The **Unit on Computational Decision Neuroscience (CDN)** at the **National Institute of Mental Health Intramural Research Program** is seeking a full-time Postdoctoral Fellow.
The lab is focused on understanding the neural and computational bases of adaptive and maladaptive decision-making and metacogniyion and their relationship to mental health. Current studies investigate how internal states lead to biases in decision-making and how this exacerbated in mental health disorders. We focus on how these constructs express across diagnoses in a dimensional way, ranging from individuals who are free from significant symptomatology to individuals with clinical levels of depression, anxiety, substance use disorder, etc. Our approach involves a combination of computational model-based tasks, questionnaires, biosensor data, fMRI, and intracranial recordings. The main models of interest come from neuroeconomics, reinforcement learning, Bayesian inference, signal detection, and information theory.

No prior experience with psychiatry research is needed but a familiarity with the constructs and models of interest in the lab (value-based learning and decision-making, metacognition, belief updating, emotion regulation, and/or effort-cost estimation) is desirable, as these are universally important for understanding adaptive healthy functioning and psychiatric disease.

The fellow will have access to data from several ongoing projects, as well as a large cache of previously collected behavioral and resting-state, task-based, and structural MRI datasets. This is an exciting opportunity for a candidate with established programming and analytic skills to work at the cutting edge of psychiatry research and computational cognitive neuroscience and build their CV with publications and presentations. Extensive mentorship in writing research and fellowship grant applications will be provided. In addition, the fellow will have the opportunity to receive additional mentorship from, and work with, other faculty and trainees within the highly collaborative Intramural Research Program across different institutes including NIMH, NIDA, NIAAA, and NINDS.

Job Requirements

- Assisting with collection and analyzing fMRI data and/or human electrophysiological intracranial recordings
- Conducting advanced analysis of behavioral, clinical, physiological, electrophysiological, and imaging data, including but not limited to, computational modeling and machine learning
- Integrating complex datasets across multiple modalities, including fMRI, electrophysiology, biosensor data neuroendocrinology, behavior, and self-report
- Preparation of manuscripts and presentation of results at scientific meetings
- Designing novel experiments to examine the neurocomputational basis of decision-making and metacognition
- Co-mentoring and mentored mentorship of students and research coordinators

Qualifications
The successful candidate will meet the following requirements, including:

- A PhD in neuroscience, cognitive science, psychology, engineering, or a related field
- Strong programming skills (ideally in Python, and/or MATLAB, R)
- An ability to work well in multidisciplinary and highly collaborative teams
- An interest in translational research
- A track record or potential for scholarly productivity
- Effective independent problem-solving and task prioritization

Experience with any of the following is not required, but preferred:

- Computational modeling
- Dynamic analysis of longitudinal or time series data
- Machine learning

The postdoc will work under the supervision of Dr. Silvia Lopez-Guzman on projects that aim to understand (1) the process of adaptively evaluating options and committing to a choice; (2) how changes in internal and motivational states may abnormally shape decisions in individuals with and without psychopathology; and (3) how cognitive and metacognitive resources support these adaptive or maladaptive decision-making processes. The CDN lab leverages the rich clinical resources and computational expertise across the NIH, and collaborates actively with labs that specialize on addiction, depression, anxiety, and pain. The lab is an active part of a growing community of expert labs on learning and decision-making who work together to improve our understanding from the circuits and behavioral neuroscience level to the human cognitive and clinical levels, making this a unique opportunity for any scientist with an interest in decision science and computational psychiatry.

Compensation
The pay range for this role is $60,250 - $84,450 annually. Actual salaries depend on a variety of factors, including experience and education. The salary range or contractual rate listed does not include other forms of compensation or benefits.

How to Apply
To apply, please send your CV and a cover letter to Dr. Silvia Lopez-Guzman (silvia.lopezguzman@nih.gov) with the subject “CDN Lab Postdoc App”. Inquiries about any aspect of the position are very welcome!