**ICS Summer Research Award Recipient
Katherine Phelps, Graduate Student, ICS and Department of Linguistics**Rebecca Scarborough, Assistant Professor, Department of Linguistics and
Fellow, Institute of Cognitive Science
Lewis Harvey, Jr., Professor, Department of Psychology and Neuroscience and
Fellow, Institute of Cognitive Science

**Title:** Learning Xorx and Bjaran:  Perceptual (Re)training of Acoustic and Phonetic Speech Boundaries

**Abstract:** Experience with the sounds of one’s native language has measurable effects in the perception of non-native speech. Adults often have difficulty perceiving phonetic distinctions in a new language that are easily distinguished by native speakers of that language.  Recent research in the area of second-language speech perception indicates that training on acoustic dimensions underlying phonemic contrasts can help improve speech perception in the target language.  However, it is still an open question as to which acoustic dimensions are the “right” training dimensions, given the native language of the learner.  This auditory perception study has the goal of re-tuning the perceptual space of adult listeners in order to improve speech perception in a new “language”. Utilizing complex non-speech stimuli, this study probes the effects of training on acoustic dimensions that differ in terms of their relationship to an experimentally established quasi-phonological system.  Similarity judgments and category training with feedback on synthetic auditory stimuli were analyzed using hierarchical modeling and multi-dimensional scaling techniques to determine if, and how, category learning took place.  Results indicate that not all acoustic dimensions are equally useful for learners.  The relationship between training dimensions and those native to the learner must be considered in theories of second-language acquisition, and when developing language training programs.