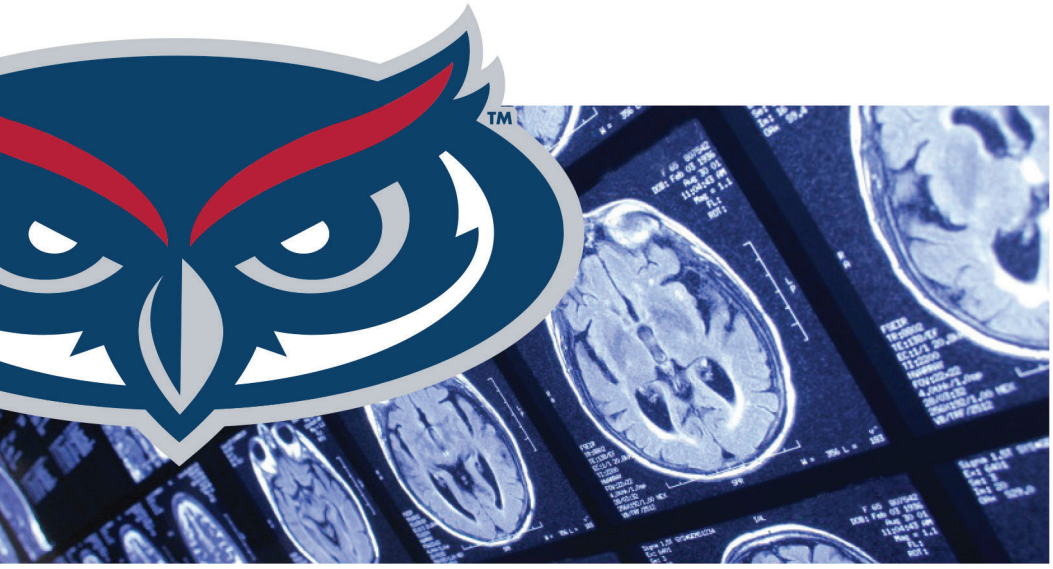
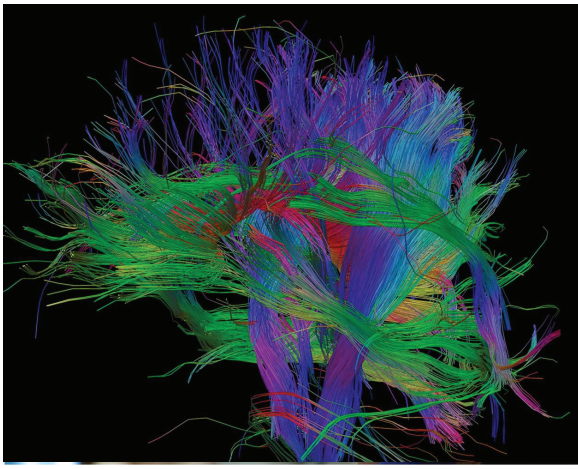
FAU
BRAIN INSTITUTE
Florida Atlantic University

COMPLEX SYSTEMS AND BRAIN SCIENCES (CSBS)

The Complex Systems and Brain Sciences PhD program, with faculty drawn from the Colleges of Science, Engineering and Medicine, seeks to create a new kind of brain scientist who is fluent in both biology and mathematics, and who seeks to bring new ways of thinking into neuroscience. Advanced courses are research-oriented and build on a core curriculum in neuroscience. The program includes training in computational and cognitive neuroscience (emphasizing neuroimaging and realtime recording of behavior), and the mathematical concepts and tools of complexity science and nonlinear dynamical systems. Learn more at: www.ccs.fau.edu





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FACULTY MENTORS CSBS	AREA OF EMPHASIS
William Alexander, Ph.D.	Computational and neural mechanisms underlying cognitive control, decision making, and learning.
Elan Barenholtz, Ph.D.	Psychophysical and computational approaches to visual and multisensory perception and recognition.
Steven Bressler, Ph.D.	Cognitive neurodynamics: investigation of cognitive processing through analysis of the large-scale dynamics of activity in the cerebral cortex using fMRI, EEG, MEG, and LFP data.
Erik Engeberg, Ph.D.	Robotics and prosthetics and brain machine interface.
William Hahn, Ph.D.	Deep learning neural networks, sparse modeling, compressed sensing, adversarial networks, and reinforcement learningodels of brain function.
Sang Hong, Ph.D.	Investigation of color vision, motion processing, visual awareness, facial expression perception, and multi-sensory integration using psychophysical, eye-tracking, and fMRI methodologies.
Scott Kelso, Ph.D.	Mechanisms of self-organization underlying the coordination of brain and behavior.
Howard Prentice, Ph.D.	Ischemic adaptations, neurodegenerative disease, brain anoxia, mitochondrial dysfunction and aging processes.
Wen Shen, Ph.D.	Electrophysiology of channels and receptors, transporters in neurodevelopment and adult system, signal transduction in retinal circuits.
Summer Sheremata, Ph.D.	Psychophysics and fMRI to investigate how visual attention and working memory affect our representations of the external world.
Robert Stackman, Ph.D.	Neurobiology of learning and memory, spatial navigation, brain representations of space, mouse models of Alzheimer's disease.
Emmanuelle Tognoli, Ph.D.	EEG coordination dynamics of human behavior: large-scale integration within and between brains.
Robert Vertes, Ph.D.	Neurophysiology, neuroanatomy, functional organization of the brainstem and its role in controlling activity of the forebrain.
Jang Yen Wu , Ph.D.	Neurotransmitters and neurological disorders.