

Dr. Evelyn Sinclair

Postdoctoral Fellow in Computational Neuroscience

Department of Bioengineering · Vertex University

✉ e.sinclair@vertex.edu

☎ +1 (555) 019-2834

🌐 sinclair-lab.nexa.org

🔗 github.com/esinclair

Date: August 3, 2026

Postdoctoral Search Committee

Department of Bioengineering

Synapse Institute of Technology

88 Science Parkway

Meridian, MD 20814

Subject: Application for Postdoctoral Position

Lab: Computational Neuroimaging Lab

Reference: Job ID #SF-2026-NEURO

Dear Members of the Search Committee,

I am writing to express my strong interest in the Postdoctoral Fellowship in the Computational Neuroimaging Lab at the Synapse Institute of Technology, under the mentorship of Professor Marcus Vance. As a PhD candidate in Computational Neuroscience at Vertex University (defending this October), my research focuses on developing scalable machine learning models to decode high-dimensional fMRI data in real-time. I believe my background in statistical signal processing and neural networks aligns perfectly with your lab's initiatives in mapping dynamic functional connectivity.

During my doctoral work under the guidance of Dr. Sarah Jenkins, I developed a generative framework—open-sourced as *NeuroFlow*—to model transient state transitions in resting-state functional networks. By leveraging variational autoencoders, our model improved temporal state classification by 34% compared to traditional models, resulting in two first-author publications in *The Journal of Neural Computation*. Additionally, I collaborated with the Nexa Clinical Research Center to apply this framework to identify early biomarkers of cognitive decline in a clinical cohort.

I am particularly drawn to the Vance Lab's pioneering work on deep-brain stimulation target optimization using closed-loop neural feedback. I am eager to apply my expertise in variational inference and real-time decoder design to your clinical studies, bridging the gap between high-fidelity network simulations and real-time clinical intervention.

Thank you for your time and consideration. I welcome the opportunity to discuss my research and how my background fits your lab's goals. I am available for an interview at your earliest convenience.

Sincerely,

Dr. Evelyn Sinclair

Postdoctoral Fellow

Vertex University

📎 **Enclosures:**

Curriculum Vitae · Research Statement · Teaching Philosophy · Reprints