Cara E. Stepp, PhD

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Education:

2009 **Ph.D. in Biomedical Engineering**
Speech and Hearing Bioscience and Technology Program
Division of Health Sciences & Technology
Harvard University - Massachusetts Institute of Technology, Cambridge, MA
Thesis: *Characterization and Improvement of the Clinical Assessment of Vocal Hyperfunction*

2008 **S.M. in Electrical Engineering and Computer Science**
Department of Electrical Engineering and Computer Science
Massachusetts Institute of Technology, Cambridge, MA
Thesis: *Electromyographic Control of Prosthetic Voice after Total Laryngectomy*

2004 **S.B. in Engineering Science**
Picker Engineering Program
Smith College, Northampton, MA
Cum Laude, Highest Honors in Engineering Science
Thesis: *The Acoustics of the Human Middle-Ear Air Space*

Academic Appointments:

2019 – present Program Director, Doctoral Program in Speech, Language, and Hearing Sciences, Boston University
2018 – present Associate Professor, Department of Speech, Language, and Hearing Sciences, Boston University (*primary*)
2018 – present Associate Professor, Department of Biomedical Engineering, Boston University
2018 – present Associate Professor, Department of Otolaryngology, School of Medicine, Boston University
2016 – 2018 Faculty, Executive Board Member, Center for Research in Sensory Communication and Emerging Neural Technology (CRESCENT), Boston University
2015 – 2018 Assistant Professor, Department of Otolaryngology, School of Medicine, Boston University
2014 – present Affiliated Faculty, Undergraduate Program in Neuroscience, Boston University
2014 – present Visiting Scientist, Boston Children's Hospital
2013 – 2015 Faculty, Center of Excellence for Learning in Education, Science and Technology (CELEST), Boston University
2011 – present Faculty, Hearing Research Center, Boston University
2011 – 2016 Faculty, Center for Computational Neuroscience and Neural Technology, Boston University
2011 – present Training Faculty, Graduate Program for Neuroscience (GPN), Boston University
2011 – present Training Faculty, GPN – Computational Specialization, Boston University
2011 – 2018 Assistant Professor, Department of Biomedical Engineering, Boston University
2011 – 2018 Assistant Professor, Department of Speech, Language, and Hearing Sciences, Boston University (*primary*)
2009 – 2011 Postdoctoral Research Associate, Department of Computer Science and Engineering, University of Washington
2009 – 2011 Senior Fellow, Department of Rehabilitation Medicine, University of Washington

Awards and Honors:

2019 Presidential Early Career Award for Scientists and Engineers (PECASE)
2018 Fellowship of the Association, American Speech-Language-Hearing Association
2017 Second place, Best Poster Award, The Voice Foundation Annual Symposium
2016 First place, Best Poster Award, The Voice Foundation Annual Symposium
2015 American Speech-Language-Hearing Association Research Mentoring-Pair Travel Award (Mentor of Carolyn Novaleski)

2015	Second place, Best Poster Award, The Voice Foundation Annual Symposium
2015 – 2020	National Science Foundation Faculty Early Career Development (CAREER) award
2014 – 2017	Junior Faculty Fellow, Hariri Institute for Computing and Computational Science and Engineering, Boston University
2013	American Speech-Language-Hearing Association Research Mentoring-Pair Travel Award (Mentor of Stephanie Lien)
2013	Boston University Clinical and Translational Science Institute K-L2 Fellowship
2013	Travel Fellowship, Invited Discussant, International Workshop on Brain-Machine Interface Systems
2012 – 2015	Peter Paul Career Development Professorship, Boston University
2012	American Speech-Language-Hearing Association Award for Early Career Contributions in Research
2012	Conference Fellowship, ASHA/NIDCD Lessons for Success Research Conference
2011	NSF Neural Engineering Travel Award
2010	Student Excellence in Neural Interfacing Travel Award
2009	American Society of Neurorehabilitation (ASNR) Presidential Award
2009	NIH T32 Fellowship for postdoctoral study in Rehabilitation Science at UW
2008	Raymond H. Stetson Scholarship in Phonetics and Speech Science, Honorable Mention
2004	NIH T32 Fellowship for graduate study in Harvard-MIT SHBT Program
2004	Adeline Devor Penberthy Memorial Prize (Smith College Engineering)
2004	NSF Graduate Fellowship, Honorable Mention
2004	Phi Beta Kappa (science and arts honor society)
2004	Sigma Xi (research honor society)
2004	Tau Beta Kappa (Smith College engineering honor society)

Current Research Funding as PI

Hariri Institute Research Incubation Award, Boston University — Stepp (PI) — 06/29/20-06/28/22
Interactive biofeedback to improve voice masculinity in transmasculine speakers
Role: PI (contact; with co-PI L. Tracy)
The goal of this grant is to investigate acoustic parameters that can be targeted in voice modification in order to meaningfully alter the perception of gender of transmasculine speakers. Novel speech resynthesis techniques will be used to modulate speech parameters of transmasculine speakers prior to and following voice masculinization, creating a set of voice samples that will be used in an auditory-perceptual experiment to determine which speech parameters are most important for the perception of gender. Results will be used to develop an online voice modification module that can be used to provide voice modification instruction to transmasculine speakers in the comfort and privacy of their homes.
$41,280 direct + $0 indirect = $41,280

COVID-19 Related Research, Boston University CTSI — Stepp (PI) — 06/01/20-03/31/21
Accuracy of acoustic measures of voice via tele-therapy platforms
Role: PI
The goal of this grant is to systematically evaluate the accuracy of common acoustic measures of voice in videoconferencing platforms, to provide critical insight about which measures are valid.
$6,805 direct + $0 indirect = $6,805

NIH NIDCD R13DC017674 — Stepp (PI) — 12/01/2018-11/30/2023
Boston Speech Motor Control Symposium
Role: PI
The goal of this R13 application is to support an intentionally accessible and inclusive regional conference in speech motor control: the Boston Speech Motor Control Symposium (BSMCS). BSMCS will provide travel awards to trainees and will incorporate best-practices to allow for inclusion of working parents, such as free on-site childcare and access to lactation rooms. Finally, BSMCS will offer continuing education units to attendees who are speech-language pathologists.
17,160 direct + $0 indirect = $17,160

NIH NIDCD R01 DC016270 Stepp (PI) 05/01/18-04/30/23
Voice and speech sensorimotor control in Parkinson's disease
Role: MPI (contact; with F. Guenther)
The goal of this project is to assess feedback and feedforward mechanisms, voice and articulation, and auditory and somatosensory modalities of speech motor control in Parkinson's disease, all in relation to functional speech outcomes (speech intelligibility and naturalness).
$1,577,025 direct + $1,023,970 indirect = $2,600,995

NIH NIDCD P50 DC015446 Hillman (PI) 04/01/17-03/31/22
Clinical Research Center for the Improved Prevention, Diagnosis, and Treatment of Vocal Hyperfunction
Role: Project PI (Project 2)
The goal of this Clinical Research Center is to better understand vocal hyperfunction. The proposal includes three core centers and three projects. The aims of Project 2, "Sensorimotor mechanisms of vocal hyperfunction", are to determine the functional role of auditory feedback in the vocal control of individuals with vocal hyperfunction and the effect of voice therapy on that control.
Project 2: $1,250,050 direct + $810,034 indirect = $2,060,084

NIH NIDCD R01 DC015570 Stepp (PI) 07/01/16-06/30/21
An acoustic estimate of laryngeal tension for clinical assessment of voice disorders
Role: PI
The goal of this project is to systematically validate relative fundamental frequency as a measure of laryngeal tension in two voice disorder populations that span age and etiology (functional vs. neurological). We will examine the measure's diagnostic sensitivity and specificity to the presence of these voice disorders and its sensitivity to changes in laryngeal tension.
$1,299,304 direct + $782,979 indirect = $2,082,281

Current Research Funding as co-I or consultant

NIH NIDCD R43 DC018437 Contessa (PI) 09/01/19-08/31/20
Adaptive and Individualized AAC
Role: consultant
The goal of this project is to provide an improved human machine interface able to accommodate varying degrees of inter- and intra-subject residual motor function and context dependent impairments to provide individuals with severe physical impairments the opportunity for improved societal integration and quality of life. Consultant Stepp will collaborate to translate optimized communication devices developed in typical speakers for individuals with impaired motor control.
$224,701

NSF PAC (SBE) 1655287 Bohland (PI) 03/01/17-02/28/20
The effects of delayed auditory feedback on speech sequencing: acoustics, physiology, and computational modeling
Role: co-I
The research objective of this proposal is to determine the role that auditory feedback plays in the online sequencing of speech sounds using acoustic and electromagnetic articulography behavioral experiments and computational modeling.
$288,593 direct + $186,907 indirect = $475,500

NIH NIDCD R01 R01DC002852-21 Guenther (PI) 08/01/16-07/31/21
Neural Modeling and Imaging of Speech
Role: co-I
The overall goal of this study is to improve our understanding of the neural mechanisms that underlie speech production and their breakdown in voice disorders. Co-I Stepp will collaborate on Aim 3, the specific goal of which is to investigate somatosensory feedback control of phonation in individuals with the voice disorder adductor spasmodic dysphonia (ADSD).
$1,250,000 direct + $811,146 indirect = $2,061,146

Current Trainee Research Funding

NIH NIDCD F31 — Abur (Trainee) — 09/01/20-08/31/23
Longitudinal Changes to Speech in Parkinson's disease Phenotypes
Role: Sponsor
The goal of this fellowship is to provide Ms. Abur with the experiences and training to develop a research career in the area of motor speech disorders. The research proposes to test the hypothesis that voice and articulatory speech subsystems are differentially impacted by neurodegeneration in Parkinson's disease.
$102,474 direct + $0 indirect = $102,474

Dudley A. Sargent Research Fund — Abur (Trainee) — 06/01/19-11/01/20
Acuity to changes in self-produced vocal pitch in Parkinson's disease
Role: Mentor
The goal of this project is to determine whether acuity to changes in self-produced vocal pitch differs in PD compared to controls and how acuity measures are affected by experimental stimuli timing. These results will clarify discrepancies in prior work and increase understanding of vocal pitch perception in PD.
$5,000 direct + $0 indirect = $5,000

Dudley A. Sargent Research Fund — Park (Trainee) — 06/01/19-11/30/20
Perceptual and acoustic assessment of strain using synthetically modified voice samples
Role: Mentor
The goal of this project is to improve the perceptual and acoustic evaluation of strain used in clinics with a well-controlled, multi-listener, auditory-perceptual study using synthesized voice samples.
$5,000 direct + $0 indirect = $5,000

NIH NIDCD K23 DC016656 — Smith (PI) — 12/01/18-11/30/23
Speech markers of cognitive impairment in Parkinson's disease
Role: Co-mentor
The goal of this mentored patient-oriented research career development project is to provide Dr. Smith with dedicated research time in order to access the experiences and training to develop a research career in the area of speech motor control in Parkinson's disease. The research goal is to identify speech and language markers sensitive to mild cognitive impairment in Parkinson's disease.
$876,000 direct + $70,080 indirect = $946,080

Pending Research Funding

NIH NIDCD R01 DC015570-6 — Stepp (PI) — 07/01/21-06/30/26
Objective measures for clinical assessment of voice disorders
Role: PI
The goal of this project is to construct and validate automated kinematic and acoustic measures of the primary and secondary symptoms of adductor-type laryngeal dystonia. This cycle of funding aims to assess measures' physiological and discriminant validity (relative to muscle tension dysphonia), sensitivity to change (pre/post treatment), test-retest reliability, and ability to predict voice severity.
$2,344,573 direct + $1,077,323 indirect = $3,421,896
Impact Score: 23; Percentile: 6.0

NIH NIDCD R43 (Phase II SBIR) — De Luca (PI) — 09/01/20-08/31/22
Mobile Application for Muscle Tension Dysphonia
Role: Subcontract PI
The objective of this project is to develop and test an electromyographically controlled EL that can be offered commercially to improve the communication of electrolarynx users.
Subaward to BU: $273,695 direct + $177,902 indirect = $451,597

PCORI COVID-19 Targeted Funding Program — Stepp (PI) — 08/01/20-07/31/21
Accuracy and reliability of voice assessment via telehealth platforms
Role: PI

The objective of this project is to assess which acoustic and auditory-perceptual measures are valid when used during telehealth. We will leverage an existing database of acoustic recordings from individuals with voice disorders, which were recorded in-person in a sound proof booth. We will re-play these recordings over popular telehealth platforms. We will then examine common clinical acoustic and auditory-perceptual measures, comparing performance over telehealth platforms to the original in-person recordings.

$197,114 direct + $78,845 indirect = $275,959

NIH NIDCD R43 (Phase I SBIR) De Luca (PI) 04/01/21-03/30/22
SpeechSense: A Wearable Monitor for Speech Disorders
Role: Subcontract PI
The Phase I deliverable of this project will be to demonstrate the proof-of-concept that speech deficits measured by *SpeechSense*™ in the presence of noise sources have a high degree of correlation with gold-standard acoustic assessments obtained from the same scripted tasks in controlled noise-free conditions.

Subaward to BU: $48,443 direct + $31,488 indirect = $79,931

NIH NIDCD T32 DC013017-6 Moore (PD) 07/01/21-06/30/26
Advanced Research Training in Communication Sciences and Disorders
Role: MPD with C. Moore (contact)
The goal of this training program is to provide a broad clinical perspective in pre- and post-doctoral trainees, incorporating didactic and research experiences across the full continuum of effective training in human health (i.e., from investigations of basic and disrupted mechanisms or communication processes, to treatment research, translation to the clinic, and broad implementation across health systems). Multiple program director Stepp will be responsible for close management of admissions, career development, curricular design, and trainee progress and outcomes.

$2,327,200 direct + $153,375 indirect = $2,480,575

Completed Research Funding

Coulter Translational Partnership Award Budson (PI) 08/01/15 – 07/31/16
Effectiveness of home-based electronic cognitive therapy in Alzheimer's disease
Role: Co-PI (with Andrew Budson and Swathi Kiran)
This project proposes the development of the Constant Therapy home-based electronic therapy program for patients with mild cognitive impairment due to Alzheimer's disease and patients with mild Alzheimer's disease dementia to improve their cognitive ability and quality of life.

$149,854 direct + $0 indirect = $149,854

NSF GARDE (ENG) 1510563 Stepp (PI) 07/01/15-06/30/18
Prosodic control of speech synthesis for assistive communication in severe paralysis
Role: co-PI (with Susan Fager)
The research objective of this proposal is to test the hypothesis that providing users of alternative and augmentative communication (AAC) with a method for one-dimensional prosodic control will result in speech synthesis that is more natural to listeners and provides greater function to users.

$132,964 direct + $84,707 indirect = $217,670

Hariri Research Award, Boston University Stepp (PI) 07/01/15-06/30/16
NinjaGame: Optimizing Neuroplasticity through Speech-driven Gameplay
Role: PI
The goal of this grant is to enhance current software to provide feedback about speech production in a cross-platform manner that incorporates the latest technologies and software engineering practices, resulting in a software application that will have greater longevity. This updated software will be used to study how immersive gaming can optimize neuroplasticity to promote speech rehabilitation.

$20,000 direct + $0 indirect = $20,000

NSF, CHS (CSE) & GARDE (ENG) 1452169 Stepp (PI) 04/01/15-03/31/20
CAREER: Enabling Enhanced Communication through Human-Machine-Interfaces
Role: PI

The research goals of this study are to develop personalized head and neck muscle control techniques and communication interfaces based on human speech production and perception to increase information transfer rates relative to currently available human-machine-interfaces.

$336,111 direct + $201,426 indirect = $537,538

BU Center of Excellence for Learning in Education, Science and Technology Stepp (PI) 03/01/15-02/28/16
Increasing usability of human-machine-interfaces through novel sensorimotor inputs
Role: PI
The goal of this project is to develop tactile and auditory inputs to human-machine-interfaces for the BU Unlock framework to provide communication for a wider array of individuals with severe motor impairments.

$87,597 direct + $0 indirect = $87,597

Boston Rehabilitation Outcomes Center Pilot Grants Stepp (PI) 06/01/14-05/31/15
Identifying motor performance outcome measures that underlie speech intelligibility in Parkinson's disease
Role: PI
The goal of this project is to develop motor outcome measures that correlate with functional measures of speech intelligibility in PD. Biosignals recorded during a variety of motor tasks will be examined in order to find optimal instrumented outcomes of motor function underlying speech intelligibility in PD.

$30,414 direct + $1,986 indirect = $32,400

BU Center of Excellence for Learning in Education, Science and Technology Stepp (PI) 03/01/14-02/28/15
Increasing usability of human-machine-interfaces through novel sensorimotor inputs
Role: PI
The goal of this project is to develop tactile and auditory inputs to human-machine-interfaces for the BU Unlock framework to provide communication for a wider array of individuals with severe motor impairments.

$72,087 direct + $0 indirect = $72,087

Deborah Munroe Noonan Memorial Research Fund Stepp (PI) 09/01/13-08/31/14
Videogame-Based Speech Rehabilitation for Children with Hearing Loss
Role: PI
The goal of this project is to develop a rehabilitative platform for individuals with hearing loss using a sensor designed to measure skin vibration and speech acoustics and to conduct feasibility testing in children with hearing loss to determine the potential short-term gains in speech function.

$72,000 direct + $8,000 indirect = $80,000

NIH NIDCD R42DC011212 (Phase II STTR) Robertson (PI) 07/01/13-6/30/15
Development of an Electromyographically Controlled Electrolarynx Voice Prosthesis
Role: Subcontract PI
The objective of this project is to develop and test an electromyographically controlled EL that can be offered commercially to improve the communication of electrolarynx users.

Subaward to BU: $30,027 direct + $19,307 indirect = $49,334

NIH NIDCD R03DC012651 Stepp (PI) 03/05/13-02/28/16
Automation of Relative Fundamental Frequency Estimation NCE through 2/28/17
Role: PI
The goal of this project is to develop clinical collection protocols and signal processing tools for automatic estimation of relative fundamental frequency in speakers with typical and disordered voice.

$300,000 direct + $180,927 indirect = $480,927

American Speech-Language-Hearing Foundation Stepp (PI) 01/01/13-12/31/13
Improving the reliability of estimates of voice relative fundamental frequency
Role: PI
New Century Scholars Research Grant: to develop a corpus of text tokens resulting in maximally internally consistent relative fundamental frequency (RFF) estimates and to determine whether the reliability of RFF estimation is improved by using a small skin-surface accelerometer instead of a microphone.

$10,000 direct + $0 = $10,000

NIH NCATS KL2TR000158 Center (PI) 01/01/13-04/30/13
Boston University Clinical and Translational Science Institute Fellowship (KL-2)
Role: Trainee
The goal of this project is to provide protected time and research mentoring for selected junior faculty in clinical and translational sciences.
$19,035 direct + $0 indirect = $19,035

Boston University Grants for Undergraduate Teaching and Scholarship Program 11/01/12-06/30/13
Undergraduate Research on the Effects of Modality on Sensory-Motor Learning
Role: PI
The goals of this project are to implement and pilot test use of tactile feedback for human-machine-interface (HMI) control and to design and test healthy participant performance using auditory, visual, and tactile feedback for HMI control.
$1,850 direct + $0 indirect = $1,850

ALA-Nestle Nutrition Institute Dysphagia Research Grant Stepp (PI) 07/01/12-06/30/13
Voluntary Control of Anterior Neck Musculature in Parkinsonian Dysphagia
Role: PI
The goal of this project is to investigate the abilities of individuals with dysphagia due to Parkinson's Disease to perform voluntary control of anterior neck musculature through interaction with an electromyographic videogame.
$10,000 direct + $0 indirect = $10,000

Coulter Translational Partnership Award Kiran (PI) 07/01/12-6/30/13
Constant Therapy: a tablet therapy platform for speech language therapy for individuals with brain damage
Role: co-PI
The goal of this project is to create an online health system that provides ongoing rehabilitation services to patients via iPads, iPhones, and the Web.
$124,000 direct + $0 indirect = $124,000

Boston University Integrated Biomedical Pilot Grant Program Stepp (PI) 07/01/12-04/30/13
Nasal acceleration for ambulatory monitoring of nasality in VPD
Role: PI
The goal of this project is to determine the relationships between normalized nasal acceleration and nasalance in pediatric population with velopharyngeal disorders (VPD) and to determine the usability of normalized nasal acceleration in the same population.
$19,084 direct + $0 indirect = $19,084

Dudley A. Sargent Research Fund Stepp (PI) 05/01/12-04/30/13
Improving the reliability of RFF-based measures of voice production
Role: PI
The goal of this project is to develop a corpus of text tokens results in maximally internally consistent RFF (relative fundamental frequency) estimates and to determine whether the reliability of RFF estimation is improved by the use of neck acceleration.
$6,905 direct + $0 indirect = $6,905

American Speech-Language-Hearing Foundation Stepp (PI) 01/01/12-12/31/12
Voluntary Control of Anterior Neck Musculature in Dysphagia
Role: PI
New Investigator Grant: to investigate the abilities of individuals with post-stroke dysphagia to perform voluntary control of anterior neck musculature through interaction with an electromyographic videogame.
$5,000 direct + $0 indirect = $5,000

University of Washington Stolov Research Grant Stepp (PI) 05/01/10-05/01/11
Augmentative vibrotactile feedback for control of a prosthetic hand
Role: PI
The goal of this project was to systematically investigate the relative impact of force-based vibrotactile stimulation at multiple body locations and with alternative stimulation paradigms, to identify optimal modes of stimulus presentation for object manipulation.

$1,312 direct + $0 = $1,312

Completed Trainee Research Funding

NIH NIDCD F31 DC016197 Heller Murray (Trainee) 07/01/17-6/30/20
Vocal motor control in children with vocal nodules
Role: Sponsor
The goal of this fellowship application is to provide Ms. Heller Murray with the experiences and training to develop a research career in the area of clinical voice science. The research proposes to test the hypothesis that children with nodules have disordered auditory-motor integration.

$117,204 direct + $0 indirect = $117,204

NIH NIDCD F31 DC014872 Cler (Trainee) 09/01/15-08/30/18
Optimization and prediction for fast and robust AAC
Role: Sponsor
The goal of this fellowship application is to provide Mr. Cler with the training to develop a research career in the area of quantitative design of alternative and augmentative communication (AAC) technology. The research proposes to improve communication rates of AAC users by reducing the time it takes users to select targets by novel arrangement of phonemic targets and dynamically enlarging targets likely to be selected next, thus increasing the size of the target and reducing the time it takes to make a selection.

$114,338 direct + $0 = $114,338

Dudley A. Sargent Research Fund McKenna (Trainee) 06/01/16-10/31/17
Physiological mechanisms of vocal effort
Role: Mentor
The goal of this project is to comprehensively evaluate four physiological mechanisms hypothesized to mediate vocal effort in healthy adults.

$5,000 direct + $0 = $5,000

Dudley A. Sargent Research Fund Heller Murray (Trainee) 06/01/14-10/31/15
Effect of visual feedback on velopharyngeal port control
Role: Mentor
The goal of this project is assess healthy adults' ability to control VP port opening and to generalize control to untrained words, with and without noninvasive visual feedback.

$4,400 direct + $0 = $4,400

Refereed Journal Publications († denotes student / post-doctoral mentee):

88] Hillman R.E., **Stepp C.E.**, Van Stan J. H., Zañartu M., Mehta D.D. "An Updated Theoretical Framework for Vocal Hyperfunction", American Journal of Speech-Language Pathology, *In Press.*

87] Groll M.D.†, Vojtech J.M.†, Hablani S., Mehta D.D., Buckley D.P., Noordzij J.P., **Stepp C.E.** "Automated relative fundamental frequency algorithms for use with neck-surface accelerometer signals", Journal of Voice, *In Press.*

86] Abur D.†, **Stepp C.E.** "Auditory Acuity to Changes in Self-Generated Vocal Pitch in Parkinson's disease", Journal of Speech, Language, and Hearing Research, *In Press.*

85] Tracy, L.F., Segina, R.K.†, Diaz-Cadiz M.E., **Stepp C.E.** "The impact of communication modality on voice production", Journal of Speech, Language, and Hearing Research, *In Press.*

84] Weerathunge H.R.[†], Abur D.[†], Enos N.M.[†], Brown K.M.[†], **Stepp C.E.**, "Auditory-Motor Perturbations of Voice Fundamental Frequency: Effects of Feedback Delay and Amplification", Journal of Speech, Language, and Hearing Research, *In Press*.

83] Brown K.M.[†], Dahl K.L.[†], Cler G.J.[†], **Stepp C.E.** "Listener Age and Gender Diversity: Effects on Voice-based Perception of Gender", Journal of Voice, *In Press*.

82] Buckley D.P., Dahl K.L.[†], Cler G.J.[†], **Stepp C.E.** "Transmasculine voice modification: A case study", Journal of Voice, *In Press.*

81] Cler G.J.[†], McKenna V.S.[†], Dahl K.L.[†], **Stepp C.E.** "Longitudinal Case Study of Transgender Voice Changes under Testosterone Hormone Therapy", Journal of Voice, *In Press.*

80] Buckley D.P., Diaz-Cadiz M.E., Eadie TE., **Stepp C.E.**, "Acoustic Model of Perceived Overall Severity of Dysphonia in Adductor-Type Laryngeal Dystonia", Journal of Speech, Language, and Hearing Research, *In Press*.

79] Smith D.J.[†], Kearney E., **Stepp C.E.**, Guenther F.H. "Contributions of Auditory and Somatosensory Feedback to Vocal Motor Control", Journal of Speech, Language, and Hearing Research, 63(7), pp. 2039-2053, 2020.

78] Groll M.D.[†], Hablani S., Vojtech J.M.[†], **Stepp C.E.** "Cursor click modality in an accelerometer-based computer access device", IEEE Transactions on Neural Systems and Rehabilitation Engineering, 28(7), pp. 1566-1572, 2020.

77] Groll M.D.[†], McKenna V.S.[†], Hablani S.[†], **Stepp C.E.** "Formant-Estimated Vocal Tract Length and Extrinsic Laryngeal Muscle Activation during Modulation of Vocal Effort in Healthy Speakers", Journal of Speech, Language, and Hearing Research, 63(5), pp. 1395-1403, 2020.

76] Vojtech J.M.[†], Hablani S., Cler G.J.[†], **Stepp C.E.** "Integrated head-tilt and electromyographic cursor control", IEEE Transactions on Neural Systems and Rehabilitation Engineering, 28(6), pp. 1442-1451, 2020.

75] Heller Murray E.S.[†], **Stepp C.E.** "Relationships between vocal pitch perception and production: a developmental perspective", Scientific Reports, 10(1), 2020.

74] Heller Murray E.S.[†], Segina R.S.[†], Harvey Woodnorth G., **Stepp C.E.**, "Relative Fundamental Frequency in Children with and without Vocal Fold Nodules", Journal of Speech, Language, and Hearing Research, 63(2), pp. 361-371, 2020.

73] McKenna V.S.[†], Hylkema J.A.[†], Tardif M.C., **Stepp C.E.** "Voice onset time in individuals with hyperfunctional voice disorders: Evidence for disordered vocal motor control", Journal of Speech, Language, and Hearing Research, 63(2), pp. 405-420, 2020.

72] Vojtech J.M.[†], Segina R.K.[†], Buckley D.P., Kolin K.R.[†], Tardif M.C., Noordzij J.P., **Stepp C.E.** "Refining algorithmic estimation of relative fundamental frequency: accounting for sample characteristics and fundamental frequency estimation method", Journal of the Acoustical Society of America, 146(5), 3184-3202, 2019.

71] Broadfoot C.K., Abur D.[†], Hoffmeister J.D., **Stepp C.E.**, Ciucci M.R. "Research-based Updates in Swallowing and Communication Dysfunction in Parkinson disease: Implications for Evaluation and Management" Perspectives of the ASHA Special Interest Groups SIG 3, 4(50, pp. 825-841, 2019. (Invited)

70] Heller Murray E.S.[†], Hseu A.F., Nuss R.C., Harvey Woodnorth G., **Stepp C.E.**, Vocal Pitch Discrimination in Children with and without Vocal Fold Nodules. Applied Sciences, 9(15), pp. 3042, 2019.

69] Park Y.P.[†], Perkell J.S, Matthies M.L., **Stepp C.E.** "Categorization in the perception of breathy voice and its relation to voice production in healthy speakers", Journal of Speech, Language, and Hearing Research, 62(10), pp. 3655-3666, 2019.

68] Park Y.[†], **Stepp C.E.** "The Effects of Stress Type, Vowel Identity, Baseline f0, and Loudness on the Relative Fundamental Frequency of Individuals with Healthy Voices", Journal of Voice, 33(5), pp. 603-610, 2019.

67] Abur D.[†*], Enos N.[†*], **Stepp C.E.** "Visual-analog-scale ratings and orthographic transcription measures of sentence intelligibility in Parkinson's disease with variable listener exposure" American Journal of Speech-Language Pathology, 28(3), pp. 1222-1232, 2019. *These authors contributed equally

66] Heller Murray E.S.[†], Lupiani A.A.[†], Kolin K.R.[†], Segina, R.K. [†], **Stepp C.E.** "Pitch Shifting with the Commercially Available Eventide Eclipse: Intended and Unintended Changes to the Speech Signal", Journal of Speech, Language, and Hearing Research, 62(7), pp. 2270-2279, 2019.

65] Cler G.J.[†], Kolin K.R. [†], Noordzij, J.P.[†], Vojtech J.M.[†], **Stepp C.E.** "Optimized and Predictive Phonemic Interfaces for Augmentative and Alternative Communication", Journal of Speech, Language, and Hearing Research, 62(7), pp. 2065-2081, 2019.

64] Vojtech J.M.[†], Noordzij, J.P.[†], Cler G.J.[†], **Stepp C.E.** "The effects of modulating fundamental frequency and speech rate on the intelligibility, communication efficiency, and perceived naturalness of synthetic speech", American Journal of Speech-Language Pathology, 28(2S), pp. 875-886, 2019.

63] Park Y.P.[†], **Stepp C.E.** "Test-retest reliability of relative fundamental frequency and conventional acoustic, aerodynamic, and perceptual measures in individuals with healthy voices,"Journal of Speech, Language, and Hearing Research, 62(6), pp. 1707-1718, 2019.

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Refereed Conference Papers (†student / post-doctoral mentee, *presenting author):

20] *Cler M.J.†, **Stepp C.E.** “Development and Theoretical Evaluation of Optimized Phonemic Interfaces,” Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility, 29 October – November 1, 2017, pp. 230 – 239. [26.2% acceptance rate]

19] ***Stepp C.E.** “Facial sEMG interfaces for communication access,” Proceedings of the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 25 – 29 August, 2015. [podium presentation] (invited)

18] *Cler M.J.†, Voysey, G., **Stepp C.E.** “Video game speech rehabilitation for velopharyngeal dysfunction: Feasibility and pilot testing,” Proceedings of the 7th International IEEE EMBS Conference on Neural Engineering, 22 – 24 April, 2015, pp. 812 – 815. [poster presentation]

17] *Cler M.J.†, Nieto-Castanon A., Guenther F.H., **Stepp C.E.** “Surface electromyographic control of speech synthesis,” Proceedings of the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 27 – 30 August, 2014, pp. 5848 – 5851. [poster presentation]

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15] *Cler M.J.†, Michener C.M.†, **Stepp C.E.** “Discrete vs. continuous surface electromyographic interface control,” Proceedings of the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 27 – 30 August, 2014, pp. 4374 – 4377. [podium presentation]

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12] Hands G.L.†, Larson E., ***Stepp C.E.** “The role of augmentative visual training in auditory human-machine-interface performance”, Proceedings of the 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 3 – 7 July, 2013, pp.2804 - 2807. [podium presentation]

11] *Thorp E.†, Virnik B.†, **Stepp C.E.** ”Normalization Strategies for Nasal Acceleration to Assess Velopharyngeal Function” Proceedings of the 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 28 August 28 – 1 September, 2012, pp. 6459 - 6462. [podium presentation]

10] Larson E., Terry H.†, ***Stepp C.E.** ”Audio-visual feedback for electromyographic control of vowel synthesis” Proceedings of the 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 28 August 28 – 1 September, 2012, pp. 3600 - 3603. [poster presentation]

9] *An Q.†, Matsuoka Y., Asama H., **Stepp C.E.** ”Effect of Vibrotactile Feedback on Robotic Object Manipulation” IEEE International Conference on Biomedical Robotics and Biomechatronics, June 24-28, 2012, pp. 508 - 513. [poster presentation]

8] Tejeiro C.†., **Stepp C.E.,** *Malhotra M., Rombokas E., Matsuoka Y. ”Comparison of Remote Pressure and Vibrotactile Feedback for Prosthetic Hand Control” IEEE International Conference on Biomedical Robotics and Biomechatronics, June 24-28, 2012, pp. 521 - 525. [poster presentation]

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6] *An Q.†, Matsuoka Y., **Stepp C.E.** “Multi-day Training with Vibrotactile Feedback for Virtual Object Manipulation” Proceedings of the 12th IEEE International Conference on Rehabilitation Robotics, June 29 – July 1, 2011, pp. 1-5. [podium presentation]

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3] ***Stepp C.E.**, Dellon B.T., Matsuoka, Y. "Contextual effects on robotic experiments of sensory feedback for object manipulation," Proceedings of the 3rd IEEE RAS & EMBS International conference on Biomedical Robotics and Biomechatronics, 26-29 September 2010, pp. 58-63. [podium presentation]

2] ***Stepp C.E.,** Matsuoka, Y. "Relative to direct haptic feedback, remote vibrotactile feedback improves but slows object manipulation," Proceedings of the 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 31 August – 4 September 2010, pp. 2089-92. [podium presentation]

1] *Huynh K.†, ***Stepp C.E.**, White L.W.†, Colgate J.E., Matsuoka Y. "Finding a Feature on a 3D Object through Single-Digit Haptic Exploration", IEEE Proceedings of the 2010 Haptics Symposium, 25-26 March 2010, pp. 83-89. [poster presentation]

Invited Book Chapters/Reviews:

2] Vojtech J.M.†, **Stepp C.E.** "Speech Naturalness", The SAGE Encyclopedia of Human Communication Sciences and Disorders, Martin J. Ball (Editor), Jack S. Damico (Editor). P. 1777, 2019.

1] **Stepp C.E.** Book Review on: Introduction to Neural Engineering for Motor Rehabilitation, Dario Farina (Editor), Winnie Jensen (Editor), Metin Akay (Editor). Wiley-IEEE Press (2013). ISBN: 978-0-470-91673-5, 49, pp. 30-31, 2014.

Conference Abstracts (†student / post-doctoral mentee, *presenting author):

100] *Dahl K.L.†, **Stepp C.E.** "Relative fundamental frequency under increased cognitive load in healthy speakers", 12th International Seminar on Speech Production, Providence, RI, December 14 – December 17, 2020. (Virtual)

99] *Groll M.D.†, McKenna V.M.†, Hablani S., **Stepp C.E.** "Formant-estimated vocal tract length and extrinsic laryngeal muscle activation during modulation of vocal effort in healthy speakers", 12th International Seminar on Speech Production, Providence, RI, December 14 – December 17, 2020. (Virtual)

98] *Park Y.†, Diaz Cadiz M.E., Nagle K.F., **Stepp C.E.** "Perceptual and acoustic assessment of strain using synthetically modified voice samples", 12th International Seminar on Speech Production, Providence, RI, December 14 – December 17, 2020. (Virtual)

97] *Maryn Y., Segina R.†, Wang F.†, **Stepp C.E.** "Experimenting with Relative Fundamental Frequency (RFF) in the Program Praat", American Speech and Hearing Association (ASHA) Convention, San Diego, CA, November 18-20, 2020. [podium presentation] (Convention canceled)

96] *Park Y.†, Wang F.†, Diaz Cadiz M.E., Vojtech J.M.†, Groll M.D.†, **Stepp C.E.** "Vocal fold kinematics and relative fundamental frequency as a function of obstruent type and speaker age," 47th Annual Voice Foundation Symposium, Philadelphia, PA, May 30 – June 3, 2018. [podium presentation] (Virtual)

95] *Abur D.†, Subaciute A.†, Daliri A., Lester-Smith R.A.†, Lupiani A.A.†, Cilento D.†, Enos N.M.†, Tardif M.†, Weerathunge H.R.†, **Stepp C.E.** "Auditory-Motor Bases of Voice and Articulatory Impairments in Parkinson's disease," Conference on Motor Speech, Santa Barbara, CA, February 20-23, 2020. [poster presentation]

94] *Weerathunge H.R.†, Abur D.†, Enos N.M.†, Brown K., **Stepp C.E**. "Auditory-Motor Perturbations of Voice Fundamental Frequency: Effects of Feedback Delay and Amplification," Conference on Motor Speech, Santa Barbara, CA, February 20-23, 2020. [poster presentation]

93] *Vojtech J.M.†, Hablani S., Cler G.J.†, **Stepp C.E.** "Integrated head-tilt & surface electromyographic cursor control for augmentative and alternative communication," Conference on Motor Speech, Santa Barbara, CA, February 20-23, 2020. [poster presentation]

92] *Heller Murray E.S.†, **Stepp C.E.** "Vocal Pitch Perception and Production in Children and Adults," Conference on Motor Speech, Santa Barbara, CA, February 20-23, 2020. [podium presentation]

91] *Kearney E., Smith D.J.†, **Stepp C.E.**, Guenther F.H. "Contributions of Auditory and Somatosensory Feedback to Vocal Motor Control," Conference on Motor Speech, Santa Barbara, CA, February 20-23, 2020. [poster presentation]

90] *Abur D.†, Lupiani A.A.†, **Stepp C.E.** "Acuity to Changes in Vocal Pitch in Parkinson's Disease", American Speech and Hearing Association (ASHA) Convention, Orlando, FL, November 21-23, 2019. [podium presentation]

89] *Maryn Y., Segina R.†, Wang F.†, **Stepp C.E.** “Experimenting with Relative Fundamental Frequency (RFF) in the program Praat,” The Fall Voice Conference, Dallas, TX, October 17 – October 19, 2019. [poster presentation]

88] Buckley D.P., Dahl K.L.†, Cler G.J.†, **Stepp C.E.** “Transmasculine Voice Modification: A Case Study,” The Fall Voice Conference, Dallas, TX, October 17 – October 19, 2019. [poster presentation]

87] *McKenna V.S.†, **Stepp C.E.** “The relationship between acoustical and perceptual measures of vocal effort,” 48th Annual Voice Foundation Symposium, Philadelphia, PA, May 29 – June 2, 2019. [poster presentation]

86] *Dahl K.L.†, Cler G.J.†, McKenna V.S.†, **Stepp C.E.** “Effects of voice changes under testosterone therapy on listener perception of gender: A transgender case study”, The 13th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research, Montreal, Quebec, June 2 – 4, 2019. [podium presentation]

85] *Groll M.D.†, Buckley D.P., Dahl K.L.†, **Stepp C.E.** “The effects of laryngeal massage and nebulized saline on high-voice users”, The 13th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research, Montreal, Quebec, June 2 – 4, 2019. [podium presentation]

84] *Heller Murray E.S.†, Hseu A., Nuss R., Harvey Woodnorth G., **Stepp C.E.** “Auditory acuity to fundamental frequency in children with and without vocal fold nodules”, The 13th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research, Montreal, Quebec, June 2 – 4, 2019. [podium presentation]

83] *Dahl K.L.†, **Stepp C.E.** “The effect of cognitive load on acoustic measures of voice in individuals with hyperfunctional voice disorders”, The 13th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research, Montreal, Quebec, June 2 – 4, 2019. [poster presentation]

82] *Heller Murray E.S.†, Kolin K.R.†, Harvey Woodnorth G., **Stepp C.E.** “Relative Fundamental Frequency in Children With and Without Vocal Fold Nodules”, American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2018. [podium presentation]

81] *MacLellan L.†, Cler G.J.†, Fager S., Mentis M., **Stepp C.E.** “Evaluating Camera Mouse as a computer access system for AAC: a case study”, American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2018. [podium presentation]

80] *Cler G.J.†, Fager S., **Stepp C.E.** “A Predictive Phonemic Interface for AAC Users: A Case Series of Performance and User Impressions”, American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2018. [poster presentation]

79] *Hylkema J.†, McKenna V.S.†, **Stepp C.E.** “Voice Onset Time in Individuals with Hyperfunctional Voice Disorders”, American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2018. [poster presentation]

78] *Diaz-Cadiz M.E.†, Zanartu M., **Stepp C.E.** “How to construct your own high-speed flexible videoendoscopy system for research and clinical applications,” The Fall Voice Conference, Seattle, WA, October 25 – October 27, 2018. [poster presentation]

77] *Park Y.†, **Stepp C.E.** “Do people who have breathier voices perceive breathiness differently?,” The Fall Voice Conference, Seattle, WA, October 25 – October 27, 2018. [poster presentation]

76] *Park Y.†, **Stepp C.E.** “Reliability of relative fundamental frequency and conventional acoustic and aerodynamic measures in individuals with healthy voices”, 11th International Conference on Voice Physiology and Biomechanics, East Lansing, MI, August 1 – 3, 2018. [podium presentation]

75] *Heller Murray E.S.†, Lupiani A.A.†, Kolin K.R.†, **Stepp C.E.** “Accuracy of the commercially available Eventide Eclipse to perturb Auditory feedback of fundamental frequency”, 11th International Conference on Voice Physiology and Biomechanics, East Lansing, MI, August 1 – 3, 2018. [poster presentation]

74] *Diaz-Cadiz M.E.†, McKenna V.S.†, **Stepp C.E.** “Adductory vocal fold kinematic trajectories during conventional speed vs. high-speed videoendoscopy”, 11th International Conference on Voice Physiology and Biomechanics, East Lansing, MI, August 1 – 3, 2018. [poster presentation]

73] *McKenna V.S.†, Diaz-Cadiz M.E., Shembel A.C., Enos N.M.†, **Stepp C.E.** “The relationship between physiological mechanisms and the self-perception of vocal effort”, 11th ICVPB -- Pre Conference

Symposium, Vocal Effort, Vocal Fatigue, and Vocal Load: What, How and Where, East Lansing, MI, July 31, 2018. [podium presentation] (invited)

72] *Park Y.†, **Stepp C.E.** "The Effects of Stress Type, Vowel Identity, Baseline f0, and Loudness on the Relative Fundamental Frequency of Individuals with Healthy Voices," 47th Annual Voice Foundation Symposium, Philadelphia, PA, May 30 – June 3, 2018. [podium presentation]

71] *Cler G.J.†, McKenna V.S.†, **Stepp C.E.** "Longitudinal Case Study of Transgender Voice Changes under Testosterone Hormone Therapy," 47th Annual Voice Foundation Symposium, Philadelphia, PA, May 30 – June 3, 2018. [podium presentation]

70] *Enos N.†, Abur D.A.†, **Stepp C.E.**, "Comparing visual-analog-scale ratings and orthographic transcription estimates of intelligibility", Conference on Motor Speech, Savannah, GA, February 21-25, 2018. [poster presentation]

69] *Vojtech J.†, Noordzij J.†, Cler G.J. †, **Stepp C.E.**, "Effects of prosody on the intelligibility, communication efficiency, and perceived naturalness of synthetic speech in augmentative and alternative communication", Conference on Motor Speech, Savannah, GA, February 21-25, 2018. [poster presentation]

68] *Cler G.J.†, Vojtech J.†, Kolin K. †, Noordzij J., **Stepp C.E.**, "Empirical Evaluation of Communication Interfaces Optimized for Individuals with Motor Speech Disorders", Conference on Motor Speech, Savannah, GA, February 21-25, 2018. [poster presentation]

67] *Smith D.J.†, Salazar-Gomez A., **Stepp C.E.**, Guenther F.H, "Somatosensory-based Compensation to Mechanical Perturbations of the Larynx during Speech," Society for Neuroscience, Washington, D.C., November 11-15, 2017. [poster presentation]

66] *Nagle, K.F., Abur D.†, **Stepp C.E.** "Effect of Scale Type on Reliability of Perceived Listener Effort for Dysarthric Speech", American Speech and Hearing Association (ASHA) Convention, Los Angeles, CA, November 9 – 11, 2017. [poster presentation]

65] *Lester-Smith R.A.†, Daliri A., Abur D.†, Letcher S.†, Lupiani A.A.†, Guenther F.H, **Stepp C.E.** "The Importance of Auditory Feedback in Speech and Voice Motor Control," American Speech and Hearing Association (ASHA) Convention, Los Angeles, CA, November 9 – 11, 2017. [podium presentation]

64] *Cler M.J.†, Lee J.C., Mittelman T.†, **Stepp C.E.**, & Bohland J.W. "Multivariate Analyses for Large Articulography Datasets of Speech and Induced Speech Errors," 7th International Conference on Speech Motor Control, Groningen, the Netherlands, July 5 – 8, 2017. [podium presentation]

63] ***Stepp C.E.**, Heller Murray E.S.†, Abur D.†, Lester-Smith R.A.†, Daliri A., Noordzij J.P., Lupiani A.A.† "Auditory-motor impairment as an underlying basis of hyperfunctional voice disorders," 7th International Conference on Speech Motor Control, Groningen, the Netherlands, July 5 – 8, 2017. [poster presentation]

62] Abur D.A.†, Lupiani, A.A.†, Hickox A.E., Shinn-Cunningham B., **Stepp C.E.** "Loudness perception of pure tones in Parkinson's disease," 173rd Meeting of the Acoustical Society of America, Boston, MA, June 25 – 19, 2017. [poster presentation]

61] MacPherson M.K., *Abur, D.A.†, Shembel A.†, **Stepp C.E.** "Autonomic and Acoustic Measures during Speech as a Function of Cognitive Load in Healthy Older Adults," 46th Annual Voice Foundation Symposium, Philadelphia, PA, May 31 – June 4, 2017. [poster presentation] ****Second place, Best Poster Award**

60] *McKenna V.S.†, Llico A.F.†, Mehta D.D., **Stepp C.E.** "Neck-Surface Acceleration as an Estimate of Subglottal Pressure during Modulated Vocal Effort and Intensity in Healthy Speakers," 5th Occupational Voice Symposium, London, UK, March 28 – 29, 2017. [podium presentation].

59] *Hammer M., *Patel S., ***Stepp C.E.**, *Larson C. "Auditory and Somatosensory Mechanisms Associated with Voice Disorders and Voice Treatment in Parkinson's Disease," American Speech and Hearing Association (ASHA) Convention, Philadelphia, PA, November 17-19, 2016 [podium presentation].

58] *Heller Murray E.S.†, Girouard K.†, Cler M.J.†, **Stepp C.E.** "Development of an electronic voice therapy documentation system: Clinical research and teaching implications," American Speech and Hearing Association (ASHA) Convention, Philadelphia, PA, November 17-19, 2016 [podium presentation].

57] *McKenna V.S.†, Llico A.F.†, Mehta D.D., **Stepp C.E.** “Neck-Surface Acceleration as an Estimate of Subglottal Pressure during Modulated Vocal Effort in Healthy Speakers,” American Speech and Hearing Association (ASHA) Convention, Philadelphia, PA, November 17-19, 2016 [podium presentation].

56] *Cler M.J.†, Lien Y.S.†, Braden M.N., Mittelman T.†, Byron K.†, **Stepp C.E.** “Objective Measure of Nasal Air Emission Using Nasal Accelerometry,” American Speech and Hearing Association (ASHA) Convention, Philadelphia, PA, November 17-19, 2016 [poster presentation].

55] *Hillman R.E., Mehta D.D., **Stepp C.E.**, Van Stan J., Zanartu M. “Objective assessment of vocal hyperfunction,” 171st Meeting of the Acoustical Society of America, Salt Lake City, UT, May 23 – 27, 2016. [podium presentation] (Invited)

54] McKenna V.S.†, Heller Murray E.S.†, Lien Y. S.†, ***Stepp C.E.** “Acoustic and Kinematic Estimates of Laryngeal Stiffness,” 171st Meeting of the Acoustical Society of America, Salt Lake City, UT, May 23 – 27, 2016. [podium presentation] (Invited)

53] MacPherson M.K., ***Stepp C.E.** “Relationships between Acoustic Measures of Voice and Physiologic Measures of Autonomic Arousal during a Cognitively Demanding Speech Task,” 45th Annual Voice Foundation Symposium, Philadelphia, PA, June 1-5, 2016. [poster presentation]

52] *McKenna V.S.†, Heller Murray E.S.†, Lien Y. S.†, **Stepp C.E.** “The Relationship between Relative Fundamental Frequency and a Kinematic Estimate of Laryngeal Stiffness in Healthy Adults,” 45th Annual Voice Foundation Symposium, Philadelphia, PA, June 1-5, 2016. ****First place, Best Poster Award**

51] Heller Murray E.S.†, Lien Y.S.†, Van Stan J., Mehta D.D., Hillman R.E., Noordzij J.P., ***Stepp C.E.** “Relative Fundamental Frequency Distinguishes Between Phonotraumatic and Non-Phonotraumatic Vocal Hyperfunction,” 10th International Conference on Voice Physiology and Biomechanics, Vina del Mar, Chile, March 14 - 17, 2016. [podium presentation]

50] *Heller Murray E.S.†, Michener C.M.†, Enflo L.†, Cler M.J.†, **Stepp C.E.** “The Impact of Glottal Closure on Speech Breathing,” 10th International Conference on Voice Physiology and Biomechanics, Vina del Mar, Chile, March 14 - 17, 2016. [podium presentation]

49] *Cler M.J.†, Nieto-Castanon A., Guenther F.H., Fager S., **Stepp C.E.** “2D Control of Speech Synthesis via Surface Electromyography,” Conference on Motor Speech, Newport Beach, CA, March 3-6, 2016. [poster presentation]

48] Cler M.J.†, ***Stepp C.E.** “Videogame Rehabilitation of Velopharyngeal Mislearning,” Conference on Motor Speech, Newport Beach, CA, March 3-6, 2016. [podium presentation]

47] *Cler M.J.†, Lee J.C., Mittelman T.†, **Stepp C.E.**, & Bohland J.W. “Electromagnetic Articulographic Analysis of Speech Sound Sequencing Errors Induced by Delayed Auditory Feedback,” Conference on Motor Speech, Newport Beach, CA, March 3-6, 2016. [poster presentation]

46] Abur D.†, Daliri A., Guenther F.H., ***Stepp C.E.** “Sensorimotor adaptation to gradual perturbations in the fundamental frequency of auditory feedback in Parkinson’s disease,” Conference on Motor Speech, Newport Beach, CA, March 3-6, 2016. [podium presentation]

45] *Kaneoka A., Pisegna J.M., Krisciunas G.P., Nito, T., LaValley M.P., **Stepp C.E.**, Langmore S.E. “Laryngeal sensory testing: A pilot study investigating the intensity of the touch and responsive reflexes,” Dysphagia Research Society Annual Meeting, Tucson, AZ, February 25 – 27, 2016. [poster presentation]

44] Cler M.J.†, ***Stepp C.E.** “Videogame Rehabilitation of Velopharyngeal Dysfunction,” American Speech and Hearing Association (ASHA) Convention, November 12-14, 2015, Denver, CO. [podium presentation]

43] Lien Y.S.†, Calabrese C.†, Michener C.M.†, Heller Murray E., Van Stan J., Mehta D.D., Hillman R.E., Noordzij J.P., ***Stepp C.E.** “Automated algorithms for voice relative fundamental frequency: Validation and applications in assessing voice disorders,” American Speech and Hearing Association (ASHA) Convention, November 12-14, 2015, Denver, CO. [podium presentation]

42] *Brumberg J.S., ***Stepp C.E.,** *Lalor E., *Lee A.K.C.. “Biosignal acquisition for speech production and perception: electromyography, electroencephalography and magnetoencephalography (EMG, EEG and MEG)”, Interspeech 2015, Dresden, Germany, September 6 – 10, 2015. [podium presentation]

41] Lien Y.S. †, Calabrese C.†, Michener C.M.†, Murray E.H.†, Van Stan J., Mehta D.D., Hillman R.E., Noordzij J.P., ***Stepp C.E.** "Automated algorithms for estimation of Relative Fundamental Frequency in individuals with and without voice disorders", 11th International Advances in Quantitative Laryngology, Voice and Speech Research (AQL) Conference, London, 8-10 April, 2015. [podium presentation]

40] MacPherson M.K., Michener C.M. †, ***Stepp C.E.** "Effects of a Cognitively Demanding Task on Spectral-Cepstral Acoustic Features of Voice in Healthy Young Adults". 44th Annual Symposium: Care of the Professional Voice, Voice Foundation, May 26-31, 2015, Philadelphia, PA. [poster presentation] ****Second place, Best Poster Award**

39] *Heller Murray E.S. †, Hands G.L. †, Calabrese C.R. †, **Stepp C.E.** "Effects of adventitious vocal trauma: Relative fundamental frequency and listener perception". 44th Annual Symposium: Care of the Professional Voice, Voice Foundation, May 26-31, 2015, Philadelphia, PA. [podium presentation]

38] Lien Y.S.†, Calabrese C.†, Michener C.M.†, Van Stan J., Mehta D.D., Hillman R.E., ***Stepp C.E.** "Relative fundamental frequency estimation via neck skin acceleration in healthy and disordered voices," American Speech and Hearing Association (ASHA) Convention, November 20-22, 2014, Orlando, FL. [podium presentation]

37] *Anand, S.†, Heller Murray E.S. †, **Stepp C.E.** "Vocal Loudness Discrimination Deficits in Individuals with Parkinson's disease," American Speech and Hearing Association (ASHA) Convention, November 20-22, 2014, Orlando, FL. [podium presentation]

36] *Michener C.M.†, Lien Y.S.†, **Stepp C.E.** "Individual Monitoring of Vocal Effort with Relative Fundamental Frequency," American Speech and Hearing Association (ASHA) Convention, November 20-22, 2014, Orlando, FL. [podium presentation]

35] *Heller Murray E.S.†, Mendoza J.O.†, **Stepp C.E.** "Effects of normalized nasal acceleration feedback on control and generalization of nasalance," American Speech and Hearing Association (ASHA) Convention, November 20-22, 2014, Orlando, FL. [podium presentation]

34] *Cler M.J.†, Michener C.M.†, **Stepp C.E.** "Discrete vs. continuous mapping of facial electromyography for learning and generalization of human-machine-interface control," Neural Interfaces Conference, Dallas, TX, June 23-25, 2014. [poster presentation]

33] *Varghese L.A.†, Mendoza J.O.†, Braden M.N., **Stepp C.E.** "Accelerometric correlates of nasalized speech in children," 167th Meeting of the Acoustical Society of America, Providence, RI, May 5 – 9, 2014. [poster presentation]

32] Favrot S.E., *Michener C.M.†, **Stepp C.E.** "Discrete and continuous auditory feedback based on pitch and spatial lateralization for human-machine-interface control," 167th Meeting of the Acoustical Society of America, Providence, RI, May 5 – 9, 2014. [poster presentation]

31] *Lien Y.S.†, Michener C.M.†, **Stepp C.E.** "Validation of relative fundamental frequency using an aerodynamic estimate of vocal effort," 167th Meeting of the Acoustical Society of America, Providence, RI, May 5 – 9, 2014. [poster presentation]

30] Malloy J.R.†, Valentin J.C.†, Hands G.L.†, Stevens C.A.†, Langmore S. E., Noordzij J.P., ***Stepp C.E.** "Neck surface electromyography in Parkinson's disease during swallowing and non-swallowing tasks," 134nd Annual Meeting of the American Laryngological Association (ALA), Las Vegas, NV, May 14-15, 2014. [poster presentation]

29] *Heller Murray E.S. †, **Stepp C.E.** "The role of feedback on discrimination of vocal sound pressure levels," Conference on Motor Speech, Sarasota, FL, February 27-March 2, 2014. [poster presentation]

28] *Malloy J.R.†, Michener C.M.†, **Stepp C.E.** "Information transfer rate of an AAC system utilizing facial surface electromyography," Conference on Motor Speech, Sarasota, FL, February 27-March 2, 2014. [poster presentation]

27] *Varghese L.A.†, Michalka S.W., Yazdanbakhsh A., Somers D., **Stepp C.E.,** Guenther F.H., Shinn-Cunnhingham B.G. "Decoding the Locus of Attention to Visual, Auditory, and Audiovisual Stimuli from Single-Trial EEG Data", MidWinter Meeting for the Association for Research in Otolaryngology, San Diego, CA, February 22-26, 2014. [poster presentation]

26] *__Stepp C.E.,__ Vega-Barachowitz C., Ambrosi D., Perry P., Kiran S., "The Next Frontier in Rehabilitation: Connected Care Using tablets, cloud-computing and other technologies," American Speech and Hearing Association (ASHA) Convention, Chicago, IL, November 14-16, 2013. [podium presentation]

25] *Braden M.N., Varghese L.A.†, *__Stepp C.E.__ "Application of normalized nasal acceleration to children with and without cleft palate," American Speech and Hearing Association (ASHA) Convention, Chicago, IL, November 14-16, 2013. [podium presentation]

24] *Lien Y.S.† and __Stepp C.E.__ "Comparison of relative fundamental frequency estimates using neck skin vibration and acoustics," American Speech and Hearing Association (ASHA) Convention, Chicago, IL, November 14-16, 2013. [podium presentation] **__**Winner of ASHA's Student Research Travel Award for submitting the top student paper in "Voice, Resonance, and Alaryngeal Speech."__**

23] *__Stepp C.E.__ and *Brumberg J. "What you need to know: Surface electromyography & Electroencephalography in Speech & Hearing," American Speech and Hearing Association (ASHA) Convention, Chicago, IL, November 14-16, 2013. [podium presentation]

22] *Lien Y.S.†, Gattuccio, C.I.†, __Stepp C.E.__ "The Effect of Phonetic Context on Relative Fundamental Frequency", 10th International Advances in Quantitative Laryngology, Voice and Speech Research (AQL) Conference, Cincinnati, OH, 3-4 June 2013. [podium presentation] **__**Winner of the AQL Best Paper Award__**

21] *Britton D., Merati A., Benditt J.O., Stepp C., Hu C., Miller R., Yorkston K. "Associations between laryngeal and cough dysfunction in motor neuron disease (MND)," Dysphagia Research Society Annual Meeting, Seattle, WA, March 13-16, 2013. [poster presentation]

20] *__Stepp C.E.__ "Voluntary Anterior Neck Control in Older versus Younger Adults," American Speech and Hearing Association (ASHA) Convention, Atlanta, GA, November 15-17, 2012 [poster presentation].

19] *__Stepp C.E.__, *Patel R., *Brumberg J. "Games for assessment and rehabilitation of speech and language impairments," American Speech and Hearing Association (ASHA) Convention, Atlanta, GA, November 15-17, 2012. [podium presentation]

18] *Britton D., Merati A., Benditt J.O., __Stepp C.__, Yorkston K. "Associations between vocal fold movements and airflow during cough in neurological disease: Preliminary analyses," The Fall Voice Conference, New York, NY, October 4-6, 2012. [podium presentation]

17] Bowen L.†, Pradhan S., *__Stepp C.E.__ "Fundamental Frequency Variability in Parkinson's Disease," 41st Annual Symposium: Care of the Professional Voice, Philadelphia, PA, May 30 – June 3, 2012. [poster presentation]

16] *Britton D., Merati A., Benditt J.O., __Stepp C.__, Max L., Yorkston K. "Associations between vocal fold movements and peak expiratory cough flow in healthy middle-aged adults: Preliminary analyses," Dysphagia Research Society Annual Meeting, Toronto, Ontario, March 8 – 10, 2012. [poster presentation]

15] *__Stepp C.E.__ and Pradhan S. "Relationship between Relative Fundamental Frequency and Parkinson's Disease," Conference on Motor Speech, Santa Rosa, CA, February 29 – March 4, 2012. [poster presentation]

14] *__Stepp C.E.__ and Eadie T. "Relative Fundamental Frequency as an Acoustic Correlate of Vocal Effort in Spasmodic Dysphonia," 161st Meeting of the Acoustical Society of America, Seattle, WA, 23-27 May 2011. [poster presentation].

13] *__Stepp C.E.__ and Matsuoka Y. "Novel Augmentative Sensory Feedback for Robotic Rehabilitation," Future Trends in Rehabilitation Robotics Workshop, BIOROB, Tokyo, September 26, 2010. [podium presentation]

12] *__Stepp C.E.__ and Matsuoka Y. "Visual and Haptic Feedback for Users of Prosthetic Hands," Neural Interfaces Conference, Long Beach, CA, June 21-23, 2010. [poster presentation] **__**Winner of the Neural Interfaces Conference Student Excellence in Neural Interfacing Travel Award__**

11] *__Stepp C.E.__, Hillman R.E., Heaton J.T. "Neck intermuscular coherence distinguishes normal from disordered voice production," Conference on Motor Speech, Savannah, GA, March 4 - 7, 2010. [poster presentation]

10] *Britton D., Baylor C., Eadie T., Merati A.L., **Stepp C.E.**, Yorkston K.M. "Endoscopic assessment of vocal fold movements during cough," Conference on Motor Speech, Savannah, GA, March 4 - 7, 2010. [poster presentation]

9] *Merchant G.R.†, **Stepp C.E.,** Heaton J.T., Hillman R.E. "Relative Fundamental Frequency in Patients with Vocal Hyperfunction," MidWinter Meeting for the Association for Research in Otolaryngology, Anaheim, CA, February 6-10, 2010. [poster presentation]

8] *Perrachione T.K., **Stepp C.E.**, Hillman R.E., Wong P.C.M. "The role of source and filter characteristics in human talker identification: Experiments with laryngeal and electrolarynx speech," *158th Annual Meeting of the Acoustical Society of America*, San Antonio, TX, October 26 – 30, 2009. [poster presentation]

7] ***Stepp C.E.**, Hillman R.E., Heaton J.T. "Bilateral Intermuscular Beta Coherence is Reduced in Individuals with Vocal Hyperfunction," ACRM-ASNR Joint Educational Conference, *Building the Evidence Base for Rehabilitation Interventions: From Research to Clinical Care*, Denver, CO, October 7 - 11, 2009. [poster presentation] ****Winner of the ASNR Presidential Award**

6] ***Stepp C.E.,** Heaton J.T., Stadelman-Cohen T., Braden M.N., Jette M., Hillman R.E. "Vocal Fold Kinematics in Individuals with Vocal Hyperfunction," Society for Neuroscience, Washington, D.C., November 15-19, 2008. [poster presentation]

5] ***Stepp C.E.**, Heaton J.T., Hillman R.E. "Use of neck and face surface EMG for controlling a prosthetic voice after total laryngectomy," Conference on Motor Speech, Monterey, CA, March 6-9, 2008. [poster presentation]

4] ***Stepp C.E.**, Heaton J.T., Hillman R.E. "A Longitudinal Study of Post-Laryngectomy Speech and Swallowing Respiration Patterns," American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2007. [poster presentation]

3] *Kubert H., **Stepp C.E.**, Zeitels S.M., Gooey J., Walsh M., Prakash S.R., Hillman R.E., Heaton J.T. "Electromyographic Control of a Hands-Free Electrolarynx Using Neck Strap Muscles," American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2007. [podium presentation]

2] ***Stepp C.E.**, Voss S.E. "Acoustics of the middle-ear air space in human ears," American Auditory Society Annual Meeting, Scottsdale, AZ, 6-9 March 2004. [podium presentation]

1] ***Stepp C.**, Subramaniam K., Smets B., Pignatello J.J., Grasso, D. "Chelating Agent Enhanced Desorption of PAH Compounds," 76th Colloid and Surface Science Symposium, American Chemical Society, University of Michigan, Ann Arbor, MI, 23-26 June 2002. [podium presentation]

Invited Talks:

53] Title TBA, Keynote Lecture, The 14th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research, Bogotá, Colombia, June 9-10, 2021.

52] "Voice and speech motor control: measurement, rehabilitation, augmentation, and sensorimotor mechanisms," Research Roundtable Seminar Series, Communication Science and Disorders, University of Pittsburgh, Pittsburgh, PA, February 27, 2020.

51] "Applying signal processing to improve the assessment of communication disorders," Graduate Seminar Series, Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA, February 26, 2020.

50] "Voice and Articulatory Auditory-Motor Control in Parkinson's disease," Annual Minifie Lecture, Department of Speech and Hearing Sciences, University of Washington, Seattle, WA, December 6, 2019.

49] "Voice and articulation in Parkinson's disease: assessment and sensorimotor bases," Institute of Biomaterials and Biomedical Engineering Distinguished Speaker Series, University of Toronto, Toronto, ON, April 10, 2019.

48] "New insights into voice, speech, and swallowing dysfunction in Parkinson's disease: Implications for care," with M. Ciucci, American Speech and Hearing Association (ASHA) Convention, Boston, MA, November 15-17, 2018.

47] "Voice and Speech in Parkinson's disease: Motor Control, Physiology, and Acoustics", Academy of Neurologic Communication Disorders and Sciences (ANCDS) Annual Meeting, Boston, MA, November 14, 2018.

46] “The hidden larynx: learning about voices by studying when they aren't there”, Keynote Lecture, The Fall Voice Conference 2018, Seattle, WA, October 25-27, 2018.

45] “Predicting optimal surface electromyographic control of human-machine interface devices in individuals with motor impairments”, with Jennifer Vojtech, Delsys Seminar Series, Natick, MA, October 27, 2017.

44] "Not just in her head: is sensorimotor dysfunction responsible for so-called 'functional' voice disorders?" NCSU/UNC Biomedical Engineering Coulter Seminar Series, Raleigh, North Carolina, October 13, 2017.

43] “Objective assessment of vocal hyperfunction,” Keynote Lecture, 5th Occupational Voice Symposium, London, UK, March 28 – 29, 2017.

42] “Auditory-motor impairment as a potential risk factor for hyperfunctional voice disorders,” 5th Occupational Voice Symposium, London, UK, March 28 – 29, 2017.

41] “Hyperfunctional voice disorders: Current results, clinical implications, and future directions of a multidisciplinary research program,” with M. Zanartu, D. Mehta, and R. Hillman, American Speech and Hearing Association (ASHA) Convention, Philadelphia, PA, November 17-19, 2016.

40] “Vocal Fry and Creaky Voice: Linguistic, Physiologic, Perceptual, and Clinical Perspectives,” with L. Davidson, E.R. Hapner, and R.C. Scherer, American Speech and Hearing Association (ASHA) Convention, Philadelphia, PA, November 17-19, 2016.

39] “Etiology and assessment of hyperfunctional voice disorders,” China International Voice and Artistic Voice Expert Forum, Tianjin, China, October 29, 2016.

38] “Etiology and assessment of hyperfunctional voice disorders,” Greater Baltimore Medical Center, October 14, 2016.

37] “Auditory-motor control of voice in Parkinson’s disease,” Johns Hopkins Medical Center, October 13, 2016.

36] “Identifying the basis of disorders of voice and speech in Parkinson’s disease,” with D. Abur. Engineering Forum, Smith College, Northampton, MA, November 4, 2015.

35] “Engaging Persons with Disabilities: Research Efforts and Opportunities,” Engaging Persons with Disabilities at Iowa State University Workshop Series, Iowa State University, Ames, IA, October 27, 2015.

34] “Cracking the Code of the Most Common Voice Disorder: Mysterious Loss of Voice with No Known Cause,” Rafik B. Hariri Institute for Computing and Computational Science & Engineering, Boston University, Boston, MA, March 11, 2015.

33] “How To Be A Quick-Start Professor” Panel with R. Patel, D. Weinstein, and P. Anikeeva, Path of Professorship Workshop, Massachusetts Institute of Technology, November 15, 2014.

32] “Lessons Learned from a past ‘Lessons for Success’ Participant,” The American Speech-Language-Hearing Association’s Lessons for Success, Rockville, MD, April 28, 2014.

31] “Objective assessment and sensorimotor bases of vocal hyperfunction,” Massachusetts Eye and Ear Infirmary, Boston, MA, September 25, 2013.

30] “Effects of nonlinear sensory-motor mapping and multi-modal paradigms on human-machine-interface control,” Center for Sensorimotor Neural Engineering, University of Washington, Seattle, WA, March 13, 2013.

29] Panel with M. Grinstaff, C. Evans, D. Roblyer, and M. Wanunu, Academic Career Night, Boston University Biomedical Engineering Graduate Student Committee, Boston, MA, November 14, 2012.

28] “Negotiating the Offer” Panel with M. Modjaz and L. Kolodziejski, Path of Professorship Workshop, Massachusetts Institute of Technology, Cambridge, MA, October 27, 2012.

27] “Can we Apply Body-Machine-Interfaces to Dysphagia Rehabilitation?” Madison Swallowing Interdisciplinary Group Monthly Meeting, University of Wisconsin – Madison, Madison, WI, July 19, 2012.

26] “Sensorimotor Rehabilitation Engineering” Scientific Session 3 – Sensory Systems & Neuroengineering, Boston University Biomedical Engineering Retreat, May 22, 2012.

25] “Voluntary control of anterior neck musculature in individuals with dysphagia” Boston Action Club, Northeastern University, Boston, MA, February 23, 2012.

24] "Negotiating the Offer" Panel with A. Wofson, and M. Gonzalez, Path of Professorship Workshop, Massachusetts Institute of Technology, Cambridge, MA, October 29, 2011.

23] "Relative Fundamental Frequency as an Acoustic Correlate of Laryngeal Tension," Hearing Research Center Seminar, Boston University, Boston, MA, October 7, 2011.

22] "Sensorimotor Rehabilitation through Human-Machine Interaction," Rehabilitation Institute of Chicago, Chicago, IL, March 16, 2011.

21] "Sensorimotor Rehabilitation through Human-Machine Interaction," Department of Electrical Engineering and Computer Science, Northwestern University, Evanston, IL, March 15, 2011.

20] "Human-Machine Interactions for Sensorimotor Rehabilitation," Biomedical Engineering Department, University of Michigan, Ann Arbor, MI, February 25, 2011.

19] "Sensorimotor Neurorehabilitation through Human-Machine Interactions," Fischell Department of Bioengineering, University of Maryland, College Park, MD, February 16, 2011.

18] "Biosignal Analysis and Augmentation for Rehabilitation of Disordered Sensorimotor Function," Speech, Language and Hearing Sciences department, Boston University, Boston, MA, February 11, 2011.

17] "Human-Machine Interactions for Rehabilitation of Sensorimotor Function" Department of Biomedical Engineering, Boston University, Boston, MA, February 9, 2011.

16] "Rehabilitation of Sensorimotor Function through Human-Machine Interfaces," Thayer School of Engineering, Dartmouth College, Hanover, NH, February 4, 2011.

15] "Sensorimotor Interactions and Augmentation for Neurorehabilitation," Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN, January 31, 2011.

14] "Sensorimotor Assessment and Rehabilitation through Biosignal Analysis and Sensory Feedback," Department of Communication Sciences and Disorders, University of Wisconsin-Milwaukee, Milwaukee, WI, January 27, 2011.

13] "Sensorimotor Interactions for Neurorehabilitation," School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, January 22, 2011.

12] "Biosignal Analysis and Sensory Feedback Augmentation for Sensorimotor Rehabilitation," Department of Communication Sciences and Disorders, Bowling Green State University, Bowling Green, OH, January 13, 2011.

11] "Human-Machine Interactions for Neurorehabilitation of Sensorimotor Function," Department of Electrical and Computer Engineering, University of Delaware, Newark, DE, January 10, 2011.

10] "Human-Machine Interactions for Understanding and Rehabilitating Sensorimotor Function," Department of Mechanical Engineering, Vanderbilt University, Nashville, TN, December 20, 2010.

9] "Rehabilitating Sensorimotor Function through Engineering," Department of Communication Sciences and Disorders, University of Cincinnati, Cincinnati, OH, December 6, 2010.

8] "Human-Machine Interactions for Understanding and Rehabilitating Sensorimotor Function," Weekly Seminar Series on Engineering, Neuroscience & Health, University of Southern California, Los Angeles, CA, November 1, 2010.

7] "Neurobotics for Sensorimotor Rehabilitation," 2nd Northwest Computational Neuroscience Connection, University of Washington, Seattle, WA, October 1-2, 2010.

6] "Sensorimotor Rehabilitation through Robotics," with Yoky Matsuoka, USA-Japan Workshop on Model-based Assistive Robotic Technologies for Medicine and Rehabilitation, BIOROB, Tokyo, Japan, September 27, 2010.

5] "Sensory feedback for Prosthetic and Robotic Hands," with Mark Malhotra, Bridging Human Hand Research and the Development of Robotic Technology for Hands, BIOROB, Tokyo, Japan, September 26, 2010.

4] "Engineering Approaches to Speech Rehabilitation," Cincinnati Children's Hospital, Cincinnati, OH, May 10, 2010.

3] "Engineering Approaches to Speech Rehabilitation," Army Audiology & Speech Center, Bethesda, MD, Walter Reed Army Medical Center, March 8, 2010.

2] “Using Surface Electromyography to Study Vocal Hyperfunction,” Speech & Hearing Sciences Colloquium, University of Washington, Seattle, WA, October 2, 2009.

1] “Use of Neck and Face Surface Electromyography to Control a Prosthetic Voice after Total Laryngectomy,” Kinesiology and Nutrition Seminars, University of Illinois – Chicago, Chicago, IL, January 23, 2009.

Teaching (*indicates new course development)

SAR SH732 Voice and Resonance Disorders (graduate, 3 credits, 82 students) Fall 2020
Sargent College, Boston University

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 28 students) Fall 2020
Sargent College, Boston University

SAR SH732 Voice and Resonance Disorders (graduate, 3 credits, 37 students) Fall 2019
Sargent College, Boston University

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 16 students) Fall 2019
Sargent College, Boston University

*SAR SH732 Voice and Resonance Disorders (graduate, 3 credits, 33 students) Fall 2018
Sargent College, Boston University

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 18 students) Fall 2018
Sargent College, Boston University

*SAR SH755: Applied Speech Science (graduate, 2 credits, 45 students) Spring 2018
Sargent College, Boston University

*SAR SH810: Academic Grant Preparation and Review (graduate, 2 credits, 8 students) Spring 2017
Sargent College, Boston University – co-instructed with Gerald Kidd

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 22 students) Fall 2016
Sargent College, Boston University

KHC HS102 The Body Rewired: Reinventing Medicine through Human-Machine Interfaces (undergraduate, 4 credits, 16 students) Spring 2016
Kilachand Honors College, Boston University

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 24 students) Fall 2015
Sargent College, Boston University

*SAR SH801 Behavioral Rehabilitation and Neuroplasticity (graduate, 2 credits, 10 students) Spring 2015
Sargent College, Boston University

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 28 students) Fall 2014
Sargent College, Boston University

SAR SH755 Applied Speech Science (graduate, 2 credits, 29 students; taught by T. Perrachione) Spring 2014
Sargent College, Boston University
Guest Lecture: Lab review of perceptual and acoustic features of resonance disorders, how to read scientific figures

*KHC HS102 The Body Rewired: Reinventing Medicine through Human-Machine Interfaces (undergraduate, 4 credits, 11 students) Spring 2014
Kilachand Honors College, Boston University

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 23 students) Fall 2013
Sargent College, Boston University

*SAR SH755 Applied Speech Science (graduate, 2 credits, 37 students; taught by D. Mehta) Spring 2013
Sargent College, Boston University

Guest Lecture: Resonance disorders, perceptual and acoustic features

SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 24 students) Fall 2012
Sargent College, Boston University

*SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 22 students) Fall 2011
Sargent College, Boston University

Research Advising (*see publication/presentation lists for trainee authors):

Post-doctoral Primary Mentor

***Gabriel Cler**, PhD, Post-doctoral Fellow in Speech, Language, and Hearing Sciences 2018 – 2019
***Rosemary Lester**, PhD, Post-doctoral Fellow in Speech, Language, and Hearing Sciences 2015 – 2016
***Laura Enflo**, PhD, Post-doctoral Fellow in Speech, Language, and Hearing Sciences 2014 – 2015
*__Supraja Anand__, PhD, Post-doctoral Fellow in Speech, Language, and Hearing Sciences 2014 – 2014

Post-doctoral Co-Mentor

*__Lenny A. Varghese__, PhD, Post-doctoral Fellow, Computational Neuroscience & Neural Technology 2013 – 2015
Evan Usler, PhD, Post-doctoral Fellow in Speech, Language, and Hearing Sciences 2017 – 2019

*Doctoral Student Primary Mentor

Kimberly Dahl, PhD in Speech, Language, and Hearing Sciences
Academic Advisor / Research Supervisor 2020 – present

Nicole Tomassi, PhD in Neuroscience (Computational focus)
Academic Advisor / Research Supervisor 2019 – present

***Hasini Weerathunge**, PhD in Biomedical Engineering
Academic Advisor / Research Supervisor 2018 – present
Hariri Graduate Fellows Program 2020 – 2022

***Matti Groll**, PhD in Biomedical Engineering
Academic Advisor / Research Supervisor 2017 – present
12th International Seminar on Speech Production Student Scholarship 2020

***Defne Abur**, PhD in Speech, Language, and Hearing Sciences
Academic Advisor / Research Supervisor 2017 – present
NIH NRSA: “Longitudinal Changes to Speech in Parkinson’s disease Phenotypes” 2020 – 2023
Participant, ASHA Pathways Program 2020
Qualifying Project Committee Member, Project: “Effects of vocal effort on respiratory and articulatory kinematics” 2020
Academy of Neurologic Communication Disorders and Sciences (ANCDS) Conference Student Fellow Award 2019
Winner of a 2019 American Speech-Language-Hearing Foundation New Century Scholars Doctoral Scholarship 2019
Raymond H. Stetson Scholarship in Phonetics and Speech Science, Honorable Mention 2019
Hariri Graduate Fellows Program 2018 – 2020
2nd Place, Best Poster Award, The Voice Foundation Annual Symposium 2017

***Yeonggwang (Paul) Park**, PhD in Speech, Language, and Hearing Sciences
Academic Advisor / Research Supervisor 2016 – 2020
Qualifying Project Committee Member, Project: “Categorization in the perception of breathy voice quality and its relation to voice production in healthy speakers” 2018

***Jennifer Vojtech**, PhD in Biomedical Engineering
Academic Advisor / Research Supervisor 2015 – 2020
National Science Foundation (NSF) Graduate Research Fellowship Program Fellowship 2017 – 2020

***Victoria McKenna**, PhD in Speech, Language, and Hearing Sciences 2015 – 2018
Academic Advisor / Research Supervisor
Participant, ASHA Pathways Program 2017
Winner of the First-place Best Poster Award at the Voice Foundation Annual Symposium 2016

Qualifying Project Committee Member, Project: "Neck-Surface Accelerometer Signals as an Estimation of Subglottal Pressure during Modulated Vocal Quality in Healthy Speakers" 2016

*__Gabriel Cler__, PhD in Neuroscience (Computational focus)
Research Supervisor 2013 – 2018
Co-Advisor, Computational Neuroscience Training Grant 2014 – 2015
Qualifying Exam Member, Project: "Optimization and Predictive Methods for Phonemic Communication Interfaces" 2014
Winner of a 2014 EMBC Student Travel Award 2014
NIH NRSA: "Optimization and prediction for fast and robust AAC" 2015 – 2018
Henry I. Russek Student Achievement Award – First place 2015
Participant, ASHA Lessons for Success Program 2016
Student Scholar Award for 11th Annual Eleanor M. Saffran Conference on Cognitive Neuroscience and Rehabilitation of Communication Disorders 2016
Winner (Mentee) of a 2018 American Speech-Language-Hearing Association's (ASHA's) Research Mentoring-Pair Travel Award (RMPTA) 2018

*__Elizabeth Heller Murray__, PhD in Speech, Language, and Hearing Sciences
Academic Advisor / Research Supervisor 2013 – 2019
Qualifying Project Committee Member, Project: "Effect of visual feedback on velopharyngeal port control" 2014
Winner of a 2015 American Speech-Language-Hearing Foundation New Century Scholars Doctoral Scholarship 2015
Winner of a 2016 CAPCSD Doctoral Fellowship 2016
Participant, ASHA Pathways Program 2016
Hariri Graduate Fellows Program 2016 – 2017
NIH NRSA: "Vocal motor control in children with vocal nodules" 2017 – 2020

*__Yu-An (Stephanie) Lien__, PhD in Biomedical Engineering
Academic Advisor / Research Supervisor 2012 – 2015
Poster session for Ecole Polytechnique Fédérale de Lausanne and Boston University: "Algorithms for Estimation of Voice Features for Dysphonia Assessment" 2012
Winner of the 2013 Advances in Quantitative Laryngology Best Paper Award 2013
Winner (Mentee) of a 2013 American Speech-Language-Hearing Association's (ASHA's) Research Mentoring-Pair Travel Award (RMPTA) 2013
Winner of a 2013 American Speech-Language-Hearing Associations (ASHA) Student Research Travel Award for submitting the top student paper in "Voice, Resonance, and Alaryngeal Speech" 2013

<u>Doctoral Student Co-Mentor</u>
*__Dante Smith__, PhD in Computational Neuroscience
Co-Mentor/Advisor 2012 – 2019
Research Rotation Supervisor 2012
Co-Advisor, Computational Neuroscience Training Grant 2013 – 2015
Qualifying Exam Member, Project: "Multimodal feedback training for steady-state visual evoked potential brain-computer-interfaces" 2014

<u>Doctoral Committee Member</u>
__Saul Frankford__, PhD in Speech, Language, and Hearing Sciences 2019 – 2020
Dissertation Committee Member
Dissertation: TBD

__Andres Salazar__, PhD in Cognitive and Neural Systems 2016
Dissertation Committee Member
Dissertation: "Use of error-related potentials for adaptive decoding and for direct binary control in brain-machine-interfaces"

__Byron Galbraith__, PhD in Cognitive and Neural Systems 2015
Dissertation Committee Member

Dissertation: “A brain-machine interface for assistive robotic control”

Hari M. Bharadwaj, PhD in Biomedical Engineering
Dissertation Committee Member 2013 – 2014
Dissertation: “Individual differences in supra-threshold auditory perception – mechanisms and objective correlates”

***Asako (Kaneoka) Satoh**, PhD in Speech, Language, and Hearing Sciences
Qualifying Project Committee Member 2013 – 2014
Qualifying Project: “A Comparison of Two Methods of Endoscopic Laryngeal Sensory Testing: A Preliminary Study”
Dissertation Committee Member 2014 – present

Keri Miloro, PhD in Speech, Language, and Hearing Sciences 2010 – 2013
Qualifying Project Committee Member
Qualifying Project: “Does improving the cough function reduce silent aspiration in Parkinson’s disease?”

Doctoral Student Rotation Supervisor

Diana Suciu, PhD in Biomedical Engineering 2020

Joshua Levitt, PhD in Biomedical Engineering 2020

Nicole Tomassi, PhD in Computational Neuroscience 2020

Matthew Ning, PhD in Biomedical Engineering 2018

Jio Nocon, PhD in Biomedical Engineering 2017

Samuel Brown, PhD in Biomedical Engineering 2015

Janis Intoy, PhD in Computational Neuroscience 2015

Lia Bonacci, PhD in Biomedical Engineering 2014

Winnie Wong, PhD in Biomedical Engineering 2012

Matthew Jacobsen, PhD in Biomedical Engineering 2012

Regina Baumgaertel, PhD in Biomedical Engineering 2012

Masters Thesis Primary Mentor

Felicia Francois, MS in Speech-Language Pathology 2019 – 2021
Thesis: “Effects of single-session manual therapy on voice and speech in transmasculine speakers”

Denise London, MS in Speech-Language Pathology 2019 – 2021
Thesis: “Effects of cursor click modality during AAC use on language complexity in individuals with neuromuscular disorders”

***Roxanne Segina**, MS in Speech-Language Pathology 2019 – 2021
Thesis: “The relationship between voice onset time variability and auditory acuity in individuals with vocal hyperfunction”

***Jennifer Hylkema**, MS in Speech-Language Pathology 2016 – 2018
Thesis: “Voice onset time in muscle tension dysphonia”

***Lauren Maclellan**, MS in Speech-Language Pathology 2015 – 2017
Thesis: “Human-machine-interfacing for communication access in severe paralysis”

***Carolyn Calabrese**, MS in Speech-Language Pathology 2013 – 2015
Thesis: “Differential specificity of acoustic measures to listener perceptions of voice quality”

***Kerri Downing**, MS in Speech-Language Pathology 2013 – 2015
Thesis: “Perceptual judgments of hypernasality and audible nasal emissions in speech of children with cleft palate”

***Caitlin Gattuccio**, MS in Speech-Language Pathology 2011 – 2013
Thesis: “The Effects of Linguistic Factors on Analysis of Relative Fundamental Frequency in Typical Speakers”

*__Margaux Canevari__, MS in Health Sciences 2011 – 2012
Thesis: “Acoustic Correlates of Intelligibility in Parkinsonian Speech”

Masters Student Primary Research Mentor
__Cameron Snow__, MS in Biomedical Engineering 2017 – 2018
__*Hasini Weerathunge__, MS in Biomedical Engineering 2017 – 2018
__Wendy Feinstein__, MS in Speech-Language Pathology 2016 – 2017
__Jessica Silfen__, MS in Speech-Language Pathology 2015 – 2017
__*Talia Mittelman__, MS in Biomedical Engineering (BU LEAP program) 2015 – 2017
*__Alexandra Martinson__, MS in Speech-Language Pathology 2013 – 2015
__Erin Burkett__, MS in Speech-Language Pathology 2014 – 2015

Masters Student Thesis Committee Mentor
__Liana Guo__, MS in Speech-Language Pathology, MGH Institute for Health Professions 2012 – 2013
Thesis: “Generating Tonal Distinctions in Mandarin Chinese Using an Electrolarynx with Pre-Programmed Tone Patterns”

__Elizabeth Heller__, MS in Speech-Language Pathology, MGH Institute for Health Professions 2012 – 2013
Thesis: “Naturalness of Electrolarynx Speech Produced with Electromyographic versus Manual Control”

__Anh Nguyen__, MS in Speech Language Pathology 2011 – 2013
Thesis: “An Application of Steady State Visual Evoked Potential (SSVEP) Brain-Computer Interface As An Augmentative Alternative Communication System for Individuals with Locked-In Syndrome”

__Jessica Pisegna__, MS in Speech Language Pathology 2011 – 2013
Thesis: “The Efficacy of the Masako Maneuver”

__Katherine Field__, MS in Speech Language Pathology 2011 – 2013
Thesis: “The Boston Residue and Clearance Scale (BRACS): Criterion Validity”

__Asako (Kaneoka) Satoh__, MS in Speech Language Pathology 2011 – 2012
Thesis: “The Boston Residue and Clearance Scale: Reliability Testing”

Undergraduate Student Primary Mentor
Katie Carone, BS in Speech, Language, and Hearing Sciences 2019 – 2020

Megan Cushman, BS in Speech, Language, and Hearing Sciences 2019 – 2020
UROP Student Research Award ($4200) Summer 2020

Halle Duggan, BS in Speech, Language, and Hearing Sciences 2020

Jayden Font, BS in Neuroscience 2019 – present
UROP Student Research Award ($1650) Fall 2020

Ashley Mcfarlane, BS in Biomedical Engineering 2019 – 2020

Tiffany Voon, BS in Biology 2019 – 2020

Samantha Shank, BS in Speech, Language, and Hearing Sciences 2019 – 2020
UROP Student Research Award ($1650) Fall 2019
UROP Student Research Award ($1650) Spring 2020

Allison Casey, BS in Biomedical Engineering 2019 – 2020
Senior Project Advisor 2019 – 2020
Project: “Improving the Accessibility and Efficiency of Relative Fundamental Frequency”

Abigail Payne, BS in Biomedical Engineering 2019 – 2020
Senior Project Advisor 2019 – 2020
Project: “Improving the Accessibility and Efficiency of Relative Fundamental Frequency”

Tamara Polyakova, BS in Biomedical Engineering 2019 – 2020

Senior Project Advisor 2019 – 2020
Project: “Improving the Accessibility and Efficiency of Relative Fundamental Frequency”

Megan Lee, BS in Biomedical Engineering 2019

Lidiya Dubrova, BS in Speech, Language, and Hearing Sciences 2018 – 2020

Nicole Shamash, BS in Speech, Language, and Hearing Sciences 2018 – 2018

*Feng Wang, BS in Biomedical Engineering 2018 – 2020
UROP Student Research Award ($2100) Summer 2019
UROP Student Research Award ($1650) Fall 2019
UROP Student Research Award ($1650) Spring 2020

Pandu Laksono, BS in Biomedical Engineering 2018 – 2019
Senior Project Advisor 2018 – 2019
Project: “Automatic quality analysis of high speed videoendoscopic images during running speech”

India Wilkerson, BS in Dietetics 2018 - 2019

*Roxanne Segina, BA in Linguistics and BA in Spanish 2018 – 2019

Austin Luong, BS in Biomedical Engineering 2018 – present
UROP Student Research Award ($1650) Fall 2020
UROP Student Research Award ($4200) Summer 2019
UROP Student Research Award ($1650) Fall 2019
UROP Student Research Award ($1650) Spring 2020

*Dante Cilento, BS in Health Science 2018 – 2019

Jamie Kim, BS in Speech, Language, and Hearing Sciences 2017 – 2018

*Austeja Subaciute, BS in Biomedical Engineering 2017 – 2020
UROP Student Research Award ($1650) Fall 2018
UROP Student Research Award ($2100) Summer 2018
UROP Student Research Award ($1650) Fall 2019
UROP Student Research Award ($1650) Spring 2020
Senior Project Advisor 2019 – 2020
Project: “Improving the Accessibility and Efficiency of Relative Fundamental Frequency”

Lin Zhang, BS in Biomedical Engineering 2017 - 2018

Zach Morgan, BS in Biomedical Engineering 2017 – 2018

*Katharine Kolin, BS in Neuroscience and BS in Computer Science 2017 – 2018
UROP Student Research Award ($825) Spring 2018
UROP Student Research Award ($2100) Summer 2018

*Jake Noordzij, BS in Biomedical Engineering 2016 – 2018
UROP Student Research Award ($1650) Spring 2017
UROP Student Research Award ($4200) Summer 2017
UROP Student Research Award ($1650) Fall 2017
UROP Student Research Award ($1650) Spring 2018

Nadia Oleinik, BS in Human Physiology 2016 – 2017
UROP Student Research Award ($1650) Spring 2017
UROP Faculty Matching Grant Award ($2100) Summer 2017

Andreas Singer, BS in Computer Science 2016 – 2017

Sophia Letcher, BS in Neuroscience, Kenyon College Summer 2016

*Nicole Enos, BS in Biomedical Engineering 2016 – 2019
UROP Student Research Award ($1650) Fall 2016
UROP Student Research Award ($1650) Spring 2017
UROP Student Research Award ($4200) Summer 2017
Summer Term Alumni Research Scholar ($3725) Summer 2017
UROP Student Research Award ($1650) Fall 2017

UROP Student Research Award ($1650) Spring 2018
UROP Student Travel Award ($600) Spring 2018
UROP Student Research Award ($4200; *declined*) Summer 2018
UROP Student Research Award ($825) Fall 2018
Senior Project Advisor 2018 – 2019
Project: “Automatic quality analysis of high speed videoendoscopic images during running speech”

Richard Fu, BS in Biomedical Engineering 2016
UROP Student Research Award ($4200) Summer 2016

Saniya Shah, BS in Biomedical Engineering 2015 – 2016
Senior Project Advisor
Project: “Human-machine-interfacing for communication access in severe paralysis”

Amrita Nishtala BS in Biomedical Engineering 2015 – 2016
Senior Project Advisor
Project: “Human-machine-interfacing for communication access in severe paralysis”

Grace O’Donnell, BS in Neuroscience
Research Supervisor 2015 – 2016
UROP Student Research Award ($1500) Spring 2016

*Ashling Lupiani, BS in Neuroscience
Research Supervisor 2015 – 2017
Undergraduate fellowship in computational neuroscience 2015 – 2017

Theodore Kahn, BS in Biology
Research Supervisor 2015

*Kate Girouard, BS in Biomedical Engineering
Research Supervisor 2014 – 2017
UROP Student Research Award ($4200) Summer 2015
Summer Term Alumni Research Scholar ($3200) Summer 2015

*Christina Stevens, BS in Biomedical Engineering
Senior Project Advisor 2013 – 2014
Project: “Design of Training Interfaces for Intonation Control with an Electromyographic Voice Prosthesis”
Research Supervisor 2013 – 2014
Summer Term Alumni Research Scholar ($3200) Summer 2013

Felicia Patel, BS in Biomedical Engineering
Senior Project Advisor
Project: “Design of Training Interfaces for Intonation Control with an Electromyographic Voice Prosthesis” 2013 – 2014

*Juliana Valentin, BS in Biomedical Engineering
Senior Project Advisor 2013 – 2014
Project: “Design of Training Interfaces for Intonation Control with an Electromyographic Voice Prosthesis”
Research Supervisor 2013

*Joseph Mendoza, BS in Biomedical Engineering
Research Supervisor 2013 – 2015

*Carolyn Michener, BS in Speech, Language, and Hearing Sciences
Research Supervisor 2012 – 2016
Mentor, Sargent College Thesis for Distinction 2015 – 2016
Project: “Extending relative fundamental frequency measures to aperiodic voices with computational pitch estimates based on auditory perceptual modeling”
UROP Student Research Award ($750) Fall 2013
UROP Student Research Award ($1500) Spring 2014
CELEST Summer Program for Undergraduates ($4500 + housing costs) Summer 2014

UROP Student Research Award ($1500) Fall 2014
UROP Student Research Award ($4200) Summer 2015

Lynne Messina, BS in Biomedical Engineering
Senior Project Advisor 2012 – 2013
Project: ”Design of Noninvasive Technology for Real-time Estimation of Hyolaryngeal Kinematics for Videogame Control”

Emily Bonazelli, BS in Biomedical Engineering
Senior Project Advisor 2012 – 2013
Project: ”Design of Noninvasive Technology for Real-time Estimation of Hyolaryngeal Kinematics for Videogame Control”
Research Supervisor 2012

Lauren Kalfin, BS in Biomedical Engineering
Research Supervisor 2012 – 2013

*Gabrielle Hands, BS in Neuroscience
Research Supervisor, UROP research mentor 2011 – 2014
UROP Faculty Matching Grant award ($2000) Summer 2012
Howard Hughes Medical Institute Research Supplies Award ($750) Summer 2012
2012 Undergraduate Research Symposium Poster Presentation: “Effects of Sensory Training Modality on Control of an Auditory Body-Machine-Interface” Fall 2012
UROP Student Research Award ($1750) Fall 2013
UROP Faculty Matching Grant award ($750) Spring 2014

Nisha Dhawlikar, BS in Biology 2011 – 2013
Research Supervisor

Alan Pacheco, BS in Biomedical Engineering 2011 – 2013
Research Supervisor

*Howard Terry, BS in Biology 2011 – 2012
Research Supervisor

*Boris Virnik, BS in Biomedical Engineering
Senior Project Advisor 2011 – 2012
Project: ”Design of a Novel Videogame Based Rehabilitation Tool for Velopharyngeal Dysfunction”

*Elias Thorp, BS in Biomedical Engineering
Senior Project Advisor 2011 – 2012
Project: ”Design of a Novel Videogame Based Rehabilitation Tool for Velopharyngeal Dysfunction”
Research Supervisor 2012

<u>Undergraduate Honors Thesis Committee Member</u>
Jessica Malloy, BS in Neuroscience
Committee Member, Independent Work for Distinction in Neuroscience 2012 – 2013
Project: “Delayed auditory feedback and syllable sequencing: behavioral and pilot EEG studies”

<u>High School Students, Primary Research Mentor</u>
Max Hardcastle, BU Academy (co-mentors, Defne Abur & Elizabeth Heller Murray) 2015 – 2016
Praneet Polineni, BU RISE Program (co-mentor, Lenny Varghese) 2014
William Cunningham, BU Academy (co-mentor, Gabriel Cler) 2014 – 2015
Ilya Yudkovich, BU Academy 2013

Student Academic Advising:

AY 2020 – 2021	0 undergraduate students	5 graduate students

AY 2019 – 2020	19 undergraduate students	6 graduate students
AY 2018 – 2019	15 undergraduate students	6 graduate students
AY 2017 – 2018	9 undergraduate students	8 graduate students
AY 2016 – 2017	9 undergraduate students	5 graduate students
AY 2015 – 2016	6 undergraduate students	3 graduate students
AY 2014 – 2015	8 undergraduate students	3 graduate students
AY 2013 – 2014	13 undergraduate students	2 graduate students
AY 2012 – 2013	10 undergraduate students	1 graduate student

University Service:

Department-level Service

Member, Assistant Clinical Professor Search Committee Department of Speech, Language, and Hearing Sciences	2019 – 2020
Chair, Chair Search Committee Department of Speech, Language, and Hearing Sciences	2018 – 2019
Member, Assistant Professor Search Committee Department of Biomedical Engineering	2018 – 2019
Member, Chair Search Committee Department of Speech, Language, and Hearing Sciences	2017 – 2018
Steering Committee Member, Quantitative Biology and Physiology training grant Department of Biomedical Engineering	2017 – present
Chair, ASHA 2018 Reception Planning Committee	2017 – 2018
Member, Clinical Assistant Professor Search Committee Department of Speech, Language, and Hearing Sciences	2015 – 2016
Member, Assistant Professor Search Committee Department of Biomedical Engineering	2016 – 2017
Member, Colloquium Series Organization Committee Department of Speech, Language, and Hearing Sciences, Boston University	2012 – 2015

College-level Service

Organizer, Sargent College Internal Grant Review	2014 – 2017
Member, Sargent Virtual Conference Committee	2015
Member, Sargent College Faculty Support Committee	2016 – present
Member, Sargent Voice Clinic Development Committee	2014 – present
Member, Dudley Allen Sargent Research Fund Review Committee	2018 2017 2015 2014
Member, Undergraduate Education Committee, Sargent College, Boston University	2012 – 2016

University-level Service

Member and Executive Board Member Center for Research in Sensory Communication & Emerging Neural Technology	2016 – 2018
Member, Graduate Program for Neuroscience Curriculum Development Committee	2014 – 2015

Member, Advanced Training in Communication Sciences Program, Executive Committee	2014 – present
Boston University Representative Faculty Advisory Group for Kuali Coeus user interface	2013 – 2014
Member, Faculty Advisory Group for New Research Website	2013
Member Boston University CompNet Outreach and Meeting Initiatives Committee	2012 – 2016

Professional Service:

Grant Review

Member, NIH Motor Function and Speech Rehabilitation (MFSR) Study Section	2019 – 2023
Ad hoc reviewer, NIH Motor Function and Speech Rehabilitation (MFSR) Study Section	Feb 2018 Jun 2017 Oct 2016 Feb 2016
Ad hoc Reviewer, NIDCD Communication Disorders Review Committee (CDRC)	Oct 2018 Oct 2017 Feb 2017
Reviewer, NSERC Discovery Grants	2019 – 2020
Reviewer, NIH/CSR ZRG1 BBBP-B (03) M Ad hoc Review Panel	Jun 2018
Reviewer, NIH BBBP-T (91) Ad hoc Review Panel	Apr 2017
NSF CHS Ad Hoc Review (1 proposal)	May 2019
NSF CHS-18-MED2 Panel	Jan 2018
Reviewer, NSF IIS-CHS CAREER Panel	Sep 2016
Reviewer, NSF CBET-DARE CAREER Panel	Sep 2017
NSF Panel SCH-EXP, Smart and Connected Health Program	Feb 2014 Aug 2013
NSF CHS CRII Panel	Nov 2014
Reviewer/Trainee, American Speech-Language-Hearing Foundation Grant Review	Aug 2014

Conferences, workshops, and journals

Invited Participant, National Institute on Deafness and Other Communication Disorders (NIDCD) Spasmodic Dysphonia Workshop	2019
Program Co-Chair 2020 Conference on Motor Speech	2018 – 2020
Poster Judge, 13th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research	2019
Invited Speaker, National Institute on Deafness and Other Communication Disorders (NIDCD) Motor Speech Disorders Workshop	2018
Member of Speech Motor Control Track Program Committee 2018 Conference on Motor Speech, Savannah, GA	2017 – 2018
Member of Speech Motor Control Track Program Committee 2014 Conference on Motor Speech, Sarasota, FL	2013 – 2014
Organizer, Boston Speech Motor Control Symposium	2017 – present

Organizer, Boston Speech Motor Control Working Group	2014 – present
Member, Program Committee; Session Chair, 10th International Conference on Voice Physiology and Biomechanics (ICVPB)	2015 – 2016
Co-Moderator, Session III: “Voice Disorder”, American Broncho-Esophagological Association Annual Meeting	2015
Reviewer, Speech Communication Student Poster Competition, 167th Meeting of the Acoustical Society of America	2014
Poster Judge, Voice Foundation Annual Symposium	2017 – 2018
Panel Member, New Investigator Forum, Voice Foundation Annual Symposium	2017

Service to ASHA

Member, Research and Scientific Affairs Committee	2019 – 2021
Mentor and Faculty, Lessons for Success Conference	2019 2020
Reviewer and Faculty, ASHA/ASHF Grant Review and Reviewer Training	2019 2020
Editor, Journal of Speech, Language, and Hearing Research	2020 – present
Editorial Board Member, Journal of Speech, Language, and Hearing Research	2017 – 2020
Member, Motor Speech Disorders Program Committee, American Speech-Language-Hearing 2020 Annual Convention	2019 – 2020
Member, Speech and Language Science Program Committee, American Speech-Language-Hearing 2018 Annual Convention	2017 – 2018
Member, Speech and Language Science Program Committee, American Speech-Language-Hearing 2017 Annual Convention	2016 – 2017
Member, Voice and Alaryngeal Program Committee, American Speech-Language-Hearing 2017 Annual Convention	2016 – 2017
Member, Voice and Alaryngeal Program Committee, American Speech-Language-Hearing 2016 Annual Convention	2015 – 2016
Member, Voice and Alaryngeal Program Committee, American Speech-Language-Hearing 2015 Annual Convention	2014 – 2015
Member, Voice, Resonance, and Alaryngeal Committee, American Speech-Language-Hearing 2014 Annual Convention	2013 – 2014
Table Host: “Success in Early Tenure Track Positions”, 21st annual Research Roundtables at the 2018 ASHA Convention	2018
Table Host: “Negotiating Interdisciplinary Collaborations”, 19th annual Research Roundtables at the 2016 ASHA Convention	2016
Table Host: “Promoting Your Career through Social Media”, 18th annual Research Roundtables at the 2015 ASHA Convention	2015
Table Host: “How to Advance your Program of Research in a Difficult Funding Climate”, 17th annual Research Roundtables at the 2014 ASHA Convention	2014

Service to IEEE

Associate Editor, IEEE Transactions on Neural Systems and Rehabilitation Engineering	2017 – 2019

Organizer, Associate Editor, Session Chair: “Neural Engineering in Speech and Hearing”, IEEE Engineering in Medicine and Biology Conference 2013, Osaka, Japan	2013
Reviewer, IEEE Engineering in Medicine and Biology Conference 2013, Osaka, Japan	2013
Invited Session Chair: “Rehabilitation Engineering for Speech and Hearing Applications”, IEEE Engineering in Medicine and Biology Conference 2012, San Diego, CA	2012
Session Co-Chair: “Human Performance I”, IEEE Engineering in Medicine and Biology Conference 2012, San Diego, CA	2012
Reviewer, IEEE Engineering in Medicine and Biology Conference 2012, San Diego, CA	2012
Invited Session Chair: “Assistive Technology for Human Communication” Track co-Chair: “Human-Robot Interaction and Robot-aided Living for a Healthier Tomorrow”, IEEE Engineering in Medicine and Biology Conference 2011, Boston, MA	2011
Reviewer, IEEE Engineering in Medicine and Biology Conference 2011, Boston, MA	2011

Industry / Government / Consulting Experience:

Scientific Advisor Altec, Inc. / Delsys, Inc.	2019 – present
Consultant, Development of a Home-based Hand Rehabilitation Device Pine Hill Labs, Seattle, WA	2010
Consultant, Facial Nerve Function in Rats Tessa Hadlock, M.D., Massachusetts Eye & Ear Infirmary, Boston, MA	2008 – 2009
Consultant, Sub-Vocal Speech Exploration BAE Systems, Burlington, MA	2007
Co-op, Group Environmental Affairs & Safety GE Aircraft Engines, Cincinnati, OH	2003 – 2004
Engineering Co-op, Peebles Test Operation Quality Group GE Aircraft Engines, Peebles, OH	2002 – 2003
Engineering Intern, Department of Public Works Northampton, MA	2001

Professional Affiliations:

American Speech-Language-Hearing Association
Acoustical Society of America
Society for Neuroscience
IEEE, Engineering in Medicine and Biology Society

Outreach:

Lab host for Perkins School for the Blind (high school) student	2019
Lab host for Perkins School for the Blind (high school) student	2018
Lab host for BU Research Internship in Science and Engineering (RISE) Program	2018
Lab host, BU Upward Bound program	2018
Program Coordinator, Johns Hopkins Center For Talented Youth	2017
Lab host for Perkins School for the Blind (high school) student	2015
Panel member, Perkins School for the Blind Career Exploration Day	Mar 2015

Lab tour and demonstrations for the Summer Pathways in Science and Engineering Program	July 2014
Lab host for BU Research Internship in Science and Engineering (RISE) Program	2014
Lab host for Perkins School for the Blind (high school) student	2014
Research presentation to the BU chapter of the National Student Speech Language Hearing Association (NSSLHA), with Gabriel Cler	Mar 2014
Panel member, Perkins School for the Blind Career Exploration Day	Mar 2014
Coordination of lab tours and experimental demonstrations of the Stepp Lab for Okayama Prefectual Tsuyama High School (Japan) students	2014
Lab host for BU Academy (high school) science students	2013 – present
Coordination of lab tours and experimental demonstrations of the Stepp Lab for BU Academy (high school) science students	2013 – present
Mentor Graduate Women Alumnae of MIT	2012
Lab outreach to middle school science students at the Elliot School in Boston, MA: guest judges at their school science fair.	Jan 2012
Participated as a “workplace host” for first-year engineering student, Dannia Guzman, as part of the Smith College Engineering Shadow Program.	Jan 2012
Lab outreach presentation and hands-on activities with the 7th grade science students at the Elliot School in Boston, MA	Dec 2011
Lab outreach presentation and hands-on activities with the Cambridge Boys and Girls Club in Cambridge, MA	Nov 2011
Outreach presentations on careers in science at a local middle school (Blatchley Middle School) and high schools (Mt. Edgecumbe High School), the Sitka Sound Science Center, Sitka Rotary Club, and the local girl scout chapter of Sitka, Alaska: “Every Child is a Scientist: Engaging children in scientific thinking and reasoning through robotics and computer science” and “How to have a career in Brain Computer Interfaces.”	Sep 2010
Coordination of lab tours and school outreach presentations of the Neurobotics lab with Seattle/Bellevue area schools	2009 – 2011
Volunteer BostonCares, Boston, MA	2007 – 2009
Region F Student Leadership Coach Society of Women Engineers (SWE), Region F (northeast)	2004 – 2006