

# Elaine Kearney

SPEECH SCIENTIST

Brisbane, Australia

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*Speech scientist focused on the sensorimotor control of speech production in individuals with and without motor speech disorders. I conduct both basic science and clinical 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

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### 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

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### Postdoctoral Research Fellow

Brisbane, Australia

LANGUAGE, COGNITION AND BRAIN SCIENCES LABORATORY, QUEENSLAND UNIVERSITY OF TECHNOLOGY

April 2022–present

- Projects: A Prospective Study of Language Impairment and Recovery Following Surgery for Brain Tumours; A More Sound Approach to the Neurobiology of Language
- Advisor: Drs. Greig de Zubicaray and Katie L. McMahon

### Consultant Speech Scientist

Brisbane, Australia

INDEPENDENT CONTRACTOR

April 2022–present

### Postdoctoral Research Associate

Boston, MA, USA

SPEECH NEUROSCIENCE LABORATORY, BOSTON UNIVERSITY

January 2018–January 2022

- 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

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### ASHA Research Mentoring Network: Lessons for Success

USA

AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

April 2021

- Attendance at 3-day virtual workshop

### Professional Development and Postdoctoral Affairs Travel Award

Boston, MA, USA

BOSTON UNIVERSITY

August 2019

- 500 USD

### ASHA Research Mentoring Network: 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**

UNIVERSITY OF TORONTO

- 300 CAD

Toronto, Canada

June 2017

### **Rehabilitation Sciences Institute Peer Mentorship Award**

UNIVERSITY OF TORONTO

- 100 CAD

Toronto, Canada

May 2017

### **Rehabilitation Sciences Institute Presentation Award**

UNIVERSITY OF TORONTO

- 300 CAD

Toronto, Canada

May 2017

### **Office of Research Trainees Conference Travel Award**

UNIVERSITY HEALTH NETWORK

- 500 CAD

Toronto, Canada

March 2016

### **Graduate Scholarship Prize**

TORONTO REHABILITATION INSTITUTE - UNIVERSITY HEALTH NETWORK

- 1000 CAD

Toronto, Canada

November 2015

### **School of Graduate Studies Conference Grant**

UNIVERSITY OF TORONTO

- 850 CAD

Toronto, Canada

November 2014

### **Speech-Language Pathology Travel Award**

UNIVERSITY OF TORONTO

- 425 CAD

Toronto, Canada

March 2014

### **Undergraduate College Scholarship**

UNIVERSITY COLLEGE CORK

- 1000 EUR

Cork, Ireland

May 2010

## **Professional Affiliations**

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### **American Speech-Language-Hearing Association Special Interest Group 19: Speech Science**

MEMBER

November 2021–Present

### **International Myositis Assessment & Clinical Studies Group (IMACS)**

MEMBER

March 2021–Present

### **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**

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### **Manuscript Reviews**

HANDLING EDITOR

2022–Present

- Journal of Speech, Language, and Hearing Research (1)
- American Journal of Speech-Language Pathology (1)

## REVIEWER

2018–Present

- Journal of Speech, Language, and Hearing Research (10)
- American Journal of Speech-Language Pathology (7)
- Neurorehabilitation and Neural Repair (2)
- Journal of the Acoustical Society of America (1)
- Cerebral Cortex (2)
- Journal of Communication Disorders (1)
- Journal of Voice (1)
- Clinical Linguistics & Phonetics (1)
- International Journal of Speech-Language Pathology (2)
- Infant and Child Development (1)

## Conference Reviews

### REVIEWER

2019–Present

- International Congress of Phonetic Sciences 2023
- Conference on Motor Speech 2022
- 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

2018–Present

- American Speech-Language-Hearing Association Convention 2023 (Motor Speech Disorders Across the Lifespan Topic)
- American Speech-Language-Hearing Association Convention 2022 (Motor Speech Disorders and Other Speech Sound Disorders in Adults Topic)
- Boston Speech Motor Control Symposium 2019

## CSDisseminate

<https://CSDisseminate.com>

### CO-FOUNDER, COLLABORATOR

July 2020–Present

- A grassroots initiative aimed at promoting the culture of self-archiving legal versions of research manuscripts in the field of communication sciences and disorders

## OpenCSD

<https://www.open-csd.com/>

### JOURNAL CLUB LEADER

September 2022–Present

- A grassroots initiative aspiring to educate others and foster the use of open science practices within the field of communication sciences and disorders

# Publications

Available for download at <https://elaine-kearney.com/publication/>

## PEER-REVIEWED

### Paucity of bulbar function measures in IBM trials: A commentary on Roy et al Current status of clinical outcome measures in inclusion body myositis: a systematized review

*Clin. Exp. Rheumatol.*

GARAND, K. L., MALANDRAKI, G. A., STIPANCIC, K. L., KEARNEY, E., ROY, B., & ALFANO, L. N.

2023

- DOI: 10.55563/clinexprheumatol/x66elf

### Open science practices in communication sciences and disorders: A survey

*JSLHR*

EL AMIN, M., BORDERS, J. C., LONG, H., KELLER, M. A., & KEARNEY, E.

2022

- DOI: 10.1044/2022\_JSLHR-22-00062

### Quantitatively characterizing reflexive responses to pitch perturbations

*Front. Hum. Neurosci.*

KEARNEY, E., NIETO-CASTANON, A., FALSINI, R., DALIRI, A., HELLER MURRAY E. S., SMITH, D. J., & GUENTHER, F. H.

2022

- DOI: 10.3389/fnhum.2022.929687

### Brain lesions associated with communication-related quality of life following surgical removal of primary left-hemisphere tumours

*Aphasiology*

KEARNEY, E., BROWNSSETT, S. L. E., COPLAND, D. A., DRUMMOND, K., JEFFREE, R. L., OLSON, S., MURTON, E., ONG, B.,

2022

ROBINSON, G. A., TOLKACHEVA, V., MCMAHON, K. L., & DE ZUBICARAYM G. I.

- DOI: 10.1080/02687038.2022.2145844

### On the roles of form systematicity and sensorimotor effects in language processing

*J. Exp. Psychol. Learn. Mem. Cogn.*

DE ZUBICARAY, G., ARCIULI, J., KEARNEY, E., GUENTHER, F. H., & MCMAHON, K. L.

2022

- DOI: 10.1037/xlm0001201



## 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

## EDITORIALS

## Enhancing accessibility of communication sciences and disorders research: Open access and self-archiving

GAETA, L., PFEIFFER, D., & KEARNEY, E.

*Audiology Today*

2022

## Presentations

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### INTERNATIONAL

#### Invited

### DIVA explained: Applying models of speech production to clinical populations (oral presentation)

KEARNEY, E., MILLER, H., CHANG, S-E., & GUENTHER, F. H.

- American Speech-Language-Hearing Association Convention

*New Orleans, LA, USA*

*November 2022*

### Estimating feedback control during voice production: Experimental and modelling findings (oral presentation)

KEARNEY, E.

- Connect Laboratory Research Seminar

*Bloorview Research Institute,  
Toronto, Canada*

*June 2022*

### Sensorimotor control of speech and voice production: Insights from experimental and modeling studies (oral presentation)

KEARNEY, E.

- Centre for Language Sciences Speaker Series 2021

*Macquarie University, Sydney,  
Australia*

*April 2021*

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

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

- Boston Speech Motor Control Working Group, Boston University

*Boston, MA, USA*

*September 2017*

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

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

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

*Cork, Ireland*

*March 2015*

#### Conference

### Cortical responses to jaw and larynx perturbations during speech production in Parkinson’s disease: A preliminary fMRI analysis (poster)

MANES, J. L., TOURVILLE, J. A., KEARNEY, E., NIETO-CASTANON, A., HOLLAND, B. G., KIM, J. S., & GUENTHER, F. H.

- SFN Neuroscience 2022

*San Diego, CA, USA*

*November 2022*

### Brain lesions associated with communication-related quality of life following surgical removal of primary left-hemisphere tumors (poster)

KEARNEY, E., BROWNSSETT, S. L. E., COPLAND, D. A., DRUMMOND, K. J., JEFFREE, R. L., OLSON, S., MURTON, E., ONG, B.,

ROBINSON, G. A., TOLKACHEVA, V., MCMAHON, K. L., & DE ZUBICARAY, G. I.

- 14th Annual Meeting of the Society for Neurobiology of Language

*Philadelphia, PA, USA*

*October 2022*

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

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

- 20th Biennial Conference on Motor Speech

*Santa Barbara, CA, USA*

*February 2020*

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

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

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

*Helsinki, Finland*

*August 2019*

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

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

- 7th International Conference on Speech Motor Control

Groningen, Netherlands

July 2017

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

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

- 18th Biennial Conference on Motor Speech

Newport Beach, CA, USA

March 2016

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

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

- 18th Biennial Conference on Motor Speech

Newport Beach, CA, USA

March 2016

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

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

- American Speech-Language-Hearing Association Convention

Denver, CO, USA

November 2015

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

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

- International Association of Orofacial Myology Convention 2015

Orlando, FL, USA

October 2015

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

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

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

Montreal, Canada

August 2015

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

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

- American Speech-Language-Hearing Association Convention

Orlando, FL, USA

November 2014

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

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

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

Vancouver, Canada

August 2014

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

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

- 17th Biennial Conference on Motor Speech

Sarasota, FL, USA

February 2014

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

YUNUSOVA, Y., FALOUTSOS, P., & BALJKO, M.

- 17th Biennial Conference on Motor Speech

Sarasota, FL, USA

February 2014

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

LEE, A., KEARNEY, E., & GIBBON, F. E.

- International Clinical Phonetics and Linguistics Association Conference

Cork, Ireland

June 2012

## **NATIONAL**

### **Invited**

## **Estimating feedback control during voice production: Experimental and modelling findings (oral presentation)**

KEARNEY, E.

- School of Psychology and Counselling Research Seminar

Queensland University of  
Technology, Brisbane, Australia

September 2022

## **Estimating feedback control during voice production: Experimental and modelling findings (oral presentation)**

KEARNEY, E.

- Discipline of Speech Pathology Research Seminar

University of Sydney, Sydney,  
Australia

June 2022

## Sensorimotor control of speech and voice production: Insights from experimental and modeling studies (oral presentation)

KEARNEY, E.

- Speech and Hearing Science Research Colloquium

Arizona State University, AZ, USA

March 2021

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

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

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

Montreal, Canada

May 2017

## Conference

### Brain lesions associated with communication-related quality of life following surgical removal of primary left-hemisphere tumors (poster)

KEARNEY, E., BROWNSSETT, S. L. E., COPLAND, D. A., DRUMMOND, K. J., JEFFREE, R. L., OLSON, S., MURTON, E., ONG, B.,

ROBINSON, G. A., TOLKACHEVA, V., MCMAHON, K. L., & DE ZUBICARAY, G. I.

- Australasian Brain & Psychological Sciences Meeting

Brisbane, Australia

July 2022

### Brain lesions associated with communication-related quality of life following surgical removal of primary left-hemisphere tumours (poster)

KEARNEY, E., BROWNSSETT, S. L. E., COPLAND, D. A., DRUMMOND, K. J., JEFFREE, R. L., OLSON, S., MURTON, E., ONG, B.,

ROBINSON, G. A., TOLKACHEVA, V., MCMAHON, K. L., & DE ZUBICARAY, G. I.

- Aphasiology Symposium of Australia

Melbourne, Australia

November 2022

### Open science practices in communication sciences and disorders (oral presentation)

EL AMIN, M., LONG, H. L., BORDERS, J. C., KELLER, M. A., & KEARNEY, E.

- American Speech-Language-Hearing Association Convention

Washington, DC, USA

November 2021

### Converging neural representations of the speech subsystems: A meta-analysis (poster)

KEARNEY, E., JIANG, L., & GUENTHER, F. H.

- Boston Speech Motor Control Symposium

Virtual

June 2021

### Quantitative modeling of reflexive responses to auditory perturbations (oral presentation)

GUENTHER, F., KEARNEY, E., HELLER-MURRAY, E. S., & NIETO-CASTANON, A.

- Neural Bases of Speech Production Symposium

Virtual

May 2021

### Investigating the neural mechanisms of speech rate, clarity, and emphasis (poster)

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

- Boston Speech Motor Control Symposium

Boston, MA, USA

June 2019

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

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

- Neural Bases of Speech Production Symposium

San Francisco, CA, USA

March 2019

### Speech movements in apraxia of speech (poster)

ROBERTS, E., KEARNEY, E., BAILEY, K., GRAHAM, N., ROCHON, E., & YUNUSOVA, Y.

- Canadian Stroke Congress

Calgary, Canada

September 2017

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

YUNUSOVA, Y., KEARNEY, E., SCHOLL, J., JANIK-JONES, C., HAWORTH, B., ROBERTS, E., FALOUTSOS, P., & BALJKO, M.

- Canadian Stroke Congress

Calgary, Canada

September 2017

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

LEE, A., KEARNEY, E., & GIBBON, F. E.

- Irish Association of Speech and Language Therapists Biennial Conference

Dublin, Ireland

November 2011

## WORKSHOPS

### Improve research dissemination through access: Self-archiving 101 (oral presentation)

SPRATFORD, M., LONG, H. L., HAROLD, M.P., & KEARNEY, E.

- CSDisseminate

Virtual

January 2021

## Evidence-based practice: Critical appraisal and quality of evidence in clinical research (oral presentation)

Toronto, Canada

NAMASIVAYAM, A. K., KEARNEY, E., SANJEEVAN, T., WONG, W.Y.S., GRANATA, F., & RAMPERSAUD, D.

June 2016

- The Hanen Centre

## Software

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### SimpleDIVA

<https://bit.ly/2XY1n7f>

GUENTHER, F.H., 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

## Research Mentoring

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### Alexander Acosta

Boston, MA, USA

DEPT. OF SPEECH, LANGUAGE AND HEARING SCIENCES, BOSTON UNIVERSITY

2021-Present

- BA Student

### Yash Shroff

Boston, MA, USA

DEPT. OF SPEECH, LANGUAGE AND HEARING SCIENCES, BOSTON UNIVERSITY

2020-2021

- BSc Student (successfully acquired funding through the Undergraduate Research Opportunities Program)

### Lauren Jiang

Boston, MA, USA

DEPT. OF SPEECH, LANGUAGE AND HEARING SCIENCES, BOSTON UNIVERSITY

2020-2021

- BSc Student (successfully acquired funding through the Undergraduate Research Opportunities Program)

### Dante Smith

Boston, MA, USA

DEPT. OF SPEECH, LANGUAGE AND HEARING SCIENCES, BOSTON UNIVERSITY

2018-2019

- PhD Student

### Kristen Bailey

Toronto, Canada

DEPT. OF SPEECH-LANGUAGE PATHOLOGY, UNIVERSITY OF TORONTO

2016-2018

- MSc Student

### Renuka Giles

Toronto, Canada

DEPT. OF SPEECH-LANGUAGE PATHOLOGY, UNIVERSITY OF TORONTO

2015-2016

- BSc Student

## Teaching

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### CERTIFICATE

#### Teaching in Higher Education

Toronto, Canada

WOODSWORTH COLLEGE, UNIVERSITY OF TORONTO

April 2016

### EXPERIENCE

#### Course Instructor

Boston, MA, USA

DEPT. OF SPEECH, LANGUAGE AND 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 AND 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

DEPT. OF SPEECH-LANGUAGE PATHOLOGY, UNIVERSITY OF TORONTO

Toronto, Canada

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 Disorders, BSc

## Technical Skills

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### 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 and Video Software

AFFINITY DESIGNER, ADOBE SUITE (INDESIGN, ILLUSTRATOR, PHOTOSHOP, PREMIER PRO), DRAW.IO

### Bibliographic Management

ENDNOTE, ZOTERO

### Website Builders

BLOGDOWN, WIX