcoming a special talk at the forefront of the discussion on what is a meaningful result and the importance of appropriate statistical analyses within the field of Educational Neuroscience and its sister disciplines.

Presenters

Dr. Josef Rauschecker
Georgetown University
Where did language come from? Evolutionary precursor mechanisms in the brain of nonhuman primates
October 5, 2017 / 4:00 pm-5:30 pm

Dr. Josef P. Rauschecker is a Professor of Neurology, Physiology and Biophysics, and of Neuroscience at Georgetown University. He is also a Hans Fischer Senior Fellow at the Institute for Advanced Study at the Technical University Munich (Germany). Dr. Rauschecker studied in Munich and Cambridge (UK) and earned his Ph.D. from the Max Planck Institute for Psychiatry in Munich. At Georgetown University Medical Center, he helped create the first human functional magnetic resonance imaging (fMRI) research facility. With 35 years of experience in systems and cognitive neuroscience, more than 25 years of experience in animal electrophysiology, and upwards of 15 years of experience with functional magnetic resonance imaging, he now directs the Laboratory of Integrative Neuroscience and Cognition (LINC) and the Program in Cognitive and Computational Sciences (PICCS), which has included partnerships with nine institutions in four countries. His work is centered on the functional organization and plasticity of the central nervous system in relation to auditory perception or deprivation, and language. He is also interested in the effects of sensory deprivation during brain development with a focus on brain plasticity of individuals with early blindness or deafness. His research is continuously funded by the National Institutes of Health (USA) and the National Science Foundation (USA). Among the numerous recognitions, he was awarded the Alexander-von-Humboldt Prize of the Federal Republic of Germany in 2002.

Dr. Ghislaine Dehaene-Lambertz
Université Paris-Saclay and NeuroSpin, INSERM, France
The human infant brain: A neural architecture able to learn language
November 7, 2017 / 4:00 pm-5:30 pm

Dr. Ghislaine Dehaene-Lambertz is a CNRS Scientific Director of the Developmental Neuroimaging Lab at Neurospin, a brain-imaging platform dedicated to the human brain in the suburbs of Paris. Originally qualified as a pediatrician, she has obtained her second Doctoral title in Life and Health Sciences at the Université Paris VI to then pursue her research career on the development of cognitive functions in infants and children using brain imaging techniques. Dr. Dehaene-Lambertz's research goal is to meticulously study the brain's initial structural and functional organization in order to understand how it may support later complex cognitive functions such as language, music, mathematics and more. Following the idea that evolution reconfigures primitive mechanisms to give rise to new functions, she examines the primitive brain function readily available to infants allowing them to process the world in which they evolve. In turn, she also investigates how the environment shapes the brain organization to reach a mature state. Her pioneering work studying language acquisition with new techniques as such high-density event-related potentials, functional resonance magnetic imaging or optical topography, has impacted the field of developmental neuroscience. Her work on infants' brain, language acquisition and the neural signatures of consciousness has been published in the most prestigious journals such as Nature, Science, and the Proceedings of the National Academy of Sciences (PNAS). Among others, she was awarded the "Grand Prix Scientifique" from the Foundation of France in 2015, and the Scientific Prize from the NRJ Foundation, Institute of France in 2016.

Dr. April Benasich
Rutgers University
Impacting early acoustic mapping in infants: Translational strategies can alter the course of language learning disorders
February 22, 2018 / 4:00 pm-5:30 pm

Dr. April A. Benasich is the Elizabeth H. Solomon Professor of Developmental Cognitive Neuroscience and Professor of Neuroscience at Rutgers University. She also directs the Infancy Studies Laboratory at the Center for Molecular & Behavioral Neuroscience (CMBN), and the Carter Center for Neurocognitive Research. Dr. Benasich is principal investigator within the Temporal Dynamics of Learning Center of the National Science Foundation at the Institute for Neural Computation, University of California in San Diego. Her academic career started at New York University where she obtained her Ph.D. in Experimental/Cognitive Neuroscience and Clinical Psychology. She carried our research as a postdoctoral fellow at John Hopkins University Medical School as a member of the Research Steering Committee of the Infant Health and Development Program, and at the CMBN with Dr. Paula Tallal. Dr. Benasich work is focused on the brain development in infancy and early childhood related to language and cognitive development. She has studied the neural processes involved in normal cognitive and language development as well as the impact of disordered processing in high risk or neurologically impaired infants. Of relevance, is her pioneering work linking deficits in rapid auditory processing in infants to later impairments in language and cognition. Currently, on the one hand her work is examining cognitive and language processing abilities in children with autism who are non-verbal or minimally verbal and, on the other hand, she is testing the effect of training infants in discriminating brief successive sounds on brain organization with the hope that it may optimize later language development. Her work was featured on a PBS special "The New Science of Learning: Brain Fitness for Kids," as well as on Scientific American, "How to build a better learner."

Dr. Stanislas Dehaene
Collège de France and NeuroSpin, INSERM, France
The languages of the brain
November 15, 2017 / 4:00 pm-5:30 pm

Dr. Stanislas Dehaene started his academic career as a mathematician at the École Normale Supérieure in Paris. After reading Jean-Pierre Changeux's book "Neuronal Man: The Biology of The Mind" his interest turned to neuroscience and psychology, and undertook a Ph.D. in Experimental Psychology under the supervision of Jacques Mehler at the École des Hautes Études en Sciences Sociales (EHESS), Paris. He then became a research scientist at INSERM in the Cognitive Sciences and Psycholinguistics Laboratory. For two years he also worked with Michael Posner at the University of Oregon. Back in France, he became Director to the INSERM-CEA Cognitive Neuroimaging Unit, and then also Professor and Chair of Experimental Cognitive Psychology at the Collège de France. Dr. Dehaene's research is focused on understanding the brain mechanisms of cognitive functions specifically developed in the human species, such as reading, calculation, syntax, and conscious reasoning. He uses a multidisciplinary approach combining behavioral paradigms, neuropsychological studies of brain-lesioned patients and brain-imaging studies. His contribution to the field are numerous but of greatest impact are the demonstration of the central role played by a region of the intraparietal sulcus in understanding quantities and arithmetic (the "number sense"), and the role of the left occipito-temporal region in word recognition (the "visual word form area") within the reading neural network. Dr. Dehaene has received numerous awards and prizes, including the Brain Prize (2014), which is known as the most prestigious prize in Neuroscience. He is the author of "The Number Sense: How Mathematical Knowledge Is Embedded In Our Brains"; "Reading in the Brain: the New Science of How We Read"; and "Consciousness and the Brain: Deciphering How the Brain Codes Our Thoughts", among others.

Dr. Regina Nuzzo
Gallaudet University
How not to fool yourself with p-value and other statistics
February 1, 2018 / 4:00 pm-5:30 pm

Dr. Regina Nuzzo graduated from the University of South Florida as an Industrial Engineer and then received her Ph.D. in Statistics from Stanford University. She also trained as post-doctoral scholar in the Music Cognition Lab at McGill University. In 2004 she graduated from a Science Writing program at University of California, Santa Cruz. She is a professor at Gallaudet University in Washington, DC, and her writings about data, probability, and statistics have been published in Nature, New Scientist, Scientific American, ESPN the Magazine, Science News and the New York Times, among others. Her Nature feature article about the P-value won the American Statistical Association's 2014 Excellence in Statistical Reporting Award, and in 2015 she facilitated the American Statistical Association working group conference that produced the 2016 p-values consensus statement. She has also been invited to present her work at numerous important institutes such as the National Institutes of Health and the Royals Statistical Society.

Dr. Daniel Schacter
Harvard University
Constructive memory and imagining the future
April 12, 2018 / 4:00 pm-5:30 pm

Dr. Daniel L. Schacter is William R. Kenan, Jr. Professor of Psychology at Harvard University. Dr. Schacter received his B.A. degree from the University of North Carolina at Chapel Hill and studied under the mentoring of Endel Tulving for his Ph.D. at the University of Toronto. For the next six years he was director of the Unit for Memory Disorders at the University of Toronto. He joined the Psychology Department at the University of Arizona before being appointed as Professor at Harvard University. He also served as Chair of the Psychology Department for 10 years. Dr. Schacter's research focuses on the psychological and biological aspects of human memory using cognitive testing and imaging techniques. He is specifically interested when memory fails, such as in amnesia, memory distortions, false memory, age-related effects as well as Alzheimer's Disease, therefore providing insights into different levels of consciousness and the constructive nature of memory. More recently, Dr. Schacter's work is exploring how the brain creates and imagines future events and how the brain structures subtending memory formation also play a role in the human ability to simulate future events. Dr. Schacter is widely known for his seminal review on implicit memory. Throughout his career, Dr. Schacter has been recognized with numerous awards, including the Award for Distinguished Scientific Contributions from the American Psychological Association (2012). He is a Fellow of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Society of Experimental Psychology. Dr. Schacter has written and edited several books: "Searching for Memory: The Brain, the Mind, and the Past"; "Forgotten ideas, neglected pioneers: Richard Semon and the story of memory"; "The Seven Sins of Memory: How the Mind Forgets and Remembers."

All Lectures will be held in the Merrill Learning Center Room B111 on the Gallaudet Campus and will be live streamed and archived at http://www.gallaudet.edu/gallaudet-video-library