



Dr. Hamilton Farris
Junior Investigator

Scientific Success and Competitiveness

- Scientific focus: cellular and molecular bases of synaptic plasticity, regulation, and function.
- The projects contribute insights into dendritic function, neural information processing, and mechanisms of neuroprotection relevant to epilepsy, ischemia-reperfusion, deafness, language, and neurodegenerative diseases.
- The CoBRE mentoring plan – teams of mentors including junior mentors (successful former mentees) – aims to produce R01 applications by the PJIs and is coupled with a recruitment plan to attract new research faculty.
- Our ‘grantsmanship-plan’ is designed to guide the PJIs to become competitive in the application and peer-review process.
- "The overall objective of the research projects is to discover fundamental knowledge about brain function," said Dr. Bazan. "This is a necessary step to understand the disease process and to innovate with novel therapeutic approaches".



Dr. Sonia Gasparini
Junior Mentor



Dr. Nicolas G. Bazan
Program Director

“With our first CoBRE grant, we began establishing a culture of scientific excellence at LSUHSC and other Louisiana institutions of higher education,” said Dr. Bazan, “Neurosciences research performed in this environment is greatly synergized with respect to both quality and productivity; the new culture is playing a critical role in innovative and fundamentally important research breakthroughs in the neurosciences at our institutions.”



External Advisory Committee, from left to right, Michael Stryker, Ph.D., (UCSF), Colin Barnstable, Ph.D., (Yale), Scott Brady, Ph.D., (Univ. Illinois at Chicago), Randy Blakely, Ph.D., (Vanderbilt), Stuart Lipton, M.D., Ph.D., (Burnham-LaJolla), Robert Murphy, Ph.D., (Univ. Colorado).

Mentoring Neuroscience in Louisiana:

A Biomedical Program to Enhance Neuroscience

First competitive grant of this type in Louisiana

NIH Funding for a Decade to Train Competitive Neuroscience Faculty

2002-2007 (9.8M)

2007-2012 (10.6M)



NICHOLLS
STATE UNIVERSITY

Culture of Mentoring and Scientific Excellence

- Neurosciences research performed in this environment is greatly synergized with respect to both quality and productivity; this new culture is playing a critical role in innovative and fundamentally important research breakthroughs in the neurosciences at our institutions.
- The mentoring is important for the development of competitive faculty.
- Through our “culture of mentoring” approach, we are:
 - supporting four research programs and pilot projects.
 - continuing to strengthen the quality of neuroscience research in Louisiana.



Dr. Alberto Musto
Junior Investigator

What is a CoBRE?

According to the National Institutes of Health, Centers of Biomedical Research Excellence (CoBRE) support thematic multidisciplinary centers that augment and strengthen institutional biomedical research capacity by expanding and developing biomedical faculty research capability. They also enhance research infrastructure needed to carry out the objectives of a multidisciplinary, collaborative program.

CoBREs are expected to grow through the promotion of collaborative interactive efforts among researchers with complementary backgrounds, skills, and expertise; and to compete independently for external peer-reviewed center or program project grant support.

In some instances, CoBRE support will facilitate the development of new disease-specific research centers or augment the capability of existing centers.

Projects



Dr. Hugh Xia
Junior Investigator

Neurabins/PPI Targeting in Synaptic Plasticity

Hugh Xia, Ph.D. (LSUHSC) to understand mediators of learning and memory. The protein, neurabin, regulates the plasticity of nerve connections by determining the availability of protein phosphatase critical to memory. Results will provide insights into therapies for Alzheimer's and other neurodegenerative diseases.

Inflammatory Signaling in Epileptogenesis

Alberto Musto, M.D., Ph.D. (LSUHSC) studies chemical messengers of inflammation in the development of seizures. Controlling the action of the chemical messenger, platelet-activating factor may limit or prevent seizures and if so, could lead to new therapeutic approaches.

Neural Mechanisms of Speech Processing

Hamilton Farris, Ph.D. (LSUHSC) Hearing has the ability to perceive sounds produced by one source while rejecting interference from others. Research for this project explores a model system to tackle complex processing: the auditory grouping of speech-like calls in túngara frogs. This research will contribute to the understanding of language pathologies.

Regulation of K⁺ currents in Neuronal Excitability

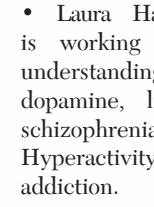
Laura Schrader, Ph.D. (Tulane University) This project, studies how potassium may help prevent brain cell damage and death by controlling the neurotoxic chemical cascade following brain injury like in stroke. Progress could lead to the development of a drug to treat stroke.



Pilot Projects



• John Doucet, Ph.D. (Nicholls State University), aims to understand how humans inherit fingerprint patterns. Because fingerprint patterns are sometimes malformed as a result of disease, this project could provide a mechanism for early diagnoses.



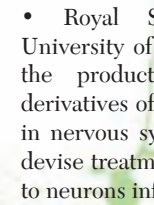
• Laura Harrison Ph.D. (LSUHSC), is working on developing a new understanding of disorders involving dopamine, like Parkinson's Disease, schizophrenia, Attention Deficit Hyperactivity Disorder, and drug addiction.



• Fiona Inglis, Ph.D. (Tulane University), is studying how dendrites form. Dendrites, from the Greek dendron meaning tree, are the branched projections of a nerve cell which conduct electrical stimuli to the body of the cell. Understanding how dendrites take their shape may represent a possible therapeutic target in neuronal disease and injury.



• Gary LaFleur, Ph.D. (Nicholls State University), studying fish neurotoxins in garfish to learn exactly how they affect the physiology of neurons and whether or not the toxin is synthesized by the fish itself or by a microbial organism living symbiotically with the fish.



• Royal Saunders, Ph.D. (Xavier University of Louisiana), is investigating the production and metabolism of derivatives of polyunsaturated fatty acids in nervous system injury, specifically to devise treatments to prevent the damage to neurons inflicted by injury.