

The Cognitive Area Presents:

Randy Buckner Ph.D.



“Large-Scale Network Organization in the Human Brain”

Tuesday, April 9th, 2019 from 1:00pm-2:00pm
35 Psychology Building

Human association cortex is populated by a series of large-scale networks. In terms of organization, the multiple networks form an orderly progression that radiates outwards from sensory-motor networks to trans modal association networks that underlie advanced forms of human cognition including language, interpreting social situations, and remembering. In-depth analysis within individuals reveals interesting anatomical details including that functionally distinct networks are intertwined throughout multiple zones of association cortex, raising questions about how they differentiate during development and how they are controlled to support changing processing demands once formed. Such findings suggest that studying network organization in relation to neuropsychiatric disorders may benefit from tackling the challenge from a developmental perspective, asking not only how circuits important to language or social function are altered when function is disrupted, but asking how developmental processes that govern differentiation and specialization of large-scale networks come to take atypical trajectories.

Dr. Buckner is Professor of Psychology and Neuroscience at Harvard University and affiliated with the Center for Brain Science. He is also Professor at the Harvard Medical School and the Director for Psychiatric Neuroimaging Research at the Massachusetts General Hospital. He received his Ph.D. degree in neuroscience from Washington University and trained as a postdoctoral fellow and then Instructor of Radiology at Harvard Medical School, where he pioneered new functional MRI methods to study human memory. His work expanded to include studies of Alzheimer's disease and neuropsychiatric illness with a focus on developing biomarkers for disease detection and progression. Dr. Buckner has been a pioneer in applying human neuroimaging approaches to the study of brain function contributing several seminal discoveries about the organization of networks that connect widely distributed brain centers in the service of higher cognition and decision-making, and how these distributed networks break down in illness.

