

Transcript: PEN Orientation Welcoming Remarks

Professor Laura-Ann Petitto

Ph.D. in Educational Neuroscience (PEN) program

co-founder and steering committee chair

Co-PI and Science Director, National Science Foundation and Gallaudet University

Science of Learning Center, Visual Language and Visual Learning

Founder and Scientific Director, Brain and Language Laboratory for Neuroimaging

This document is a transcript of the first of two videos of Dr. Laura-Ann Petitto's remarks to new students as they enter Gallaudet University's Ph.D. in Educational Neuroscience program. Here, Dr. Petitto discusses Cognitive Neuroscience and describes the core features of the exciting new field of Educational Neuroscience, as well as the outstanding strengths of the PEN program.

Hello, I'm Dr. Laura-Ann Petitto. I'm the co-founder and steering committee chair of the Ph.D. program. I'm happy to be here today.

Welcome to the Ph.D. in Educational Neuroscience program here at Gallaudet University. This is a time of many changes and scientific discoveries and growth.

We chose you, and you chose us. We chose each other. You should feel honored that you were chosen — this was a tough competition. You succeeded among the top students in the nation who applied. So, thank you for coming here and thank you for choosing us.

What is Educational Neuroscience? What is this field all about? Educational Neuroscience is about learning at the heart of early child development and the early school years. What kind of content do they study? Imagine a star with five points – focusing on content in each area. These areas are: language and bilingualism, math and numeracy, science and critical thinking skills, social and emotional development, and reading and literacy.

Now, what is cognitive neuroscience? That involves content and processing, The content component involves broad mental life, the way we think, reason, and solve problems, and memory and language. The processing component involves perception, learning, et cetera. How do cognitive neuroscientists do their work?

What are the methods? Basically, there are two methods: These involve neuroimaging – the study of the human brain – and behavioral analysis, together.

So, is that it? We're done? That's what you'll study? No. What do educational neuroscientists DO?

You will do – and they do – research, basic science research, on how children learn in early life and also you will gain new knowledge on how to collect these scientific findings in the lab and translate them and provide them to society. You will gain new knowledge in how to translate this scientific knowledge to benefit all young children, especially young deaf visual learners.

What do Educational Neuroscientists think? They have a commitment to two principles: a commitment to two-way communication between science labs and society. Second, they are committed to communicating their findings with the public through translation of this information. Understand that educational neuroscientists themselves do not do the translating, instead they are committed to translation and how best to communicate their findings to benefit society.

Why do we all do this? Because we hope to have an explosive impact on society. Because young children who have different developments can't wait until the sum total of years of research are complete. We need to have scientists who are committed to translating their work and know how to communicate with society with the goal of benefiting young children.

Our goals for you graduate students ... what will you do here? First, you will do amazing basic science, the best science possible. You will learn and know the best science of your field. You will know the overarching discussions in your field. You will learn powerful critical thinking and analytical skills. You will know the principles of translation, how to take your science lab findings and translate them to the public for the betterment of society. So, what makes this Ph.D. program special?

First, our program incorporates five different departments. We avoid traditional knowledge silos. We interact with and integrate different departments into one program. Also, you will have strong relationships with the NSF-Gallaudet Science of Learning Center, and you will enjoy the different students, opportunities, and participation in the student leadership team. Our PEN program's standing is very high at Gallaudet University, in Washington, D.C., and around the world. It is very respected. We have 22 Memorandum of Understanding, MOUs, which means 22 partnerships with universities around the world. This means for you a wealth of opportunities – you can gain experience in different neuroscience laboratories around the world, learn the world of science as it is now, what different countries and universities are doing. Also, VL2 and the PEN program are growing! We have new faculty, which means new learning opportunities, new content areas of focus, new techniques, new grant-writing opportunities, and new publishing opportunities for you.

What are the PEN program's strengths in content? WE are very strong in language and bilingualism, reading and literacy, action and perception, and math and numeracy and how they relate to reading, and more. If you recall that Educational Neuroscience star with five points, we hit on all of them. We hit all of these areas that make up this new field called Educational Neuroscience.

Another strength of the PEN program is our several brain imaging technologies here. We have fNIRS, EEG, and fMRI through our relationship with Georgetown University. We also have amazing, advanced behavior measurement technology such as a motion capture lab and a new thermal infrared imaging equipment. We also have advanced eye-tracking technology. You have many opportunities to train on neuroimaging, measurement, and data analysis.

Yet another strength of our program is the neuroimaging center in the heart of the BL2 lab, the Brain and Language Laboratory for Neuroimaging. Here, you can become certified in your choice of neuroimaging system and interact with students from around campus who are fascinated with neuroimaging. BL2 is a beautiful training ground for all our PEN students.

Our PEN strengths also involve our translation. Here you will have opportunities to participate in the creation of new apps and literacy materials that have a tremendous future. Our motion capture lab is one example.

Your role will become, essentially, on the world stage. You will become leaders in the world and in our ability to communicate this new discipline and its translational impact on the world.

So, to sum up: congratulations and welcome to the Ph.D. in Educational Neuroscience program! Thank you.

Video produced and edited and transcript developed by Tara Schupner Congdon, VL2 Manager of Communications.