

## **Position Title: Research Assistant**

### **Job Description & Duties:**

Through previous BSIG funding, I was able to film and record 10 male and 10 female speakers producing five syllable sentences in five different emotion states: Happy, Sad, Angry, Fearful, and Neutral. Each speaker produced approximately 100 stimuli for a total of 2000 auditory stimuli and 2000 video/facial stimuli. The emotion expressions were elicited using three different techniques: film clips; novel excerpts and posed expressions. These stimuli were then viewed by 120 participants who were required to indicate what emotion they thought the speaker was expressing. The purpose of the BSIG project was to determine if one elicitation method leads to better emotion expressions in speakers in a laboratory setting than others. Stimuli most accurately identified will be used in future projects in my laboratory. Data analysis is currently in progress. However, in order to get a more accurate picture of the effectiveness of the elicitation methods, acoustic and facial coding analyses are needed in addition to the validation data collected from the 120 participants. Thus, the main need for a research assistant through Experience Works is for completion of these analyses.

#### **1) Acoustic Analysis**

2000 auditory stimuli were recorded through BSIG funding. Each stimulus is five syllables in length. A research assistant will need to analyze each stimulus and extract information about the frequency, intensity and duration of the stimuli using Praat software. Students in linguistics are trained in this software in the Acoustics course I teach (LING 2P91). Thus, completion of this course will be a requirement for the RA so that he/she has at least basic understanding of both the software and of spectrograms.

#### **2) Coding of Facial Stimuli**

Facial Affect Coding is a coding system developed by Paul Ekman to analyze the fine facial movements that contribute to and differentiate between different emotion expressions. Similar to the acoustic analysis, there are approximately 2000 dynamic facial stimuli as well as 2000 static facial that need to be analyzed. The research assistant will be recording information about eye brow, eye, cheek, and various mouth movements for each stimulus. I am attending an intensive one-week training course for this coding system (March 12-19, 2011) that will provide me with the software as well as the information needed to train a research assistant to do this.

#### **3) Video and Audio Editing**

Once the Acoustic Analysis and Coding of Facial Stimuli is completed, stimuli that best represent each of the five emotion categories for auditory only, visual only, and auditory visual expressions will need final editing. 250 stimuli (50 for each emotion category) in each of the three types (auditory-only, visual-only, and auditory visual), will be selected on the basis of the validation of the 120 participants (completed through BSIG funding), and the acoustic analysis and facial affect coding results. The initial stimuli were filmed using a green screen and external microphone. Some video and audio editing was previously completed prior to the validation by the 120 participants, but final editing will need to be done on the selected stimuli to ensure the stimuli is of the highest quality. The research assistant will use Final Cut software to further eliminate green hues from the green screen filming, brighten the face, and edit the length so that the stimuli are all the same length. For the audio stimuli, background noise will need to be eliminated and clips edited to be equal in length using Audacity software.

#### **4) Participant Data Collection**

The research assistant will assist with data collection that uses the video and audio stimuli from above. Participants will be older adults with hearing loss and they will be presented the stimuli in auditory only, visual only, and congruent and incongruent audiovisual conditions. Participants will receive two blocks of the stimuli, one with hearing aids and one without. This project has already received ethics approval and a student is currently collecting data as part of a research course with me. However, data collection will continue into the Spring/Summer of 2011. The research assistant will be able to independently work with participants after initial training and assistance from me.

## 5) Data Entry

The research assistant will be responsible to enter results of the acoustic analysis and facial affect coding into an SPSS file. In addition, he/she will also enter results of data collection with adults with hearing loss into SPSS. If the research assistant has completed a statistics course (preferable), he/she will also complete some preliminary data analysis using SPSS.

## 6) Literature Review

The research assistant will be responsible to review the literature databases and keep the literature for my lab up to date. We will discuss the literature in the field on a regular schedule in order to compliment the laboratory tasks with knowledge of the field so the RA has a clear sense of the purpose and applicability of the tasks he/she is completing.

## **Training & Skills:**

The student will receive training in:

- 1) Praat - The research assistant hired should already have some preliminary knowledge of Praat from the completion of LING 2P91. However, I will review the program with him/her and complete some of the stimuli in tandem to ensure the RA is comfortable with this analysis.
- 2) Facial Affect Coding - I will train the RA in this coding system. Since I will have just recently completed an intensive workshop that aims to not only provide me with the skills but with the information needed to train research assistants, I am confident that I can provide excellent training in this area. This is a specialized coding system designed by one of the lead researchers in facial affect so I am excited to be able to provide the opportunity to learn about this to a student research assistant.
- 3) Final Cut and Audacity software- My lab uses Mac and Mac software including Final Cut and Audacity. I recognize that some students are unfamiliar with Mac so I will initially familiarize the student research assistant to Mac and then train him/her on how to do the video and audio editing using these programs. I have trained previous RAs on both programs.
- 4) I will review the protocol for data collection with the RA as outlined in the ethics proposal. As part of this study, the RA will need to learn to use SuperLab software, which is a stimulus presentation software. The software itself has an excellent tutorial which I will have the RA complete and then I will demonstrate how to use the software with participants and extract the resulting data from it.
- 5) I will have the SPSS file ready for data entry (with all columns labeled, etc.) and will complete 1-2 participants files with the research assistant to ensure he/she is comfortable with entering data. I will also show the student how to do basic statistics in SPSS (i.e. descriptive, crosstabs, correlations).
- 6) I will create a list of search terms and authors that the research assistant can use and will also provide access to the articles I have already collected by creating a joint folder in Dropbox.