

Cara E. Stepp, PhD

Speech, Language, and Hearing Sciences
635 Commonwealth Avenue
Boston University
Boston, MA 02215

Phone: 617.353.7487
Fax: 617.353.5074
Email: cstepp@bu.edu
Web: www.stepplab.com

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, PhD 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:

- 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

NIH NIDCD R13DC017674 Stapp (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 students and post-doctoral researchers. It 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 (CEUs) to attendees who are speech-language pathologists (SLPs). NIDCD funding will allow BSMCS to meet the goals of accessibility and inclusivity, fostering research and education in speech motor control across diverse groups of students, researchers, and clinicians.

\$17,160 direct + \$0 indirect = \$17,160

NIH NIDCD R01 DC016270 Stapp (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 SS modalities of speech motor control in Parkinson's disease, all in relation to functional speech outcomes.

\$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 Stapp (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

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

Current Research Funding as co-I

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 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

Completed Research Funding

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

NIH NIDCD R03DC012651

Stepp (PI)

03/05/13-02/28/16

Updated 6/25/2019

C.E. Stepp Curriculum Vitae (3/31)

Automation of Relative Fundamental Frequency Estimation

NC 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

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

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

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 (HMIs) for the BU Unlock framework in order to provide communication for a wider array of individuals with severe motor impairments.

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

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.

Total Award Amount: \$978,501

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

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 muscular (sEMG) inputs to human-machine-interfaces (HMIs) for the BU Unlock framework in order 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 Videogame-Based Speech Rehabilitation for Children with Hearing Loss Role: PI The goal of this project is to develop a new rehabilitative platform for individuals with hearing loss using a sensor we have 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 possible with this type of intervention.	Stepp (PI)	09/01/13-08/31/14
		\$72,000 direct + \$8,000 indirect = \$80,000
American Speech-Language-Hearing Foundation 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 measurement of voice-related neck tissue vibration using a small skin-surface accelerometer instead of acoustics.	Stepp (PI)	01/01/13-12/31/13
		\$10,000 direct + \$0 = \$10,000
ALA-Nestle Nutrition Institute Dysphagia Research Grant 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.	Stepp (PI)	07/01/12-06/30/13
		\$10,000 direct + \$0 indirect = \$10,000
Boston University Grants for Undergraduate Teaching and Scholarship Program 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.		11/01/12-06/30/13
		\$1,850 direct + \$0 indirect = \$1,850
Coulter Translational Partnership Award 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.	Kiran (PI)	07/01/12-6/30/13
		\$124,000 direct + \$0 indirect = \$124,000
NIH NCATS KL2TR000158 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.	Center (PI)	01/01/13-04/30/13
		\$19,035 direct + \$0 indirect = \$19,035
Dudley A. Sargent Research Fund 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.	Stepp (PI)	05/01/12-04/30/13
		\$6,905 direct + \$0 indirect = \$6,905

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

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.

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

- 71] 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*, *In Press*.
- 70] Buckley D.P., Dahl K.L.†, Cler G.J.†, **Stepp C.E.** “Transmasculine voice modification: A case study”, *Journal of Voice*, *In Press*.
- 69] 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*.
- 68] 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*, *In Press*. *These authors contributed equally
- 67] 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*, *In Press*.
- 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*, *In Press*.
- 65] 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*, *In Press*.
- 64] 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*, *In Press*.
- 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.
- 62] Diaz-Cadiz M.E., McKenna V.S.†, Vojtech J.M.†, **Stepp C.E.** “Adductory Vocal Fold Kinematic Trajectories during Conventional versus High-Speed Videoendoscopy”, *Journal of Speech, Language, and Hearing Research*, 62(6), pp. 1685-1706, 2019.
- 61] 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”, *Journal of Speech, Language, and Hearing Research*, 62(4), pp. 815-834, 2019.
- 60] McKenna V.S.†, **Stepp C.E.** “The relationship between acoustical and perceptual measures of vocal effort”, *Journal of the Acoustical Society of America*, 144(3), 1643-1658, 2018.
- 59] Vojtech J.M.†, Cler G.J.†, Noordzij, J.P.†, **Stepp C.E.** “Prediction of optimal facial electromyographic sensor configurations for human-machine interface control”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 26(8), pp. 1566-1576, 2018.
- 58] Heller Murray E.S.†, Michener C.M.†, Enflo L.†, Cler M.C.†, **Stepp C.E.** “The impact of glottal configuration on speech breathing”, *Journal of Voice*, 32(4), pp. 420-427, 2018.
- 57] Abur D.A.†, Lupiani A.A.†, Hickox A.E., Shinn-Cunningham B., **Stepp C.E.** “Loudness perception of pure tones in Parkinson’s disease,” *Journal of Speech, Language, and Hearing Research*, 61(6), pp. 1487-1496, 2018.
- 56] Kaneoka A.†, Pisegna J.M., Inocuchi H., Ueha R., Goto T., Nito T., **Stepp C.E.**, LaValley M.P., Haga N., Langmore S.E. “Relationship Between Laryngeal Sensory Deficits, Aspiration, and Pneumonia in Patients with Dysphagia”, *Dysphagia*, 33(2), pp. 192-199, 2018.
- 55] Abur D.A.†, Lester R.A.†, Daliri A., Guenther F.H., **Stepp C.E.** “Sensorimotor adaptation of voice fundamental frequency in Parkinson’s disease”, *PLoS ONE*, 13(1): e0191839, 2018.

- 54] McKenna V.S.[†], Llico A.[†], Mehta D.D., Perkell J.S., **Stepp C.E.** "Magnitude of neck-surface vibration as an estimate of subglottal pressure during modulations of vocal effort and intensity in healthy speakers", *Journal of Speech, Language, and Hearing Research*, 60(12), pp. 3404-3416, 2017.
- 53] Lien Y.S.[†], Heller Murray E.S.[†], Calabrese C.[†], Michener C.M.[†], Van Stan J., Mehta D.D., Hillman R.E., Noordzij J.P., **Stepp C.E.** "Validation of an algorithm for semi-automated estimation of relative fundamental frequency", *Annals of Otology, Laryngology, and Rhinology*, 126(10), pp. 712-716, 2017.
- 52] Kaneoka A.[†], Pisegna J.M., Krisciunas G.P., Takaharu N., **Stepp C.E.**, LaValley M.P., Langmore S.E. "Variability of the Pressure Measurements Exerted by the Tip of Laryngoscope During Laryngeal Sensory Testing: A Clinical Demonstration", *American Journal of Speech-Language Pathology*, 26(3), pp. 729-736, 2017.
- 51] MacPherson M.K., Abur D.A.[†], **Stepp C.E.** "Acoustic measures of voice and physiologic measures of autonomic arousal during speech as a function of cognitive load", *Journal of Voice*, 31(4), 504.e1-504.e9, 2017.
- 50] Cler G.J.[†], Lee J.C., Mittelman T.[†], **Stepp C.E.**, Bohland J.W. "Kinematic analysis of speech sound sequencing errors induced by delayed auditory feedback," *Journal of Speech, Language, and Hearing Research*, 60(6S), 1695-1711, 2017.
- 49] Cler G.J.[†], Mittelman T.[†], Braden M.N., Harvey-Woodnorth G., **Stepp C.E.** "Videogame Rehabilitation of Velopharyngeal Dysfunction: A Case Series", *Journal of Speech, Language, and Hearing Research*, 60(6S), pp. 1800-1809, 2017.
- 48] Heller Murray E.S.[†], Lien Y.S.[†], Michener C.M.[†], Calabrese C.[†], Van Stan J., Mehta D.D., Hillman R.E., Noordzij J.P., **Stepp C.E.** "Relative fundamental frequency distinguishes between non-phonotraumatic and phonotraumatic vocal hyperfunction", *Journal of Speech, Language, and Hearing Research*, 1507-1515, 2017.
- 47] **Stepp C.E.**, Lester-Smith, R.A.[†], Abur D.A.[†], Daliri A., Noordzij J.P., Lupiani, A.[†] "Evidence for Auditory-Motor Impairment in Individuals with Hyperfunctional Voice Disorders", *Journal of Speech, Language, and Hearing Research*, 1545-1550, 2017.
- 46] 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", *Journal of Speech, Language, and Hearing Research*, 59(6), pp. 1283 – 1294, 2016.
- 45] Heller Murray E.S.[†], Girouard K.[†], Cler M.C.[†], **Stepp C.E.** "Development of an Electronic Documentation System for Voice Therapy: A New Teaching and Clinical Research Tool", *Perspectives of the ASHA Special Interest Groups SIG 3, Vol. 1(Part 2)*, 2016. (Invited)
- 44] Heller Murray, E.S.[†], Mendoza J.O.[†], Gill S.V., Perkell J.S., **Stepp C.E.** "Effects of biofeedback on control and generalization of nasalization in typical speakers," *Journal of Speech, Language, and Hearing Research*, 59, pp. 1025-1034, 2016.
- 43] Cler M.J.[†], Lien Y.S.[†], Braden M.N., Mittelman T.[†], Downing K.[†], **Stepp C.E.** "Objective Measure of Nasal Air Emission Using Nasal Accelerometry", *Journal of Speech, Language, and Hearing Research*, 59, pp. 1018-1024, 2016.
- 42] Cler M.J.[†], Nieto-Castanon A., Guenther F.H., Fager S.K., **Stepp C.E.** "Surface electromyographic control of a novel phonemic interface for speech synthesis", *Augmentative and Alternative Communication*, 32(2), pp. 120 – 130, 2016.
- 41] Heller Murray E.S.[†], Hands G.L.[†], Calabrese C.[†], **Stepp C.E.** "Effects of adventitious acute vocal trauma: Relative fundamental frequency and listener perception", *Journal of Voice*, 30(2), pp. 177 – 185, 2016. [NIHMSID 695703]
- 40] Hands G.L.[†], **Stepp C.E.** "Effect of age on human-computer-interface control via neck electromyography", *Interacting with Computers*, 28(1), pp. 47 – 54, 2016. [NIHMSID 654663]
- 39] Lien Y.S.[†], Calabrese C.[†], Michener C.M.[†], Heller Murray E.S.[†], Van Stan J., Mehta D.D., Hillman R.E., Noordzij J.P., **Stepp C.E.** "Voice relative fundamental frequency via neck-skin acceleration in individuals with voice disorders", *Journal of Speech, Language, and Hearing Research*, 58, pp. 1482-1487, 2015. [NIHMSID 72058]

- 38] Anand S.†, **Stepp C.E.** “Listener perception of monopitch, naturalness and intelligibility for speakers with Parkinson’s disease,” *Journal of Speech, Language, and Hearing Research*, 58, pp. 1134-1144, 2015.
- 37] Cler M.J.†, **Stepp C.E.** “Discrete vs. Continuous Mapping of Facial Electromyography for Human-Machine-Interface Control: Performance and Training Effects”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 24, pp. 572 – 580, 2015. [PMC4496287]
- 36] Lien Y.S.†, Michener C.M.†, Eadie T.L., **Stepp C.E.** “Individual monitoring of vocal effort with relative fundamental frequency: Relationships with aerodynamics and listener perception”, *Journal of Speech, Language, and Hearing Research*, 58, pp. 566 – 575, 2015. [PMC4490061]
- 35] Britton D., Benditt J., Merati A., Miller R., **Stepp C.E.**, Boitano L., Hu A., Ciol M., Yorkston K. “Associations between laryngeal and cough dysfunction in motor neuron disease with bulbar involvement”, *Dysphagia*, 29(6), pp. 637-646, 2014.
- 34] Malloy J.R.†, Valentin J.C.†, Hands G.L.†, Stevens C.A.†, Langmore S.E., Noordzij J.P., **Stepp C.E.** “Visuomotor control of neck surface electromyography in Parkinson’s disease”, *Neurorehabilitation*, 35, pp. 795-803, 2014. [PMC4368899]
- 33] Perrachione T.K., **Stepp C.E.**, Hillman R.E., Wong P.C.M. “Talker identification across source mechanisms: Experiments with laryngeal and electrolarynx speech”, *Journal of Speech, Language, and Hearing Research*, 57, pp. 1651-1665, 2014.
- 32] Varghese L.A.†, Mendoza J.O.†, Braden M.N., **Stepp C.E.** “Effects of spectral content on Horii Oral-Nasal Coupling scores in children”, *Journal of the Acoustical Society of America*, 136, pp. 1295-1306, 2014. [PMC4165226]
- 31] Lien Y.S.†, Gattuccio C.I.†, **Stepp C.E.** “Effects of Phonetic Context on Relative Fundamental Frequency”, *Journal of Speech, Language, and Hearing Research*, 57, pp. 1259-1267, 2014. [PMC4119098]
- 30] Hands G.L.†, Larson E.D., **Stepp C.E.** “Effects of augmentative visual training on learning and generalization of audio-motor mapping”, *Human Movement Science*, 35, pp. 145-155, 2014. [PMC4061242]
- 29] Lien Y.S.†, **Stepp C.E.** “Comparison of voice relative fundamental frequency estimates derived from an accelerometer signal and low-pass filtered and unprocessed microphone signals”, *Journal of the Acoustical Society of America*, 135(5), pp. 2977-2985, 2014. [PMC4032403]
- 28] Thorp E.B.†, Larson E., **Stepp C.E.** “Combined Auditory and Vibrotactile Feedback for Human-Machine-Interface Control”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 22(1), pp.62-68, 2014. [PMC3939061]
- 27] Bowen L.K.†, Hands G.L.†, Pradhan S., **Stepp C.E.** “Fundamental Frequency Variability in Parkinson’s Disease”, *Journal of Medical Speech-Language Pathology*, 21(3), 2013. [NIHMSID 439995]
- 26] Thorp E.B.†, Virnik B.†, **Stepp C.E.** “Comparison of Nasal Acceleration and Nasalance Across Vowels”, *Journal of Speech, Language, and Hearing Research*, 56(5), pp. 1476-1484, 2013.
- 25] Rombokas E.†, **Stepp C.E.**, Chang, C.†, Malhotra M., Matsuoka Y. “Vibrotactile Sensory Substitution for Electromyographic Control of Object Manipulation”, *IEEE Transactions on Biomedical Engineering*, 60(8), pp. 2226 – 2232, 2013.
- 24] Larson E.D., Terry H.†, Canevari M.†, **Stepp C.E.** “Categorical vowel perception enhances the effectiveness and generalization of auditory feedback in human-machine-interfaces”, *PLoS ONE*, 8(3): e59860, 2013. [PMC3602293]
- 23] Eadie T.L., **Stepp C.E.** “An Acoustic Correlate of Vocal Effort in Spasmodic Dysphonia”, *Annals of Otolaryngology, Rhinology, & Laryngology*, 122(3), pp. 169-176, 2013.
- 22] **Stepp C.E.** “Relative fundamental frequency during vocal onset and offset in older speakers with and without Parkinson’s Disease”, *Journal of the Acoustical Society of America*, 133(3), pp. 1637-1643, 2013. [PMC3606308]
- 21] **Stepp C.E.**, Sawin D.E., Eadie T.L. “The Relationship between Perception of Vocal Effort and Relative Fundamental Frequency during Voicing Offset and Onset”, *Journal of Speech, Language, and Hearing Research*, 55(6), pp. 1887-1896, 2012.

- 20] **Stepp C.E.** “Surface electromyography for speech and swallowing systems: measurement, analysis, and interpretation”, *Journal of Speech, Language, and Hearing Research*, 55(4), pp. 1232-1246, 2012.
- 19] **Stepp C.E.**, An Q., Matsuoka, Y. “Repeated Training with Augmentative Vibrotactile Feedback Increases Object Manipulation Performance”, *PLoS ONE*, 7(2), e32743, 2012. [PMC3287982]
- 18] **Stepp C.E.**, Matsuoka.Y. “Vibrotactile Sensory Substitution for Object Manipulation: Amplitude versus Frequency Modulation”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 20(1), pp. 31-37, 2012. [PMC3395369]
- 17] Britton D., Yorkston K.M., Eadie T., **Stepp C.E.**, Ciol M.A., Baylor C., Merati A.L. “Endoscopic assessment of vocal fold movements during cough”, *Annals of Otology, Rhinology, & Laryngology*, 121(1), pp. 21-27, 2012.
- 16] **Stepp C.E.**, Oyunerdene N.[†], Matsuoka.Y. “Kinesthetic Motor Imagery Modulates Intermuscular Coherence”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 19(6), pp. 638-643, 2011. [PMC3401579]
- 15] **Stepp C.E.**, Matsuoka.Y. “Object Manipulation Improvements with Single Session Training Outweigh the Differences among Stimulation Sites during Vibrotactile Feedback”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 19(6), pp. 677-685, 2011. [PMC3401581]
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- 13] **Stepp C.E.**, Merchant, G.R., Heaton J.T., Hillman, R.E. “Effects of Voice Therapy on Relative Fundamental Frequency during Voicing Offset and Onset in Patients with Vocal Hyperfunction”, *Journal of Speech, Language, and Hearing Research*, 54(5), pp. 1260-1266, 2011. [PMC3394393]
- 12] **Stepp C.E.**, Hillman, R.E., Heaton J.T. “Modulation of Neck Intermuscular Beta Coherence during Voice and Speech”, *Journal of Speech, Language, and Hearing Research*, 54(3), pp. 836-844, 2011.
- 11] **Stepp C.E.**, Heaton J.T., Braden M.N., Jetté M.E., Stadelman-Cohen, T.K., Hillman R.E. “Comparison of neck tension palpation rating systems with surface electromyographic and acoustic measures in vocal hyperfunction”, *Journal of Voice*, 25(1), pp. 67-75, 2011. [PMC2913165]
- 10] **Stepp C.E.**, Hillman R.E., Heaton J.T. “The Impact of Vocal Hyperfunction on Relative Fundamental Frequency during Voicing Offset and Onset”, *Journal of Speech, Language, and Hearing Research*, 53(5), pp. 1220-1226, 2010.
- 9] **Stepp C.E.**, Heaton J.T., Jetté M.E., Burns J.A., Hillman, R.E. “Neck surface electromyography as a measure of vocal hyperfunction before and after injection laryngoplasty”, *Annals of Otology, Rhinology, & Laryngology*, 119(9), pp. 594-601, 2010. [PMC3392645]
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- 6] Kubert H.L., **Stepp C.E.**, Zeitels S.M., Gooley J.E., Walsh M.J., Prakash S.R. Hillman R.E., Heaton J.T. “Electromyographic control of a hands-free electrolarynx using neck strap muscles”, *Journal of Communication Disorders*, 42(3), pp. 211-225, 2009.
- 5] **Stepp C.E.**, Heaton J.T., Rolland R.G., Hillman R.E. “Neck and face surface electromyography for prosthetic voice control after total laryngectomy”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 17(2), pp. 146-155, 2009. [PMC387553]
- 4] **Stepp C.E.**, Heaton J.T., Hillman R.E. “Post-laryngectomy speech respiration patterns”, *Annals of Otology, Rhinology & Laryngology*, 117(8), pp. 557-563, 2008. [PMC3395327]
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2] **Stepp C.E.**, Voss S.E. "Acoustics of the human middle-ear air space", Journal of the Acoustical Society of America, 118(2), pp. 861-871, 2005.

1] Subramaniam K., **Stepp C.**, Pignatello J.J., Smets B., Grasso, D. "Enhancement of Polynuclear Aromatic Hydrocarbon Desorption by Complexing Agents in Weathered Soil", Environmental Engineering Science, 21(4), pp. 515-523, 2004.

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]

16] *Smith D.S.†, Varghese L.A.†, **Stepp C.E.**, Guenther F.H. "Comparison of Steady-State Visual and Somatosensory Evoked Potentials for Brain-Computer Interface Control," Proceedings of the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 27 – 30 August, 2014, pp. 1234 – 1237. [poster presentation]

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]

14] Favrot, S., Michener C.M.†, **Stepp C.E.** "Discrete and continuous auditory feedback based on pitch and spatial lateralization for human-machine-interface control," Proceedings of Meetings on Acoustics, 21, 050001 (2014).

13] *Lien Y.S.†, **Stepp C.E.** "Automated Estimation of Relative Fundamental Frequency", Proceedings of the 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 3 – 7 July, 2013, pp. 2136 - 2139. [poster presentation]

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]

7] **Stepp C.E.**, Chang C.†, Malhotra M., Matsuoka Y. "Vibrotactile feedback aids EMG control of object manipulation" Proceedings of the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 30 August – 3 September, 2011, pp. 1061 - 1064. [poster presentation]

- 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]
- 5] *An Q.†, Asama H., **Stepp C.E.**, Matsuoka Y. “Uncontrolled Manifold Analysis of Standing-up Motion for Development of an Assistance System,” Proceedings of the 12th IEEE International Conference on Rehabilitation Robotics, June 29 – July 1, 2011, pp. 1-5. [poster presentation]
- 4] ***Stepp C.E.**, Britton D., Chang, C.†, Merati A., Matsuoka Y. “Feasibility of game-based electromyographic biofeedback for dysphagia rehabilitation,” Proceedings of the 5th International IEEE EMBS Conference on Neural Engineering of the IEEE Engineering in Medicine and Biology Society, April 27 - May 1, 2011, pp. 233-236. [poster presentation] ****Winner of the NSF Neural Engineering Travel Award**
- 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). In Press.
- 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):

- 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.T.†, 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.
- 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-Cunningham 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., Gooley 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:

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, 33 students) Sargent College, Boston University	Fall 2018
SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 18 students) Sargent College, Boston University	Fall 2018
*SAR SH755: Applied Speech Science (graduate, 2 credits, 45 students) Sargent College, Boston University	Spring 2018
*SAR SH810: Academic Grant Preparation and Review (graduate, 2 credits, 8 students) Sargent College, Boston University – co-instructed with Gerald Kidd	Spring 2017
SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 22 students) Sargent College, Boston University	Fall 2016
KHC HS102 The Body Rewired: Reinventing Medicine through Human-Machine Interfaces (undergraduate, 4 credits, 16 students) Kilachand Honors College, Boston University	Spring 2016
SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 24 students) Sargent College, Boston University	Fall 2015
*SAR SH801 Behavioral Rehabilitation and Neuroplasticity (graduate, 2 credits, 10 students) Sargent College, Boston University	Spring 2015
SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 28 students) Sargent College, Boston University	Fall 2014
SAR SH755 Applied Speech Science (graduate, 2 credits, 29 students; taught by T. Perrachione) Sargent College, Boston University Guest Lecture: Lab review of perceptual and acoustic features of resonance disorders, how to read scientific figures	Spring 2014
*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) Sargent College, Boston University	Fall 2013
*SAR SH755 Applied Speech Science (graduate, 2 credits, 37 students; taught by D. Mehta) Sargent College, Boston University Guest Lecture: Resonance disorders, perceptual and acoustic features	Spring 2013
SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 24 students) Sargent College, Boston University	Fall 2012
*SAR SH523 Introduction to Speech Science (undergraduate, 4 credits, 22 students) Sargent College, Boston University	Fall 2011

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

Hasini Weerathunge , PhD in Biomedical Engineering Academic Advisor / Research Supervisor	2018 – present
Matti Groll , PhD in Biomedical Engineering Academic Advisor / Research Supervisor	2017 – present
* Defne Abur , PhD in Speech, Language, and Hearing Sciences Academic Advisor / Research Supervisor	2017 – present
* Yeonggwang (Paul) Park , PhD in Speech, Language, and Hearing Sciences Academic Advisor / Research Supervisor Qualifying Project Committee Member, Project: “Categorization in the perception of breathy voice quality and its relation to voice production in healthy speakers”	2016 – present 2018
* Jennifer Vojtech , PhD in Biomedical Engineering Academic Advisor / Research Supervisor National Science Foundation (NSF) Graduate Research Fellowship Program Fellowship	2015 – present 2017 – 2020
* Victoria McKenna , PhD in Speech, Language, and Hearing Sciences Academic Advisor / Research Supervisor Participant, ASHA Pathways Program Winner of the First-place Best Poster Award at the Voice Foundation Annual Symposium Qualifying Project Committee Member, Project: “Neck-Surface Accelerometer Signals as an Estimation of Subglottal Pressure during Modulated Vocal Quality in Healthy Speakers”	2015 – 2018 2017 2016 2016
* Gabriel Cler , PhD in Neuroscience (Computational focus) Research Supervisor Co-Advisor, Computational Neuroscience Training Grant Qualifying Exam Member, Project: “Optimization and Predictive Methods for Phonemic Communication Interfaces” Winner of a 2014 EMBC Student Travel Award NIH NRSA: “Optimization and prediction for fast and robust AAC”	2013 – 2018 2014 – 2015 2014 2014 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 Association's (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	
Dissertation Committee Member	TBD
Dissertation: TBD	
Andres Salazar , PhD in Cognitive and Neural Systems	
Dissertation Committee Member	2016
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	
Dissertation Committee Member	2015
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

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

Roxanne Segina, MS in Speech-Language Pathology 2019 – 2021
Thesis: “Training voice perception and production”
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 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"	2011 – 2013
Jessica Pisegna , MS in Speech Language Pathology Thesis: "The Efficacy of the Masako Maneuver"	2011 – 2013
Katherine Field , MS in Speech Language Pathology Thesis: "The Boston Residue and Clearance Scale (BRACS): Criterion Validity"	2011 – 2013
Asako (Kaneoka) Satoh , MS in Speech Language Pathology Thesis: "The Boston Residue and Clearance Scale: Reliability Testing"	2011 – 2012
 <u>Undergraduate Student Primary Mentor</u>	
Tiffany Voon, BS in Biology	2019 – present
Samantha Shank, BS in Speech, Language, and Hearing Sciences	2019 – present
Megan Lee, BS in Biomedical Engineering	2019 – present
Lidiya Dubrova, BS in Speech, Language, and Hearing Sciences	2018 – present
Nicole Shamash, BS in Speech, Language, and Hearing Sciences	2018 – 2018
Feng Wang, BS in Biomedical Engineering UROP Student Research Award (\$2100)	2018 – present Summer 2019
Pandu Laksono, BS in Biomedical Engineering Senior Project Advisor Project: "Automatic quality analysis of high speed videoendoscopic images during running speech"	2018 – 2019 2018 – 2019
India Wilkerson, BS in Dietetics	2018 - present
Roxanne Segina, BA in Linguistics and BA in Spanish	2018 – 2019
Austin Luong, BS in Biomedical Engineering UROP Student Research Award (\$4200)	2018 – present Summer 2019
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 UROP Student Research Award (\$1650) UROP Student Research Award (\$2100)	2017 – present Fall 2018 Summer 2018
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 UROP Student Research Award (\$825) UROP Student Research Award (\$2100)	2017 – 2018 Spring 2018 Summer 2018
*Jake Noordzij, BS in Biomedical Engineering UROP Student Research Award (\$1650) UROP Student Research Award (\$4200) UROP Student Research Award (\$1650) UROP Student Research Award (\$1650)	2016 – 2018 Spring 2017 Summer 2017 Fall 2017 Spring 2018
Nadia Oleinik, BS in Human Physiology UROP Student Research Award (\$1650) UROP Faculty Matching Grant Award (\$2100)	2016 – 2017 Spring 2017 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 – present

UROP Student Research Award (\$1650)	Fall 2016
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
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 Project: "Design of Noninvasive Technology for Real-time Estimation of Hyolaryngeal Kinematics for Videogame Control"	2012 – 2013
Emily Bonazelli, BS in Biomedical Engineering Senior Project Advisor Project: "Design of Noninvasive Technology for Real-time Estimation of Hyolaryngeal Kinematics for Videogame Control"	2012 – 2013
Research Supervisor	2012
Lauren Kalfin, BS in Biomedical Engineering Research Supervisor	2012 – 2013
*Gabrielle Hands, BS in Neuroscience Research Supervisor, UROP research mentor UROP Faculty Matching Grant award (\$2000) Howard Hughes Medical Institute Research Supplies Award (\$750) 2012 Undergraduate Research Symposium Poster Presentation: "Effects of Sensory Training Modality on Control of an Auditory Body-Machine-Interface"	2011 – 2014 Summer 2012 Summer 2012 Fall 2012
UROP Student Research Award (\$1750) UROP Faculty Matching Grant award (\$750)	Fall 2013 Spring 2014
Nisha Dhawlikar, BS in Biology Research Supervisor	2011 – 2013
Alan Pacheco, BS in Biomedical Engineering Research Supervisor	2011 – 2013
*Howard Terry, BS in Biology Research Supervisor	2011 – 2012
*Boris Virnik, BS in Biomedical Engineering Senior Project Advisor Project: "Design of a Novel Videogame Based Rehabilitation Tool for Velopharyngeal Dysfunction"	2011 – 2012
*Elias Thorp, BS in Biomedical Engineering Senior Project Advisor Project: "Design of a Novel Videogame Based Rehabilitation Tool for Velopharyngeal Dysfunction"	2011 – 2012
Research Supervisor	2012
<u>Undergraduate Honors Thesis Committee Member</u>	
Jessica Malloy, BS in Neuroscience Committee Member, Independent Work for Distinction in Neuroscience Project: "Delayed auditory feedback and syllable sequencing: behavioral and pilot EEG studies"	2012 – 2013
<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, Meredith Cler)	2014 – 2015
Ilya Yudkovich, BU Academy	2013

Student Academic Advising:

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

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

Invited Participant, National Institute on Deafness and Other Communication Disorders (NIDCD) Spasmodic Dysphonia Workshop	2019
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Program Co-Chair 2020 Conference on Motor Speech	2018 – 2020
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Poster Judge, 13th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research	2019
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Invited Speaker, National Institute on Deafness and Other Communication Disorders (NIDCD) Motor Speech Disorders Workshop	2018
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Member of Speech Motor Control Track Program Committee 2018 Conference on Motor Speech, Savannah, GA	2017 – 2018
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Member of Speech Motor Control Track Program Committee 2014 Conference on Motor Speech, Sarasota, FL	2013 – 2014
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Organizer, Boston Speech Motor Control Symposium	2017 – present
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Organizer, Boston Speech Motor Control Working Group	2014 – present
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Member, Program Committee; Session Chair, 10th International Conference on Voice Physiology and Biomechanics (ICVPB)	2015 – 2016
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Co-Moderator, Session III: "Voice Disorder", American Broncho-Esophagological Association Annual Meeting	2015
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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
Ad hoc Reviewer, IEEE Transactions on Neural Systems and Rehabilitation Engineering, IEEE Transactions on Biomedical Engineering, Journal of Speech, Language, and Hearing Research, International Conference on Robotics and Automation (ICRA), IEEE/ASME Transactions on Mechatronics, Journal of Rehabilitation Research and Development, Journal of NeuroEngineering and Rehabilitation, Medical Engineering & Physics, Human Movement Science, Computers in Biology and Medicine, American Journal of Speech-Language Pathology, Folia Phoniatica et Logopaedica, Journal of Laryngology and Voice, Speech Communication, Diseases of the Esophagus, Journal of Electromyography and Kinesiology, Medical & Biological Engineering & Computing, IEEE Transactions on Human-Machine Systems, Dysphagia, Laryngoscope, International Journal of Speech-Language Pathology, Journal of the Acoustical Society of America, Science Translational Medicine, Journal of Voice, Journal of Neurophysiology	2008 – present
 <i>Service to ASHA</i>	
Member, Research and Scientific Affairs Committee	2019 - 2021
Mentor and Faculty, Lessons for Success Conference	2019
Reviewer and Faculty, ASHA/ASHF Grant Review and Reviewer Training	2019
Editorial Board Member, Journal of Speech, Language, and Hearing Research	2017 – 2019
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
 <i>Service to IEEE</i>	
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"	2011
Track co-Chair: "Human-Robot Interaction and Robot-aided Living for a Healthier Tomorrow", IEEE Engineering in Medicine and Biology Conference 2011, Boston, MA	
Reviewer, IEEE Engineering in Medicine and Biology Conference 2011, Boston, MA	2011

Industry / Government / Consulting Experience:

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 Meredith 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 Prefectural 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 7 th 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