Elaine Kearney

POSTDOCTORAL RESEARCH ASSOCIATE

Dept. of Speech, Language & Hearing Sciences, Boston University

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Speech scientist focused on the sensorimotor control of speech in individuals with and without motor speech disorders. I conduct both basic science and clincial research that leverages my expertise in behavioral, computational modeling, and neuroimaging methods. The long-term aim of my research program is to expand the evidence-based treatment options available to those with communication disorders.

Education

PhD in Speech-Language Pathology
Toronto, Canada

SPEECH PRODUCTION LABORATORY, REHABILITATION SCIENCES INSTITUTE, UNIVERSITY OF TORONTO
January 2013–June 2018

- Thesis: The Speech Movement Disorder and its Rehabilitation in Parkinson's Disease Using Augmented Visual Feedback
- Committee: Drs. Yana Yunusova (Advisor), Luc de Nil, and Luc Tremblay

BSc in Speech and Language Therapy
Cork, Ireland

DEPT. OF SPEECH AND HEARING SCIENCES, UNIVERSITY COLLEGE CORK
September 2007–June 2011

- Thesis: Tongue-Plate Contact During Selected Vowels in Typical and Disordered Articulation
- Advisor: Dr. Alice Lee

Research Employment

Postdoctoral Research Associate
Boston, MA, USA

SPEECH NEUROSCIENCE LABORATORY, DEPT. OF SPEECH, LANGUAGE & HEARING SCIENCE, BOSTON UNIVERSITY
January 2018–Present

- Projects: Neural Modeling and Imaging of Speech; Voice and Speech Sensorimotor Control in Parkinson's Disease
- Advisors: Drs. Frank H. Guenther and Jason A. Tourville

Research Assistant
Toronto, Canada

VOCAL TRACT VISUALIZATION LABORATORY, TORONTO REHABILITATION INSTITUTE
January 2013–December 2017

- Project: Visual Feedback Systems in Speech Rehabilitation
- Advisor: Dr. Yana Yunusova

Research Assistant
Toronto, Canada

SPEECH AND STUTTERING INSTITUTE
June 2012–December 2012

- Project: Motor Speech Treatment Protocol for Developmental Motor Speech Disorders
- Advisor: Dr. Aravind Namasivayam

Research Awards and Honors

Professional Development and Postdoctoral Affairs Travel Award
Boston, MA, USA

BOSTON UNIVERSITY
August 2019

- 500 USD

ASHA's Research Mentoring: Pathways Program
USA

AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION
June 2019

- Travel, accommodation and food costs for duration of workshop

Polatajko-Howell Student Conference Presentation Fund
Toronto, Canada

UNIVERSITY OF TORONTO
June 2017

- 300 CAD

Rehabilitation Sciences Institute Peer Mentorship Award
Toronto, Canada

UNIVERSITY OF TORONTO
May 2017

- 100 CAD

Rehabilitation Sciences Institute Presentation Award
Toronto, Canada

UNIVERSITY OF TORONTO
May 2017

- 300 CAD

Office of Research Trainees Conference Travel Award *Toronto, Canada*
UNIVERSITY HEALTH NETWORK *March 2016*
- 500 CAD

Graduate Scholarship Prize *Toronto, Canada*
TORONTO REHABILITATION INSTITUTE - UNIVERSITY HEALTH NETWORK *November 2015*
- 1000 CAD

School of Graduate Studies Conference Grant *Toronto, Canada*
UNIVERSITY OF TORONTO *November 2014*
- 850 CAD

Speech-Language Pathology Travel Award *Toronto, Canada*
UNIVERSITY OF TORONTO *March 2014*
- 425 CAD

Undergraduate College Scholarship *Cork, Ireland*
UNIVERSITY COLLEGE CORK *May 2010*
- 1000 EUR

Professional Affiliations

American Speech-Language-Hearing Association
NON-CLINICAL MEMBER *October 2018–Present*

Society for the Neurobiology of Language
POSTDOCTORAL MEMBER *April 2018–Present*

National Student Speech Language Hearing Association
MEMBER *November 2014–November 2015*

Irish Association of Speech and Language Therapists
NEW GRADUATE MEMBER *June 2011–December 2013*

Service

Manuscript Reviews
REVIEWER *2018–Present*
- American Journal of Speech-Language Pathology (7)
- Journal of Speech, Language, and Hearing Research (6)
- Neurorehabilitation and Neural Repair (2)
- Journal of Communication Disorders (1)
- Journal of Voice (1)
- Clinical Linguistics & Phonetics (1)

Conference Reviews
REVIEWER *2019–2020*
- International Clinical Phonetics and Linguistics Association Symposium 2020
- Boston Speech Motor Control Symposium 2019

Grant Reviews
REVIEWER *2019–2020*
- LVST Small Student Grant

Conference Organization
ORGANIZING COMMITTEE MEMBER *April 2018–June 2019*
- Boston Speech Motor Control Symposium 2019

Publications

Peer-Reviewed

Contributions of auditory and somatosensory feedback to vocal motor control

Smith, D. J., Stepp, C. E., Guenther, F. H., & Kearney, E.

- https://doi.org/10.1044/2020_JSLHR-19-00296

JSLHR

2020

A simple 3-parameter model for examining adaptation in speech and voice production

Kearney, E., Nieto-Castanon, A., Weerathunge, H. R., Falsini, R., Daliri, A., Abur, D., Ballard, K. J., Chang, S-E., Chao, S-C., Heller Murray, E. S., Scott, T. L., & Guenther, F. H.

- https://doi.org/110.3389/fpsyg.2019.02995

Front. Psychol.

2020

Articulating: The neural mechanisms of speech production

Kearney, E., & Guenther, F. H.

- https://doi.org/10.1080/23273798.2019.1589541

Lang. Cogn. Neurosci.

2019

Towards movement-based outcome measures for apraxia of speech: A systematic review

Bailey, K., Kearney, E., Roberts, E., & Yunusova, Y.

- https://doi.org/10.1080/02687038.2018.1510111

Aphasiology

2019

Electromagnetic articulography (EMA) for real-time feedback application: Computational techniques

Haworth, B., Kearney, E., Faloutsos, P., Baljko, M., & Yunusova, Y.

- https://doi.org/10.1080/21681163.2018.1434423

CMBBE

2019

Augmented visual feedback-aided interventions in motor rehabilitation in Parkinson's disease: A systematic review

Kearney, E., Shellikeri, S., Martino, R., & Yunusova, Y.

- https://doi.org/10.1080/09638288.2017.1419292

Disabil. Rehabil.

2019

Treating speech-movement hypokinesia in Parkinson's disease: Does movement size matter and to what extent?

Kearney, E., Haworth, M. B., Scholl, J., Faloutsos, P., Baljko, M., & Yunusova, Y.

- https://doi.org/10.1044/2018_JSLHR-S-17-0439

JSLHR

2018

Sentence-level movements in Parkinson's disease: Loud, clear, and slow speech

Kearney, E., Giles, R., Haworth, M. B., Faloutsos, P., Baljko, M., & Yunusova, Y.

- https://doi.org/10.1044/2017_JSLHR-S-17-0075

JSLHR

2017

Game-based augmented visual feedback for enlarging speech movements in Parkinson's disease

Yunusova, Y., Kearney, E., Kulkarni, M., Haworth, M. B., Baljko, M., & Faloutsos, P.

- https://doi.org/10.1044/2017_JSLHR-S-16-0233

JSLHR

2017

Outcome measures in developmental speech sound disorders with a motor basis

Kearney, E., Granata, F., Yunusova, Y., van Lieshout, P., Hayden, D., & Namasivayam, A.

- https://doi.org/10.1007/s40474-015-0058-2

Curr. Dev. Disord. Rep.

2015

Motor Speech Treatment Protocol for developmental motor speech disorders

Namasivayam, A., Pukonen, M., Hard, J., Jahnke, R., Kearney, E., Kroll, R., & van Lieshout, P.

- https://doi.org/10.3109/17518423.2013.832431

Dev. Neurorehabil.

2015

Tongue-palate contact during selected vowels in children with speech sound disorders

Lee, A., Gibbon, F. E., Kearney, E., & Murphy, D.

- https://doi.org/10.3109/17549507.2013.862857

IJSLP

2014

Proceedings

Electromagnetic articulography in the development of "serious games" for speech rehabilitation

Haworth, M. B., Kearney, E., Baljko, M., Faloutsos, P., & Yunusova, Y.

Proceedings from PMHA 2014

2014

Presentations

Invited

The speech movement disorder in Parkinson's disease and its rehabilitation using augmented visual feedback (oral presentation)

Boston, MA, USA

KEARNEY, E., HAWORTH, M. B., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2017

- Boston Speech Motor Control Working Group, Boston University

Development of augmented feedback targets for speech rehabilitation in Parkinson's disease (oral presentation)

Cork, Ireland

KEARNEY, E., HAWORTH, M. B., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2015

- Dept. of Speech and Hearing Sciences, University College Cork

Conference

Contributions of auditory and somatosensory feedback to vocal motor control (poster)

Santa Barbara, CA, USA

KEARNEY, E., SMITH, D. J, STEPP, C. E, & GUENTHER, F. H.

2020

- 20th Biennial Conference on Motor Speech

SimpleDIVA: A 3-parameter model for examining adaptation in speech and voice production (poster)

Helsinki, Finland

KEARNEY, E., NIETO-CASTANON, A., DALIRI, A., & GUENTHER, F. H.

2019

- 11th Annual Meeting of the Society for Neurobiology of Language

Game-based speech therapy using visual feedback in Parkinson's disease (poster)

Groningen, Netherlands

KEARNEY, E., HAWORTH, B., SCHOLL, J., GILES, R., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2017

- 7th International Conference on Speech Motor Control

Speech movements and intelligibility in Parkinson's disease (oral presentation)

Newport Beach, CA, USA

KEARNEY, E., SHELLIKERI, S., GILES, R., HAWORTH, M. B., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2016

- 18th Biennial Conference on Motor Speech

Movement-based speech therapy for dysarthria in Parkinson's disease and apraxia of speech (oral presentation)

Newport Beach, CA, USA

YUNUSOVA, Y., KEARNEY, E., HAWORTH, M. B., FALOUTSOS, P., & BALJKO, M.

2016

- 18th Biennial Conference on Motor Speech

Measuring participation in developmental speech sound disorders with a motor basis (poster)

Denver, CO, USA

KEARNEY, E., GRANATA, F., YUNUSOVA, Y., VAN LIESHOUT, P., HAYDEN, D., & NAMASIVAYAM, A.

2015

- American Speech-Language-Hearing Association Convention

Instrumental outcome measures in developmental speech sound disorders with a motor basis (poster)

Orlando, FL, USA

GRANATA, F., KEARNEY, E., YUNUSOVA, Y., VAN LIESHOUT, P., HAYDEN, D., & NAMASIVAYAM, A.

2015

- International Association of Orofacial Myology Convention 2015

Artifact removal techniques for 3D electromagnetic articulography (oral presentation)

Montreal, Canada

MOGHADDAM, A., HAWORTH, B., KEARNEY, E., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2015

- 3rd International Workshop on Biomechanical and Parametric Modeling of Human Anatomy

Articulatory working space in older adults across speaking conditions (oral presentation)

Orlando, FL, USA

KEARNEY, E., HAWORTH, M. B., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2014

- American Speech-Language-Hearing Association Convention

Electromagnetic articulography in the development of serious games for speech rehabilitation (oral presentation)

Vancouver, Canada

HAWORTH, M. B., KEARNEY, E., BALJKO, M., FALOUTSOS, P., YUNUSOVA, Y.

2014

- 2nd International Workshop on Biomechanical and Parametric Modeling of Human Anatomy

Articulatory working space as a kinematic target in augmented feedback applications (poster)

Sarasota, FL, USA

KEARNEY, E., HAWORTH, M. B., FALOUTSOS, P., BALJKO, M., & YUNUSOVA, Y.

2014

- 17th Biennial Conference on Motor Speech

Rehabilitative speech computer game calibration using empirical characterizations of articulatory working space (poster)

Sarasota, FL, USA

Yunusova, Y., Faloutsos, P., & Baljko, M.

2014

- 17th Biennial Conference on Motor Speech

Tongue-palate contact during selected vowels in children with speech sound disorder of unknown origin (poster)

Cork, Ireland

Lee, A., Kearney, E., & Gibbon, F. E.

2012

- International Clinical Phonetics and Linguistics Association Conference 2012

National

Invited

The speech movement disorder and its rehabilitation in Parkinson's disease using augmented visual feedback (oral presentation)

Montreal, Canada

Kearney, E., Haworth, M. B., Faloutsos, P., Baljko, M., & Yunusova, Y.

2017

- Ecole d'Orthophonie et d'Audiologie, Universite de Montreal

Conference

Investigating the Neural Mechanisms of Speech Rate, Clarity, and Emphasis. Boston Speech Motor Control Symposium (poster)

Boston, MA, USA

Kearney, E., Tourville, J.A., Nieto-Castanon, A., & Guenther, F.

2019

- Boston Speech Motor Control Symposium

A 3-parameter model for fitting and interpreting speech sensorimotor adaptation data (oral presentation)

San Francisco, CA, USA

Guenther, F., Kearney, E., Daliri, A., & Nieto-Castanon, A.

2019

- Neural Bases of Speech Production Symposium

Speech movements in apraxia of speech (poster)

Calgary, Canada

Roberts, E., Kearney, E., Bailey, K., Graham, N., Rochon, E., & Yunusova, Y.

2017

- Canadian Stroke Congress

Game-based augmented visual feedback treatment for apraxia of speech after stroke (poster)

Calgary, Canada

Yunusova, Y., Kearney, E., Scholl, J., Janik-Jones, C., Haworth, B., Roberts, E., Faloutsos, P., & Baljko, M.

2017

- Canadian Stroke Congress

Tongue-palate contact during selected vowels in children with speech sound disorder of unknown origin (poster)

Dublin, Ireland

Lee, A., Kearney, E., & Gibbon, F. E.

2011

- Irish Association of Speech and Language Therapists Biennial Conference

Software

SimpleDIVA

https://bit.ly/2XY1n7f

Kearney, E., Nieto-Castanon, A., Falsini, R., Kearney,E. & Weerathunge, H.R.

2019

- An application that allows users to apply a simplified version of the DIVA model to data collected from auditory sensorimotor adaptation experiments

Teaching

CERTIFICATE

Teaching in Higher Education   *Toronto, Canada*
WOODSWORTH COLLEGE, UNIVERSITY OF TORONTO   *April 2016*

EXPERIENCE

Course Instructor   *Boston, MA, USA*
DEPT. OF SPEECH, LANGUAGE & HEARING SCIENCES, BOSTON UNIVERSITY   *September 2019-December 2019*
- Research Methods in Speech-Language Pathology and Audiology, Clinical MSc

Guest Lecturer   *Boston, MA, USA*
DEPT. OF SPEECH, LANGUAGE & HEARING SCIENCES, BOSTON UNIVERSITY   *November 2019*
- SimpleDIVA Software Tutorial, Neural Control of Speech, MSc/PhD

Guest Lecturer   *Boston, MA, USA*
MASSACHUSETTS GENERAL HOSPITAL - INSTITUTE OF HEALTH PROFESSIONS   *July 2019*
- Advancements in Treatment for Dysarthria, Neuromotor Speech Disorders, Clinical MSc

Course Instructor   *Toronto, Canada*
DEPT. OF SPEECH-LANGUAGE PATHOLOGY, UNIVERSITY OF TORONTO   *September 2017-December 2017*
- Principles of Clinical Practice, Clinical MSc

Teaching Assistant/ Guest Lecturer   *Toronto, Canada*
DEPT. OF SPEECH-LANGUAGE PATHOLOGY, UNIVERSITY OF TORONTO   *September 2013-June 2017*
- Motor Speech Disorders, Clinical MSc
- Articulation and Related Disorders, Clinical MSc
- Research in Speech-Language Pathology, MSc
- Linguistics in the Workforce: Clinical Practice and Research, BSc
- Augmentative and Alternative Communication, Clinical MSc
- Applied Audiology, Clinical MSc
- Neurocognitive Communication, Clinical MSc
- Advanced Principles of Clinical Practice, Clinical MSc
- Adult Language Disrders, BSc

Technical Skills

Speech Acoustics
PRAAT, AUDACITY, TF32

Speech Kinematics
SPEECH MOVEMENT ANALYSIS FOR SPEECH AND HEARING RESEARCH (SMASH)

Auditory Feedback Perturbation
AUDAPTER

Signal Processing and Analysis
MATLAB

Neuroimaging Analysis
STATISTICAL PARAMETRIC MAPPING (SPM), FREESURFER, FUNCTIONAL CONNECTIVITY TOOLBOX (CONN)

Statistical Analysis
R, MATLAB

Version Control
GITHUB

Design Software
AFFINITY DESIGNER, ADOBE INDESIGN

Bibliographic Management
ENDNOTE, ZOTERO