

AREAS OF RESEARCH EMPHASIS A:

# Cellular, Molecular & Biomedical Neuroscience

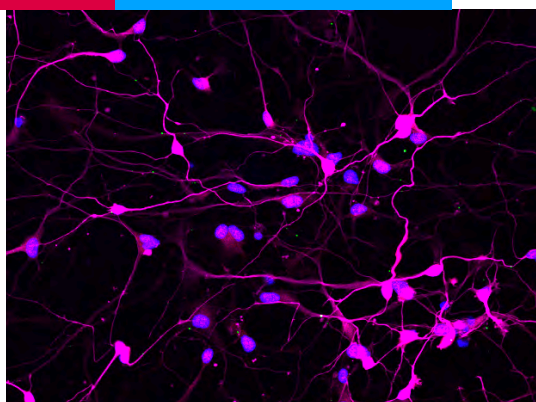


FLORIDA ATLANTIC UNIVERSITY

Neuroscience  
Graduate Program  
Stiles-Nicholson  
Brain Institute

The FAU Neuroscience Graduate Program (NGP) links the Colleges of Science, Medicine, Engineering and Computer Science, Education, the Wilkes Honors College, and the Max Planck Florida Institute for Neuroscience to achieve a one-of-a-kind multidisciplinary research and training experience. NGP students use modern approaches to understand the cellular mechanisms of normal neuron development and function, and how disruptions in these can impact the risk for brain disorders.

Multidisciplinary techniques examine the neurochemistry, metabolism, synaptic connectivity, and structural-functional organization of neurons and the circuits they form. Animal models of human disorders are used to study pathological changes in neurons to devise more effective therapeutics for pain, autism, epilepsy, stroke, and neurodegeneration. Students use cutting-edge techniques in high-resolution microscopic imaging, gene manipulation, induced pluripotent stem cells, transcriptomics, and bioinformatics to elucidate the details of fundamental and pathological neuron biology.



**Learn more:**

**fau.edu/brain/gradneuro**

FLORIDA ATLANTIC UNIVERSITY STILES-NICHOLSON BRAIN INSTITUTE

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Bleducation@fau.edu | 561.297.4989

AREAS OF RESEARCH EMPHASIS B:

# Sensorimotor Cognitive & Behavioral Neuroscience



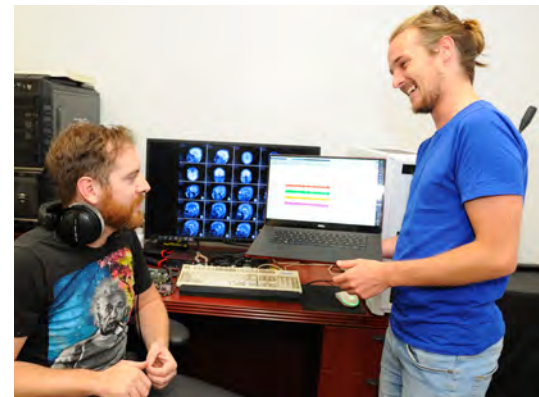
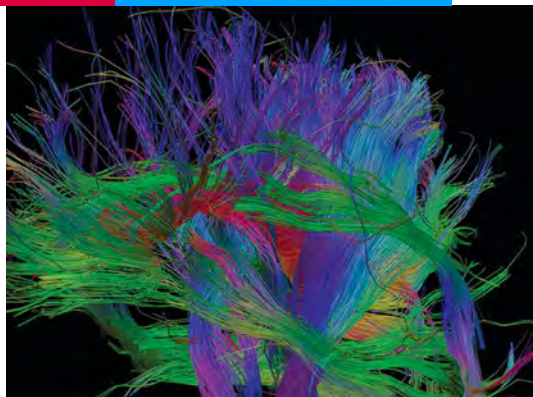
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Training focuses on the development and physiology of neural systems that mediate perception, motor functions and cognition, as well as how the brain integrates these. Human and animal subjects are used. Research tracks the development of language and visual perception, and examines how aging, brain injury and neurodegeneration impact cognitive abilities. Students elucidate the neural substrates of learning, memory, attention, and brain wave patterns using modern approaches in neurophysiology, behavioral assays, EEG, and computational modeling, as well as advanced methods in human fMRI and fNIRS brain imaging.



Learn more:

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AREAS OF RESEARCH EMPHASIS C:

# Computational Neuroscience & NeuroEngineering

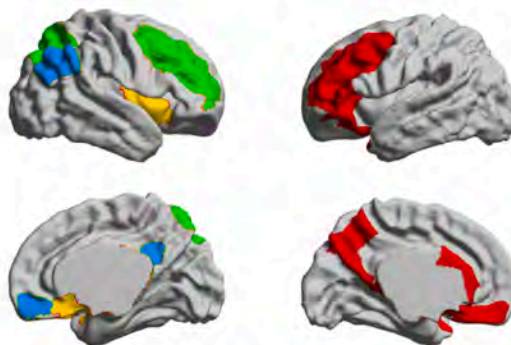
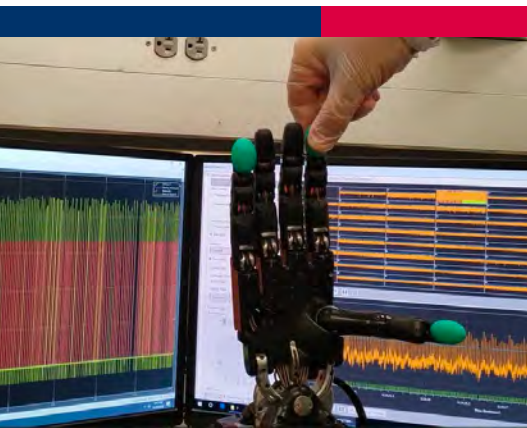


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Training ranges from AI-based modeling of protein and RNA structure, complex physiological patterns of neuronal functioning in dynamic, integrated circuits, and systems approaches that interrogate fundamentals of sensation, cognition, personality, consciousness, and dynamic social interactions. Modern technologies are applied to the development of improved, non-invasive methods for the study of the brain in model systems and that aid in the diagnosis and treatment of brain injuries, including biosensor-based and neuroprosthetic strategies to extend and restore function. Trainees pursue research through a broad array of platforms including multi-electrode recording and fiber photometry of neurochemical dynamics, fMRI brain imaging, optical, fNIRS and EEG sampling of cellular and systems activity, biophotonics, bio-robotics and brain-machine interfaces, computer simulations, machine learning and artificial intelligence.



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# Neuroscience in the Sun

NGP students can pursue education and research options on the FAU Boca Raton, Davie and Jupiter campuses. All campuses are located only minutes away from coastal beaches and intracoastal waterways, each teaming with wildlife and providing many opportunities for aquatic adventures. The Everglades National Park, as well as many state parks, nature centers and wildlife refuges offer hours of relaxation amid the beauty of the natural world.

Sophisticated and inexpensive dining and entertainment are within easy reach of FAU students. A free, Wi-Fi enabled shuttle connects the Boca Raton and Jupiter campuses. Step out of class and into all that South Florida offers: stunning beaches, snorkeling, paddleboarding, boating and fishing.

**World-class shops and restaurants. Engaging culture and arts. Top-tier Entertainment.**

You'll quickly see why millions travel here from around the globe—and why so many choose to stay.

