CASE WESTERN RESERVE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES

Department of Psychological Sciences

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October 30, 2015

Nord Grant Application Committee
UCITE
Case Western Reserve University
Cleveland, OH 44106

Dear Committee Members:

I am a new Assistant Professor in the Communication Sciences Program in the Department of Psychological Sciences. I am a certified pediatric audiologist and have a Ph.D. in audiology. I will regularly teach *Introduction to Audiology* (COSI 370) and *Speech and Hearing Science* (COSI 321, both required coursed for our communication sciences majors. These courses are also required for students to be accepted into graduate programs in communication sciences. I have not previously received funding from the Nord Grants. I am requesting Nord funds to purchase items to facilitate learning about the ear and hearing while enhancing classroom education for undergraduate Communication Sciences (COSI) students.

Video otoscope and 3-D model of the ear

COSI students begin their education about the ear in our undergraduate program, typically learning about the ear and hearing via traditional classroom instruction and required reading materials. However, for a beginner student, conceptualizing and recalling all of the details about the anatomy and physiology of the ear can be daunting. Providing students with experiential learning in the classroom will improve learner outcomes with respect to the structure and function of the ear. This can be achieved by providing students with an opportunity to use video otoscopy and have hands on access to anatomical models of the ear.

Otoscopy is used to visualize the external ear. This allows clinicians to look into an ear canal and visualize a person's tympanic membrane (or eardrum). Video otoscopy is a modern and convenient tool that 1) allows for a visual record to be obtained of an eardrum and 2) allows the clinician to share with the patient what he or she observes about the eardrum. Anatomical ear models can be purchased to teach people about the anatomy of the ear. Since the majority of our ear is housed deep within our temporal bone, it is often hard for students to visualize the anatomical structures of the ear. By providing students an opportunity to feel and dissect a 3-D model of the ear and to visualize eardrums will greatly enhance student learning and will enrich classroom instruction.

To be accomplished during the grant period:

During the grant period all teaching materials will be purchased. These materials will be

used during classroom instruction for undergraduate COSI students learning about the ear and hearing. These items will be housed in the Speech and Auditory Research Laboratory located on the third floor of the Cleveland Hearing and Speech Center Building and students will have an opportunity to use these materials outside of traditional classroom meeting times.

Importance for both the discipline and the Principal Investigator:

Over fifty percent of speech-language pathologists work with people who have hearing loss. At CWRU I am responsible for educating our students about hearing. Our students enroll in two courses that heavily focus on audition, *Introduction to Audiology* (COSI 370) and *Speech and Hearing Science* (COSI 321). Having technology such as a video otoscope, and having 3-D models of the ear will facilitate learning for our students. A stronger foundation of the fundamentals of hearing will enhance their skillset and their ability to be a clinician prepared to work with people that have hearing loss. Further, the work conducted in my research laboratory lends to undergraduate involvement. Strengthening the education our students receive about the ear and hearing, will allow for a more engaged and effective undergraduate research cohort to recruit from for participation in the laboratory. At this time department funds are not available to support this purchase.

Relationship of this particular project to overall research agenda:

A focus of our laboratory is to better understand basic auditory function and the impact of hearing loss. To do this we often create customized acoustic stimuli that are essential for the experimental work conducted in our laboratory. Though creating such stimuli requires a specific skill set, strong undergraduate students, that are willing to put in the time, can be trained to participate in this work. By using these teaching tools we can improve and strengthen the education of our undergraduate students with respect to their understanding of the ear, which will in turn, strengthen our laboratory team.

Sincerely,

Assistant Professor

Professor and Chair

Nord Grant Budget

The applicant, Dr. Lauren Calandruccio, has not previously received NordGrant funds.

Item	Cost
Anatomical Ear Model	$200
Anatomical Ear Model laminated posters	$100
Anatomical ossicle model	$40
Video otoscope	$500
Specula for otoscope	$80
Grand Total	**$920**

Budget Approved by Dr. Lee Thompson, Professor and Chair