This talk is supported by the Graduate School of Humanities, Nagoya University.

# Analyzing linguistic data with linear mixed-effects modeling, generalized additive modeling, and a random forest analysis

**Speaker**: **Yoichi Mukai** **Date & Time**: December 19 (Tuesday), 18:15-19:45 (90 min.) **Place**: General Education Building North Wing 405, Nagoya University (全学教育棟・北棟 405),

**The phonetic reduction of nasals and voiced stops in Japanese across speech styles:**
I used a large-scale Japanese speech corpus to examine the phonetic variability found in nasals and voiced stops and to describe how that variation and reduction occurs across speech styles. I used linear mixed-effects models to (1) measure whether duration and intensity differences for nasals and voiced stops differ across speech styles and (2) predict the relative duration and intensity difference of target segments across speech styles.

**Pupil dilation as a processing measurement of morphologically complex words:**
Using pupil dilation as a processing measurement, I examined the time-course of the processing of pseudo complex words (e.g., corner), as compared to transparent complex words (e.g., cleaner) and monomorphemic words with an embedded stem (e.g., turnip). I used generalized additive mixed models to (1) model non-linear relationships across the three types of words over time and (2) control for autocorrelation.

**Rhythm and accent: Durational variability as a perceptual correlate of accentedness in L2 speech:**
Using rhythm metrics, which measures durational variability of vocalic and consonantal intervals, I examined durational variability as a perceptual correlate of accentedness in L2 conversational speech. I used random forest analysis to (1) predict accent ratings as a function of rhythm metrics and (2) estimate the importance of each rhythmic measure as a predictor.

**Biography:**
**Yoichi Mukai** is a PhD candidate in the Department of Linguistics at the University of Alberta. He received an MA in Applied Linguistics and Discourse Studies from Carleton University and a post-graduate certificate in TESL from Algonquin College. He has taught Japanese at Carleton University and Université du Québec en Outaouais. His research interests lie in experimental linguistics, particularly phonetics and psycholinguistics. Currently, his research focuses on pronunciation variants, particularly reduced forms, of Japanese words in casual speech and the effect of orthographic and phonological consistency in spoken word recognition.

**I am currently running an experiment here and desperately looking for participants who are native speakers of English. Details are in the QR code and link below.** http://bit.ly/2yKJ4qj
Any questions, please contact: Katsuo Tamaoka (tamaoka@nagoya-u.jp) or Koji Miwa (kojimiwa@nagoya-u.jp)