



DUKE UNIVERSITY MEDICAL CENTER

Department of Surgery

Division of Neurosurgery

4/23/12

Chairman, Computational Neuroscience Position, Brown University

Dear Chairman:

I would like to strongly recommend John Pearson, Ph.D., for the computational neuroscience opening at Brown University. I have known Dr. Pearson for over a year now, in his role as a postdoctoral fellow working on human neurophysiology under one of my NIH grants. I have been interested in the possibilities of exploring human brain areas for many years, and during deep brain stimulation procedures I have established an intraoperative research platform, wherein awake patients can perform various video tasks while recording subcortical neurons. Dr. Pearson has been instrumental in establishing a new intra-operative task, in his cooperative position between Dr. Michael Platt and myself, focusing on aspects of risk and reward in human subthalamic nucleus. This task builds upon years of intraoperative microarray recordings from human brain, initially for identifying feasibility of a human subcortical brain-machine interface (ie, Patil et al, Neurosurgery 55: 27-38, 2004). However, Dr. Pearson has now setup and we are currently implementing a video task with a reward element, identifying subgroups of subthalamic neurons which might respond to such rewards. I am optimistic that over the next year we will have identified a number of subthalamic neurons responsive to risk and reward, with Dr. Pearson's expert assistance.

Dr. Pearson is highly personable and works well with both peers and patients in this research. He has an excellent computational background and has published numerous papers, with a recent focus on exploratory behavior and reward and prediction. His publication record demonstrates a very high quality of research. His background as a physicist enables a high level of both programming skill in implementing tasks as well as the computational background to assess neuronal spike firing trains. During his postdoctoral training he has now developed an extensive "vision" for his future research efforts, indicating a thorough understanding of literature in this field and his ability to plan ahead with a highly innovative series of experiments. Dr. Pearson's ability to fully take on a role of a neurophysiologist is exceptional, as I have collaborated with several physicists entering neurobiology who have had difficulty with the concepts of biological variation and the experimental aspects of neurobiology.

In summary, Dr. Pearson is likely to be an excellent fit for your computational neuroscience position. Please let me know if there are questions, via email: dennis.turner@duke.edu.

Sincerely,

Dennis A. Turner MA, MD

Professor, Neurosurgery, Neurobiology and Center for Neuroengineering
Duke University Medical Center