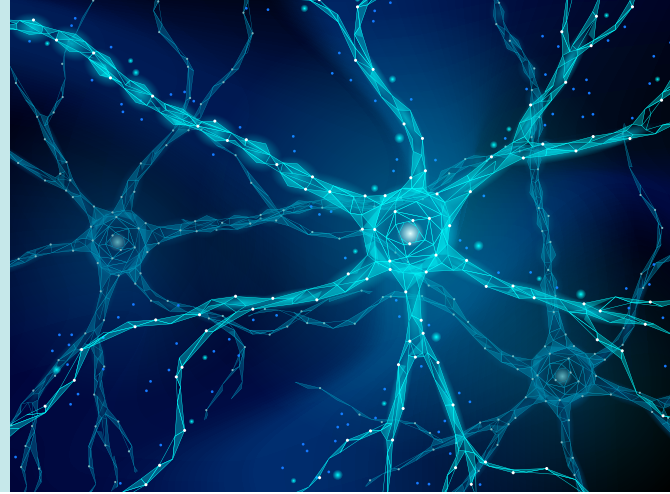


Louis Stokes Alliances for Minority Participation

LSAMP DAY

Neurodegenerative Diseases and Treatment Options

Thursday, July 21, 2022 | 1–2:30 p.m. | bhcc.edu/lsamp



Hosted by
Suman Mukherjee

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Guest Speaker

João D. Pereira, Ph.D.

Scientist II, Nereid Therapeutics
MGH Research and Career Paths

Dr. Pereira obtained his Ph.D. in Neuroscience from the Department of Biochemistry of the University of Cambridge, U.K, in 2012, with a thesis on the role of the epigenetic modifier Ezh2 in neocortical development, mentored by Dr. Rick Livesey. He then joined Harvard Medical School and Massachusetts General Hospital as a post-doctoral researcher in the laboratory of Dr. Brian Wainger.

Dr. Pereira's work focused on human models of neurodegenerative diseases, including Amyotrophic Lateral Sclerosis (ALS) and Alzheimer's Disease, using induced pluripotent stem cells (iPSCs) and organoids, complex cellular models that replicate features of human organs. In ALS, the first pre-symptomatic event is the loss of innervation at the level of the specific motor neuron/muscle synapse, the neuromuscular junction (NMJ).

Due to species-specific distinctions between animal models and human motor neuron biology, the NMJ has been challenging to study in a human context. Dr. Pereira developed a model of sensorimotor organoids, complex in vitro cultures that differentiate into multiple cellular components affected by ALS, including motor neurons, skeletal muscle, astrocytes, and microglia. These cellular components interact, spontaneously forming functioning neuromuscular junctions, and the skeletal muscle shows motor-neuron-dependent contractions. Comparing genome-edited human iPSC cell lines carrying causal mutations for ALS to control lines, Dr. Pereira isolated multiple distinct disease phenotypes at the level of the neuromuscular junction, opening the way for new therapeutic approaches. After becoming an Instructor in Neuroscience, Dr. Pereira developed deep learning and artificial intelligence approaches to characterizing other rare neurodegenerative diseases.

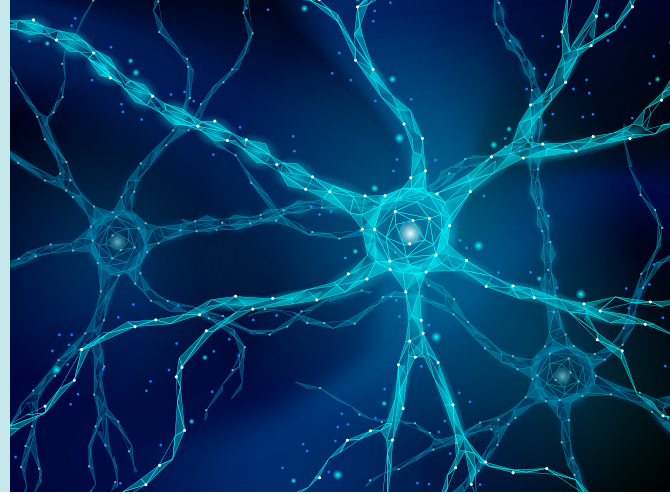
Dr. Pereira has recently joined Nereid Therapeutics, where he continues to develop neuronal models of neurodegenerative diseases at an industry level.

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Join LSAMP for a discussion on Neurodegenerative diseases and treatment options featuring Joao D. Pereira, Ph.D., Scientist II, Nereid Therapeutics who will discuss MGH Research and Career Paths. Offered in partnership with UMass Boston, the LSAMP grant at BHCC supports opportunities for internships and career development for minority students majoring in STEM.

Agenda

1–1:05 p.m.

Welcome

Suman Mukherjee, Ph.D.
LSAMP Coordinator

Laura Rubin, Ph.D.
Dean, Division of Science, Engineering and Mathematics

1:05–1:15 p.m.

Introduction and Examples of Neurodegenerative Diseases

Suman Mukherjee, Ph.D.
LSAMP Coordinator

1:15–1:25 p.m.

Internship Experience by BHCC STEM Students, A Project to Help and Support for Healthcare of Indigenous Community

Sharmila Khada Thapa
IT Technology Transfer Option major

Simona Matiukaite
Computer Science major

1:25–1:35 p.m.

STEM Internship Opportunities

Katharine V. Colello
Learn and Earn Coordinator

1:40–2:15 p.m.

Guest Speaker: João D. Pereira, Ph.D.

Scientist II, Nereid Therapeutics
MGH Research and Career Paths

2:15–2:30 p.m.

Q&A and Open Discussion with Dr. Pereira