

Dr. Blaine Moore: Establishing “Synaptic” Connections at Lake Forest College

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Only a few weeks into the school year, Dr. Blaine Moore has already begun to establish “synaptic” connections as a new Professor of Neuroscience and soon-to-be chair of Neuroscience (beginning Spring 2025) at Lake Forest College (LFC). Coming in with over 22 years of neuroscience teaching and research experience, Dr. Moore has many aspirations and goals for the program, his courses, and his research lab.

Dr. Moore has had an extensive journey through academia, and it began through an early influence and aspiration to embark on a career in medicine. Dr. Moore went to the University of North Florida for undergraduate studies wanting to become a doctor, in response to his father being diagnosed with cancer in the skull base, which made him become interested in the brain, neuroanatomy, and elements of oncology. At North Florida, Dr. Moore took a biopsychology course which showed him how neuroscience and psychology interfaced with biology, sparking his passion to pursue this burgeoning field. Later, Dr. Moore realized that medical school was not the right path for him and pursued graduate studies (PhD) at the University of Florida College of Medicine in neuroscience, where he studied cellular mechanisms of ethanol toxicity and worked on animal models of fetal alcohol syndrome. Despite the move from Jacksonville to Gainesville, Dr. Moore was grateful for the support he was given by his family and was grateful to be able to continue his studies in close geographic proximity to his loved ones.

After getting his PhD in Neuroscience, Dr. Moore pursued his Postdoctoral studies at the University of Pennsylvania, where he worked alongside his advisor, Virginia Lee, a leader not only in the Alzheimer’s field but in the broader neurodegenerative disease field. This work, focused on proteolysis of Alzheimer’s amyloid precursor protein, fueled his interest in studying neurodegenerative diseases. After his postdoc, he went to teach as a visiting professor at Haverford College, a small liberal arts college outside of Philadelphia. There he could observe the differences between larger research universities, state schools and liberal arts colleges. Dr. Moore says, “I was excited to teach within the liberal arts model, and I enjoyed it...I knew I wanted a career teaching and researching in that context.” A year later, he became an assistant professor at Kalamazoo College, where he worked for 22 years in the Biology Department. Dr. Moore mentions how he rose from being an assistant professor to a tenured associate professor and, eventually, a full professor.



It was when he saw a listing for a senior-level position at LFC that he decided to take a chance on a new opportunity. Dr. Moore mentions that because of his heavy cell biology teaching load at Kalamazoo, he did not always get the opportunity to develop new courses in neuroscience. He also mentions that one of the major reasons he chose to apply for the position at LFC was due to the neuroscience focus of the position and ability to develop and teach some of the classes he was unable to offer at Kalamazoo. He also noted the impressive Neuroscience program, effective leadership by Dr. Deb-Burman and Dr. Kelley, and rapport with faculty during his campus visit.

After Dr. Moore’s interview at LFC, he left extremely impressed with the quality of students whom he said, “are the best assets of the academic programs here.” He also says, “The students are motivated in a way that is inspiring and impressive. Their enthusiasm is matched only by their preparation which explains the amazing outcomes they achieve.” Dr. Moore also notes that the extensive research experiences, connections to medical institutions, and the number of alumni that attend graduate school is due to their motivation along with the resources available in the Neuroscience program. He also mentions how the faculty here have been so kind and welcoming; it is just the cherry on top of the sundae.

Currently, Dr. Moore is teaching two courses in the fall and one in the spring. He is teaching a senior seminar called “Mechanisms of Neurological Diseases” (NEUR 477) where his students are directing the course. The course will cover five topics of either neurological diseases, disorders, or conditions of their choice. They will read primary articles and learn to write grant proposals. Dr. Moore believes that this is truly a capstone experience and will give them valuable scientific skills.

His second course called “Investigations in Neurodegeneration” (NEUR387) is an experiential learning course that allows students to conduct experiments using a cell culture model to understand the molecular mechanisms on Alzheimer’s Disease (AD). The course intends to allow students to take charge of designing reasonable and practical experiments, being responsible for their system while gaining exposure to laboratory research. The students are also gaining insight into what different model systems can do for the AD field. As a student in his class, this course is interesting, motivating, and exciting. I really love this new addition of a neurobiological based course, which some other neuroscience students can also agree we need more of. I highly recommend this course to anyone in the major.

Dr. Moore will also be teaching one of the core courses (NEUR 301) “Neuron to Brain” in the spring, where students will be surveying neuronal signaling, structure of the brain and function anatomically, and how the brain changes from development to adulthood. Dr. Moore has been excited to work alongside another new professor in both the Neuroscience program and Psychology Department, Dr. Hannah Carlson, to coordinate how to best transition the teaching of neuroanatomy between professors and what the student experience should feel like. Dr. Moore is most excited to teach long tract neuroanatomy and aspects of his Alzheimer’s research to students, along with some electrophysiology simulations using some cool computer-based programs he has found to teach about voltage-dependent permeabilities, neuronal signaling, etc.

Dr. Moore’s first part of his teaching philosophy is to level the playing field for all his students. He does not assume knowledge from his students and starts with teaching the basics such as: reviewing basic cellular and molecular biology, then intro to neuroscience and moving towards intro to neurobiology (broad to specific). Another part of his philosophy is to give students agency where they can choose which primary articles and topics they are interested in and design their own experiments. The third part of his teaching philosophy is that he wants to empower students to become their authentic selves. Dr. Moore believes that giving them the tools they need helps enable that progression from exploration, giving them a growth mindset that will only benefit in the future.

Aside from teaching, Dr. Moore specializes in laboratory research and is currently starting up his lab where he works with an immortalized cell line, CHO 695 (Chinese hamster ovary) cells to study properties of Alzheimer’s Disease such as the secretory proteases, beta-amyloid

plaques (A β) and proteolysis of the amyloid precursor protein (APP). He has been currently expanding his cell line work to study a new aspect of AD protein evolution, an outgrowth of collaborative work with a colleague at Kalamazoo College that has been going on for the last five years. This new effort will focus on the “evolutionary context and functional evolution of APP and A β and will round out our earlier work on the evolution of the secretases.” Dr. Moore is extremely excited to start a collaboration with Rosalind Franklin University (RFU) and loves the close proximity, allowing for access to resources such as mass spectrometry, where his past collaborations were as far as a two-hour transportation. Dr. Moore also notes that he can see the culture of undergraduate research that exists on campus and feels he can plug in and continue that culture.

Outside of the classroom and lab, Dr. Moore loves to spend time with his wife Andreea and young kids Cora and Victor, play musical instruments, and listen to music- in fact, Dr. Moore has been playing the drums since he was twelve years old. Another of his hobbies includes collecting audiophile equipment to piece together an audio system and collecting vinyl records. Dr. Moore also enjoys playing sports with his kids, spending time outdoors, and playing cards. Dr. Moore is also a big believer in work-life balance. He says, “I like to work hard, but also there are times that we need to unwind and enjoy life.” He also says, “I want to model that for my students and kids. It is so easy to get caught up in the stress of academic life, and it is important to have outlets outside of work to prevent burn out.”

Even though Dr. Moore is still getting settled, LFC and the Neuroscience program are lucky to have him, and they will always be in great hands with him here. If you ever have time, stop by, and say ‘hi’ to Dr. Moore- he is always excited for conversation with students.

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