Advanced Predoctoral Research Training in Communication Sciences and Disorders

ABOUT THE PROGRAM

This innovated NIDCD T32 program provides multidisciplinary training to prepare a cadre of academic researchers who are highly literate in the methods, objectives, and theoretical structure of health research in communication sciences and disorders (CSD).

The training program will provide each predoctoral trainee with:
- Deep knowledge base for research in his/her chosen research area
- Working knowledge in the breadth of basic, translational, clinical, and implementation research
- Broad understanding of the interdisciplinary efforts in CSD
- Intrinsic comprehension of the values, activities, and culture in health research
- Understanding and a skill set, appropriate to the trainee's career-stage, in the full range of professional roles of an academic researcher in CSD (e.g., manuscript preparation, lab management, grant writing, compliance with governmental regulations)

APPLICATION DEADLINE

The application deadline for this program is January 1, 2018.

HOW TO APPLY

❯ Interested applicants should apply to BU's PhD program in Speech and Hearing Sciences using the BU Online Application for Graduate Admissions: bu-sar.liaisoncas.com/applicant-ux/#/login.

❯ As part of the application, you will need to provide your GRE scores, official transcripts, a research statement, samples of written work (e.g., theses, publications) if available.

❯ At least three letters of reference from individuals familiar with your academic ability.

❯ To ensure that you will have a suitable mentor, you are strongly encouraged to meet with a research faculty member about your research interests prior to submitting an application. A personal interview by the doctoral program faculty is usually required.

The multidisciplinary opportunities at BU make it an ideal environment for predoctoral training. Accordingly, predoctoral trainees are afforded latitude in constructing a customized Training Plan, developed in conjunction with the feedback from their primary training mentors.

TRAINING

The training plan provides advanced research training across the health research continuum from basic research through translation, clinical, and implementation stages. A critical focus is addressing the severe shortage of highly trained researchers across the full spectrum of demand and opportunity in CSD. This program is supported by an NIDCD institutional training grant.

Consistent with the predominant training model at BU, the training program will adopt a strong mentoring model. Each trainee, either as a requirement of admission to a PhD program, or in the second year of graduate training, will be associated with a graduate mentor with whom the trainee is expected to study throughout the program. This longstanding model of PhD training provides the trainee with an immediate source of guidance and advice, as well as a peer group of trainees in the mentor's lab group.

Key Elements of the Predoctoral Training Plan

- Affiliation with a Preceptor and a lab group throughout the training period (either on Lab Rotation or as required for admission and continued good standing)

- Attendance at the weekly CSD Research Seminar, held throughout the Fall and Spring Semesters

- Active participation and poster presentation in the Annual CSD Research Day Retreat

- One 40-minute presentation annually to the CSD Research Seminar

- An F31 application (or comparable) to be submitted approximately 3 months prior to the trainee's ascension to candidacy

- Completion of a one-semester rotation with a lab group outside the trainee's primary research area, and in a complementary part of the health research continuum. For example, a trainee whose research interests are in basic science will complete a lab rotation in an area that is clinical or translational

- Enrollment in one course in each of three areas of health research (i.e., one course each in (1) preclinical / basic research, (2) clinical research, or (3) research that is translational or implementational)

- Teaching experience (required for trainees who lack teaching experience and intend to pursue academic research positions)

- Training in Responsible Conduct of Research

About the Training Environment

Boston University is one of the largest private universities in the United States and is heavily invested in graduate research education; forty-two percent of students are enrolled in graduate or professional programs. Last year, the University had research and grant contract revenue of $355 million.

More specific to the proposed training, BU has a particularly long and distinguished history of excellence and innovation in CSD research and education. Alexander Graham Bell was a professor of the mechanisms of speech in BU's School of Oratory from 1874-1879. During his time at BU, Bell lectured on vocal physiology and elocution and developed programs to teach deaf students to speak, read and write. He invented the telephone in 1876 after his research on a "new device to transmit speech" was funded by the university.

This tradition has continued, with graduate and post-graduate research training in CSD at BU. Current and former BU trainees have gone on to secure tenure-track faculty positions at research and teaching institutions, as well as positions in industry and administration.

Training faculty are conducting research across the broad range of CSD, and along the entire continuum of health research. The university-wide research and training environment in CSD is extensive, diverse, and internationally recognized. Faculty members in at least four colleges (Health and Rehabilitation Sciences, Engineering, Arts and Sciences, Medicine) are involved in a wide array of basic/pre-clinical, translational, and clinical application/implementation research on topics in CSD. Participating faculty have leading expertise in biomedical and electrical engineering, computer science, computational neuroscience, speech and hearing science, physiology and neurophysiology, experimental psychology, and linguistics, as well as clinical training in neurology, clinical psychology, audiology, and speech-language pathology.

Program Faculty

EXECUTIVE COMMITTEE

Christopher A. Moore, Ph.D.
Program Co-Director
Dean, College of Health and Rehabilitation Sciences: Sargent College, Boston University
Professor, Speech, Language, and Hearing Sciences (SLHS) and Otolaryngology
Research interests: speech development, normal and disordered speech motor control, research training and career development

Barbara Shinn-Cunningham, Ph.D.
Program Co-Director
Professor, Biomedical Engineering, Boston University
Research interests: behavioral, brain imaging (EEG/MEG and fMRI), and physiological experiments to create and test quantitative, computational models of auditory processing in everyday tasks

H. Steven Colburn, Ph.D.
Professor, Biomedical Engineering, Boston University
Director, Boston University Hearing Research Center
Research interests: psychoacoustics, computational modeling of the auditory system, binaural and spatial hearing

Frank Guenther, Ph.D.
Professor, Boston University Departments of SLHS and Biomedical Engineering
Research interests: neural bases of speech, neurocomputational modeling, neuroimaging, electromagnetic articulometry, and auditory and motor psychophysics

Swathi Kiran, Ph.D.
Professor, Boston University Department of SLHS
Research interests: development of rehabilitation approaches and mechanisms of neural plasticity in individuals with post-stroke aphasia, structural and functional neuroimaging, connectivity analyses of neuroplasticity after rehabilitation in monolingual and bilingual individuals with aphasia

Cara Stepp, Ph.D.
Assistant Professor, Boston University Departments of SLHS, Biomedical Engineering, and Otolaryngology
Research interests: application of engineering techniques to the study and rehabilitation of sensorimotor disorders of voice and speech, voice and resonance disorders, Parkinson's disease, muscle tension dysphonia, and velopharyngeal dysfunction

Helen Tager-Flusberg, Ph.D.
Professor, Boston University Departments of Psychological and Brain Sciences, Anatomy and Neurobiology, and Pediatrics
Research interests: neurocognitive bases of the language, communication, and related social-cognitive deficits in autism (Autism Spectrum Disorders, ASD) and other neurodevelopmental disorders, behavioral/cognitive methods, structural imaging (MRI, DTI), novel methods for assessing language and related cognitive functioning in minimally verbal individuals with ASD

Gloria Waters, Ph.D.
Boston University Vice President and Associate Provost for Research
Professor, Department of SLHS
Research interests: language and memory processes

ADDITIONAL LABORATORY PRECEPTORS

Sudha Arunachalam, Ph.D.
Assistant Professor, Boston University Department of SLHS
Research interests: early language development, language processing, and lexical and syntactic representation

Helen Barbas, Ph.D.
Professor, Boston University Department of Health Sciences
Research interests: organization of the prefrontal cortex, patterns of neural interactions, computational neuroscience, evolution of the neocortex, and the neural basis of cognitive-emotional interactions

David Caplan, M.D., Ph.D.
Adjunct Professor, Boston University Department of SLHS
Professor of Neurology, Harvard Medical School
Research interests: neural organization that supports language, in particular syntactically based sentence comprehension, using deficit-lesion correlations and fMRI.

Jordan Green, Ph.D.
Professor of Communication Sciences and Disorders, Massachusetts General Hospital Institute of Health Professions
Research interests: disorders of speech production, oromotor skill development for early speech and feeding, and quantification of speech motor performance

Robert Hillman, Ph.D.
Adjunct Professor, Boston University Department of SLHS
Co-Director and Research Director, Center for Laryngeal Surgery and Voice Rehabilitation at Massachusetts General Hospital
Professor of Surgery, Harvard Medical School
Research interests: normal and disordered voice production, alaryngeal speech, objective measures of voice and speech, and treatment of voice disorders

Gerald Kidd, Ph.D.
Professor, Boston University Department of SLHS
Research interests: psychoacoustics, speech perception and intelligibility, and cognitive factors in hearing

Amy Lieberman, Ph.D.
Assistant Professor, Boston University School of Education
Research interests: American Sign Language, deaf education, language & literacy education, language development, parent-child interaction

Tyler Perrachione, Ph.D.
Assistant Professor, Boston University Department of SLHS
Research interests: developmental disorders of language and reading, human voice recognition and social auditory perception, mechanisms of plasticity in human auditory cortex, and brain bases of complex auditory processing

Vasileios Zikopoulos, Ph.D.
Assistant Professor, Boston University Department of Health Science
Research interests: organization and dynamics of cortical circuits and their disruption in autism, development of excitatory and inhibitory frontal circuits in the brain, neural organization and dynamics of attention, social interactions and language, and emotional responses