Nathaniel Zuk

University of Rochester Medical Center

Department of Neuroscience

601 Elmwood Ave., Box 603

Rochester, NY 14642

[nzuk@ur.rochester.edu](mailto:nzuk@ur.rochester.edu)

Dear Graduate Student / Postdoctoral Fellow Travel Award Committee,

I am writing to apply for the Postdoctoral Fellow Travel Award for the ARO MidWinter Meeting in February 2019. For this upcoming Meeting, I have submitted an abstract entitled “Specialized High-Level Processing of Speech and Music Revealed with EEG”, co-authored with Emily Teoh and Edmund Lalor, PhD. This work is inspired by previous work using fMRI, which showed that regions of the auditory cortex preferentially respond to naturalistic speech and music. Here, we demonstrate that EEG also preferentially responds to speech and music, and we also show that these signals have unique temporal patterns such that individual speech and music samples can be classified from two seconds of EEG. Moreover, we show that these responses are attributed to high-level processing.

We think this work demonstrates the strength of using EEG to study the temporal processing of speech and music. Additionally, we think our results highlight the importance of using naturalistic speech and music to study the brain, since other rhythmic sounds and synthesized sounds with identical statistics had weaker responses. Since the ARO MidWinter meeting is the preeminent conference for auditory research, we are looking forward to discussing this work with experts in the field and getting feedback on future directions of this project, especially pertaining to modeling high-level processing of speech and music. We also think this work has important implications generally for the research of auditory cortical processing in humans.

As I write this, I am in the process of moving to Dublin, Ireland from the University of Rochester where I will join Edmund Lalor’s group at Trinity College. By February, the trip to the MidWinter meeting will be much more costly for me since I will be traveling from Dublin. Due to limited funds, it will be difficult for us to fund a trip for me to come to Baltimore, MD to present this work. The Postdoctoral Fellow Travel Award will greatly assist us in offsetting these costs. As well, this is the first time our lab will be attending ARO, and we are excited to present new work from our lab to the community.

Thank you for your consideration.

Sincerely,

Nathaniel Zuk, PhD

Postdoctoral Associate, University of Rochester

Research Fellow, Trinity College Dublin