CHOATE

Shanna Murray, PhD

Patent Agent

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Practice Areas

Intellectual Property Protection

Education

Yale University
PhD (2023) Neuroscience

Johns Hopkins University
BA (2014) Cognitive Science

Admissions

U.S. Patent & Trademark Office

Dr. Shanna Murray assists Choate's life sciences clients by utilizing her background in neuroscience to help with the preparation and prosecution of patent applications, as well as freedom-to-operate and patentability analyses.

Industry Experience

Prior to joining Choate, Shanna received her PhD in Neuroscience from Yale University. While at Yale, she worked across the labs of Hyojung Seo and Daeyeol Lee, where she studied the spiking activity of prefrontal neurons that encode short-term memory for learning. In her thesis work, Shanna investigated the neural basis of temporal credit assignment in a non-human primate model using a reinforcement learning computational framework and extracellular electrophysiology techniques, including high channel count silicon probes.

Shanna received her bachelor of arts in Cognitive Science with a Neuroscience concentration from Johns Hopkins University. Following her undergraduate degree, she worked as a post-baccalaureate research fellow at the National Institute for Mental Health in the Section on Integrative Neuroimaging. In this role, Shanna applied computational methods to investigate human adolescent neurodevelopment and the neural basis of reward processing in patients with schizophrenia.

Complementing her technical expertise with experience in scientific communication and outreach, Shanna participated in outreach through Yale's Interdepartmental Neuroscience Program, Pathways to Science, and Yale Open Labs. While working in the DC area, she participated in science policy forums to promote the use of neuroscientific evidence in juvenile sentencing and drug policymaking. Shanna also attended the Weill Cornell 'Law and Neuroscience' Summer Institute, where she collaborated with scientists of various backgrounds, explored cutting-edge topics at the intersection of law and neuroscience, and synthesized scientific developments for debate on the role of brain imaging data in the courtroom.

Publications and Presentations

- "Neural basis of temporal credit assignment during reinforcement learning," presenter, Society for Neuroscience, November 2022
- "Exploration of the eligibility trace as a link between choice and temporally delayed feedback," presenter, Society for Neuroscience, October 2019
- "A novel paradigm for studying causal inference and temporal credit assignment in non-human primates," presenter, Society for Neuroscience, November 2018
- "Neural circuits for working memory and reinforcement learning in primate prefrontal and parietal circuits," presenter, Society for Neuroscience