



Gallaudet University

PhD in Educational Neuroscience

Gallaudet's PhD in Educational Neuroscience (PEN) program pioneers the exciting interdisciplinary discipline called Educational Neuroscience, the sister discipline of Cognitive Neuroscience.

Core Binding Principles:

The core binding principle that coheres the discipline of Educational Neuroscience is that the human brain and early life experiences and environment contribute to childhood learning, as well as the evolution of learning across the lifespan. While several disciplines have contributed to the formation of Educational Neuroscience, the discipline is unique in that it uses the advent of modern neuroimaging technology (such as fNIRS, EEG, and fMRI), and decades of advances in behavioral experimentation, to provide new comprehensive answers to core problems in learning that no one discipline alone has achieved.

Educational Neuroscience is Cohered Along Three Unifying Goals:

- (1) To discover the timing, sensitive periods, and neuroplasticity in child development and learning. Key questions include what are the optimal learning periods when children must experience important types of knowledge and learning, and how may we best facilitate learning should key learning periods be missed?
- (2) To advance discovery and new knowledge in five domains essential to learning and education, including language and bilingualism, reading and literacy, math and numeracy, science and critical thinking, and social-emotional, family and cultural learning, and includes advanced study in memory, attention, perception, action, and visual processing.
- (3) To conduct neuroscience research that results in usable, meaningful, and translatable scientific knowledge and discovery that benefits society.

PEN Students marry scientific discoveries about the human brain and child development, and how people learn, in principled ways through "two-way" communication across science and society.

Graduates of the PEN program achieve outstanding expertise in cutting edge cognitive neuroscience neuroimaging, behavioral research, and the ethical and principled ways to conduct neuroscience research, with a focus on learning in all young children, and a strength in young deaf, hard of hearing, and deaf blind visual learners.

The PEN program readies students for a wide range of career choices including university professorships, and other STEM-related research, public, professional, and governmental positions.



Our PEN students graduate prepared to make ground-breaking contributions to science and society!

Graduates from the PhD Program in Educational Neuroscience will:

- Gain cutting-edge expertise in the world's most advanced scientific neuroimaging and behavioral methods in Cognitive Neuroscience; and understand the ethical principles of brain research when conducted with human participants across diverse groups.
- Acquire specialized knowledge in the neural, cognitive, educational, family, and sociocultural factors that impact all human learning, especially those of the young deaf visual learner.
- Develop knowledge of the meaningful and principled, mutually beneficial, two-way means and methods to translate scientific discoveries to education, and education to science.
- Develop research skills and critical thinking by conducting independent research leading to a dissertation, publications, and professional public presentations.
- Develop university teaching and mentorship skills, as well as professional communication, leadership, and advanced statistical and neuroimaging technology knowledge and skills.

Program Contact Information

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PEN Program Founders

Dr. Laura-Ann Petitto, Head Founding Member, Steering Committee Chair

Dr. Thomas Allen, Co-Founding Member, Program Director

Dr. Melissa Herzig, Co-Founding Member, Assistant Program Director

Discovery and Innovation - PEN Faculty Labs



The Petitto Brain and Language Laboratory for Neuroimaging (BL2)

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Discovery and Innovation - Science of Learning Center, VL2 Labs



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