

# Thea Knowles

Assistant Professor

University at Buffalo, Buffalo, NY

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## Current employment

### University at Buffalo

Assistant Professor

Buffalo, NY

2019 - present

## Education

### Western University

MClSc-SLP/PhD

London, ON

2019

### McGill University

BA (Hon)

Montreal, QC

2012

## Funding

### Research

#### Ontario Graduate Scholarship

Value: \$15,000 CAD

2018

#### Ontario Graduate Scholarship

Value: \$15,000 CAD

2017

#### Western Graduate Research Scholarship

Value: \$19,000 CAD

2014

### Clinical

#### Parkinson Voice Project LOUD Crowd Grant

2020

## Publications

- Knowles, T., Adams, S. G., Page, A., Cushnie-Sparrow, D., & Jog, M. (2020). A comparison of speech amplification and personal communication devices for hypophonia. *Journal of Speech, Language, and Hearing Research*, 63(8), 2695–2712.
- Adams, S., Kumar, N., Rizek, P., Hong, A., Zhang, J., Senthinathan, A., Mancinelli, C., Knowles, T., & Jog, M. (2020). Efficacy and acceptance of a Lombard-response device for hypophonia in Parkinson's disease. *Canadian Journal of Neurological Sciences*, 47(5), 634–641.
- Abeyesekera, A., Adams, S., Mancinelli, C., Knowles, T., Gilmore, G., Delrobaei, M., & Jog, M. (2019). Effects of deep brain stimulation of the subthalamic nucleus settings on voice quality, intensity, and prosody in parkinson's disease: Preliminary evidence for speech optimization. *Canadian Journal of Neurological Sciences / Journal Canadien Des Sciences Neurologiques*, 46(3), 1–8. <https://doi.org/10.1017/cjn.2019.16>
- Sonderegger, M., Stuart-Smith, J., Knowles, T., Macdonald, R., & Rathcke, T. (2019). Structured heterogeneity in Scottish stops over the 20th Century. *Language*.
- Knowles, T., Adams, S., Abeyesekera, A., Mancinelli, C., Gilmore, G., & Jog, M. (2018). Deep brain stimulation of the subthalamic nucleus parameter optimization for vowel acoustics and speech intelligibility in Parkinson's disease. *Journal of Speech, Language, and Hearing Research*, 61(3), 510–524.
- Knowles, T., Clayards, M., & Sonderegger, M. (2018). Examining factors influencing the viability of automatic acoustic analysis of child speech. *Journal of Speech, Language, and Hearing Research*, 61(10), 2487–2501. [https://doi.org/10.1044/2018\\_JSLHR-S-17-0275](https://doi.org/10.1044/2018_JSLHR-S-17-0275)

7. Cushnie-Sparrow, D., Adams, S., Knowles, T., Leszcz, T. M., & Jog, M. (2016). Effects of multi-talker noise on the acoustics of voiceless stop consonants in Parkinson's disease. *Western Papers in Linguistics/Cahiers Linguistiques de Western*, 3(1).
8. Clayards, M., & Knowles, T. (2015). Prominence enhances voicelessness and not place distinction in English voiceless sibilants. *Proceedings of the 18th International Congress of Phonetic Sciences*.
9. Knowles, T., Clayards, M., Sonderegger, M., Wagner, M., Nadig, A., & Onishi, K. H. (2015). Automatic forced alignment on child speech: Directions for improvement. *Proceedings of Meetings on Acoustics*, 25, 060001. <https://doi.org/10.1121/2.0000125>
10. Keshet, J., Sonderegger, M., & Knowles, T. (2014). *AutoVOT: A tool for automatic measurement of voice onset time using discriminative structured prediction [Computer program]. Version 0.93*. <https://github.com/mlml/autovot>
11. Little, C., & Knowles, T. (2012). Didja know? A comparative study of affrication across word boundaries in Canadian and American English. *Strathy Student Working Papers on Canadian English*.
12. Cheng, J., & Knowles, T. (2012). Mandarin VP-Shell: Not as hard as you think. *McGill Cellar Door*, 1, 4–20.

## Presentations

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### **Speech acoustic adjustments along a speech rate continuum in Parkinson's disease**

Buffalo, NY

Rehabilitation Science Seminar. University at Buffalo

3/2020

### **VOT voicing distinction is robust along a speech rate continuum in dysarthria**

Laboratory Phonology

7/2020

- Virtual international poster presentation

### **Speech amplification clinic: Speech-language pathology in-service**

London, ON

H.A. Leeper Speech and Hearing Clinic. Western University

43466

### **Louder but not clearer: Exploring underpinnings of speech intelligibility in dysarthria through acoustic, clinical, and technological lenses**

Minneapolis, MN

Job talk presented at the University of Minnesota Twin Cities

43466

### **Louder but not clearer: Exploring underpinnings of speech intelligibility in dysarthria through acoustic, clinical, and technological lenses**

Buffalo, NY

Job talk presented at the University at Buffalo

43405

### **A comparison of speech amplification and personal communication and personal communication devices for individuals with Parkinson's disease**

Buffalo, NY

Communicative Disorders and Sciences Research Colloquium, University at Buffalo

43191

### **Speech intelligibility along a modified speech rate continuum in Parkinson's disease**

International Clinical Linguistics and Phonetics Association

postponed to 9/2021

- International poster presentation

### **Acoustic changes along a modified speech rate continuum in Parkinson's disease**

Santa Barbara, CA

Motor Speech Conference

43862

- international poster presentation

### **Evaluating the efficacy of speech amplification and personal communication devices in Parkinson's disease**

Boston, MA

American Speech-Language and Hearing Association (ASHA)

43405

- International poster presentation

### **A comparison of voice amplification devices in Parkinson's disease**

Baltimore, MD

American Speech-Language and Hearing Association (ASHA) Connect Conference

43282

- International poster presentation

### **A comparison of voice amplification devices in Parkinson's disease**

Edmonton, AB

Speech-Language Pathology and Audiology Canada (SAC) Conference

43221

- National Poster Presentation

<b>Deep brain stimulation parameter optimization for rate of speech in Parkinson's disease</b> American Speech-Language and Hearing Association (ASHA) Convention • International poster presentation, presented by first author	Philadelphia, PA 42675
<b>Deep brain stimulation parameter optimization for speech intelligibility and vowel acoustics in Parkinson's disease</b> International Clinical Phonetics and Linguistics Association Conference • International oral presentation	Halifax, NS 42522
<b>Deep brain stimulation and speech in Parkinson's disease: Effects of stimulator settings and electrode contact positions</b> Southern Ontario Neuroscience Association • Provincial poster presentation, presented by first author	Waterloo, ON 42491
<b>Deep brain stimulation parameter optimization for speech intelligibility and speech acoustics in Parkinson's disease</b> Motor Speech Conference • International poster presentation	Newport Beach, CA 42430
<b>Deep brain stimulation parameter optimization for voice quality, speech intensity and prosody of speech in Parkinson's disease</b> Motor Speech Conference • International poster presentation, presented by first author	Newport Beach, CA 42430
<b>Automatic forced alignment on child speech: Directions for improvement</b> Meeting of the Acoustical Society of America • International poster presentation	Jacksonville, FL 42309
<b>Stability and change in Scottish stops: A real-time study of three acoustic cues in Glaswegian vernacular</b> New Ways of Analyzing Variation 44 • International oral presentation, presented by first author	Toronto, ON 42278
<b>Prominence enhances voicelessness and not place distinction in English voiceless sibilants</b> 18th International Congress of Phonetic Sciences • International oral presentation, presented by first author	Glasgow, Scotland 42217
<b>The private life of stops: VOT in a real-time corpus of spontaneous Glaswegian</b> 14th Conference on Laboratory Phonology • International oral presentation, presented by first author	Tokyo, Japan 41821
<b>Sibilants, prominence, contrast and breathy voice</b> Phonetic Building Blocks of Speech, University of Victoria • International poster presentation, presented by first author	Victoria, BC 41883
<b>Prosodic strengthening and sibilants</b> Linguistic Institute Conference on Universality and Variability in segment-prosody interactions • International oral presentation, presented by first author	Ann Arbor, MI 41426
<b>Syntactic effects on compensation for assimilation</b> Architectures and Mechanisms for Language Processing • International oral presentation, presented by first author	Riva del Garda, Italy 41153
<b>Affrication in North American English Dialects</b> Changed and Variation in Canada 7, University of Toronto • National oral presentation	Toronto, ON 41030
<b>Affrication in North American English Dialects</b> 2nd Annual Hunter Undergraduate Linguistics and Language Study, Hunter College • International oral presentation	New York, NY 41030
<b>Affrication in North American English Dialects</b> International Linguistic Assoc. 58th Annual Conference, Kingsborough Community College • International oral presentation	Brooklyn, NY 41000

<b>Affrication in North American English Dialects</b> 10th Annual Harvard Undergraduate Linguistics Colloquium, Harvard University • International oral presentation	Cambridge, MA 41000
<b>Gender and Lexical Variation: Coffee Tasting Descriptors</b> McGill Canadian Conference for Linguistics Undergraduates • National oral presentation	Montreal, QC 40603
<b>Gender and Lexical Variation: Coffee Tasting Descriptors</b> 9th Annual Harvard Undergraduate Linguistics Colloquium, Harvard University • International oral presentation	Cambridge, MA
<b>Evaluating the efficacy of voice amplification and personal communication devices in Parkinson's disease</b> Speech and Language Seminar, Health and Rehabilitation Sciences, Western University • Local oral presentation	London, ON 43374
<b>A comparison of voice amplification devices in Parkinson's disease</b> 5th Annual Movement Disorders Research Retreat • Local oral presentation	London, ON 43252
<b>A comparison of voice amplification devices in Parkinson's disease</b> Health and Rehabilitation Graduate Research Conference, Western University • Local oral presentation	London, ON 43132
<b>The effect of rate manipulation on acoustic distinctiveness and intelligibility in dysarthria: Prospectus</b> Speech and Language Seminar, Health and Rehabilitation Sciences, Western University • Local oral presentation	London, ON 43009
<b>The effect of rate manipulation on acoustic distinctiveness and intelligibility in dysarthria: Prospectus</b> 4th Annual Movement Disorders Research Retreat • Local oral presentation	London, ON 42887
<b>Deep brain stimulation parameter optimization: Vowel acoustics in Parkinson's disease</b> Health and Rehabilitation Graduate Research Conference, Western University • Local oral presentation	London, ON 42767
<b>Effects of multitalker noise on the acoustics of voiceless stop consonants in Parkinson's disease</b> Western Interdisciplinary Student Symposium on Language Research • Local oral presentation, presented by first author	London, ON 42430
<b>Acoustic correlates of noise-related speech intelligibility deficits in Parkinson's disease</b> Health and Rehabilitation Graduate Research Conference, Western University • Local oral presentation	London, ON 42401
<b>Deep brain stimulation and speech</b> 3rd Annual Movement Disorders Research Retreat • Local oral presentation	Toronto, ON 42522
<b>Deep brain stimulation and speech</b> 2nd Annual Movement Disorders Research Retreat • Local oral presentation	London, ON 42156
<b>Effect of deep brain stimulation parameters on speech intelligibility and speech acoustics in Parkinson's disease</b> Health and Rehabilitation Graduate Research Conference, Western University • Local poster presentation	London, ON 42036
<b>Effect of deep brain stimulation parameters on speech intelligibility and speech acoustics in Parkinson's disease</b> Faculty of Health Sciences Research Day, Western University • Local poster presentation	London, ON 42064

## Effect of different deep brain stimulation parameters on voice quality, speech intensity, and prosody in Parkinson's Disease

Health and Rehabilitation Graduate Research Conference, Western University

London, ON

42036

- Local poster presentation, presented by first author

## Deep brain stimulation parameter optimization for rate of speech in Parkinson's disease

Health and Rehabilitation Graduate Research Conference, Western University

London, ON

42036

- Local poster presentation, presented by first author

## A case study of childhood L2 learning of phonological contrasts

McGill School of Communication Sciences and Disorders 50th Anniversary Open House, McGill University

Montreal, QC

41579

- Local poster presentation, presented by first author

# Experience

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## Research

### Research Assistant

Speech Movement Disorders Lab, Western University

London, ON

11/2014 - 08/2019

- Assist with study design, ethics submission, data collection related to a comparison of assistive speech devices for individuals with Parkinson's disease

### Lab Coordinator/Research Assistant

Language and Cognition Lab, Western University

London, ON

41913 - 42887

- Assist with study design, ethics, proposals, recruitment, data collection/analysis related to language comprehension in Parkinson's disease. Manage research assistants, coordinate meetings, ensure project deadlines are met

### Project Manager: Tools for Looking at Variability in Speech

McGill University

Montreal, QC

41487 - 41791

- Multidisciplinary collaboration with Communication Sciences & Disorders, Linguistics, & Psychology investigating viability of automated analysis with large scale variable speaker populations. Trained & managed 12+ research assistants in speech analysis

### Lab Manager: Speech Learning Lab

Linguistics Department, McGill University

Montreal, QC

41487 - 41791

- Trained and managed research assistants in acoustic analysis. Provided training materials and conducted tutorial on Praat scripting

### Lab Manager: Montreal Language Modeling Lab

Linguistics Department, McGill University

Montreal, QC

41426 - 41791

- Developed automated scripts for speech analysis, performed data collection and acoustic analysis. Trained and managed research assistants and coordinated meetings

### Research Assistant: CHILDES PhonBank Project

Linguistics Department, McGill University

Montreal, QC

41153 - 41699

- Edited and maintained corpus of child phonological data. Provided detailed feedback for ongoing development of PhonBank software

### Research Assistant: McGill Prosody Lab

Linguistics Department, McGill University

Montreal, QC

41061 - 41791

- Performed data collection for a variety of speech production and perception experiments. Assisted in data analysis using MatLab and Praat software

### Research Assistant: Speech Learning Lab

Linguistics Department, McGill University

Montreal, QC

40848 - 41791

- Assisted in speech perception and production experimental design. Conducted acoustic and statistical analysis

## Clinical

### Speech-language pathologist (Clinical Fellowship)

University at Buffalo, Buffalo, NY

UB Speech, Language and  
Hearing Clinic

11/2019 - present

- Lead LOUD Crowd therapy sessions for people with Parkinson's disease.

### **Student Clinician: Hospital**

Grand River Hospital

- Provided swallowing and communication assessments on a stroke unit

*Grand River Hospital,  
Kitchener, ON  
43647 - 43678*

### **Student Clinician: Speech Amplification Clinic**

H.A. Leeper Speech and Hearing Clinic. Western University

- Developed policies and procedures for and led assessments of individuals with hypophonia seeking a speech amplification device. Coordinated meetings with speech-language pathologists, audiologists, neurologists and clinic staff to ensure timely prescription of appropriate devices

*H.A. Leeper Speech and  
Hearing Clinic, London, ON  
43344 - 43617*

### **Student Clinician: Schoolboard**

Thames Valley District Schoolboard

- Conducted assessment and intervention for school-aged children

*Thames Valley District  
Schoolboard, London, ON  
43221 - 43252*

### **Student Clinician: Fluency disorders**

Camp ShoutOut

- Provided individual and group intervention to children with fluency disorders

*Camp ShoutOut, Holton, MI,  
USA  
42948 - NA*

### **Student Clinician: Acquired neurogenic language disorders**

H.A. Leeper Speech and Hearing Clinic. Western University

- Conducted assessment and intervention for adults with aphasia. Provided individual and group therapy

*H.A. Leeper Speech and  
Hearing Clinic, London, ON  
42125 - 42186*

### **Student Clinician: Voice Disorders**

H.A. Leeper Speech and Hearing Clinic. Western University

- Delivered LSVT-LOUD to client with Parkinson's disease

*H.A. Leeper Speech and  
Hearing Clinic, London, ON  
42125 - 42156*

### **Student Clinician: TykeTalk**

H.A. Leeper Speech and Hearing Clinic. Western University

- Conducted assessment and intervention for young children with suspected speech and/or language difficulties. Assisted in providing Hanen Target Word Intervention

*H.A. Leeper Speech and  
Hearing Clinic, London, ON  
42005 - 42095*

## **Professional development**

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### **Pathways Program Attendee**

American Speech-Language-Hearing Association

- Mentorship program for early career researchers in communication sciences and disorders; "It is intended as an initial step to enhance the training, retention, and funding success of clinical scientists in CSD, with the ultimate goal of advancing the evidence base of the discipline."

*Virtual*

*06/2020 - NA*

### **New Faculty Academy Attendee (Scholarly Writing)**

University at Buffalo

- Weekly workshops for new faculty to improve elements of their scholarly research

*Buffalo, NY*

*Fall 2019 - NA*

### **Pin Pals Volunteer**

Autism Ontario

- Weekly one-on-one bowling outings with children with autism spectrum disorder

*London, ON*

*42401 - 42430*

### **Operation Smile Volunteer**

Western University

- Assisted in fundraising for medical charity providing surgical training for doctors treating children born with cleft lip/palate in underfunded international locations

*London, ON*

*42248 - 42522*

### **IAL Voice Institute Attendee**

International Association of Laryngectomees

- Passed IAL examination which confirmed acquisition of basic and intermediate levels of knowledge in postlaryngectomy rehabilitation

*Baltimore, MD*

*42156 - NA*

## Aphasia Retreat Day Volunteer

Western University

London, ON

42125 - NA

- Volunteered as ``communication ramp" for adults with aphasia during full day retreat. Facilitated communication using SCAA strategies during games and activities

## Speech-Language Pathology Assistant

Speech Therapy Montreal

Montreal, QC

41275 - 41821

- Assisted with early intervention language screenings. Performed inventory of therapy materials, created client database

## Software Carpentry Bootcamp Attendee

McGill University

Montreal, QC

41275 - NA

- Professional development related to programming skill enhancement with command line tools, GitHub, and Python

## Professional affiliations

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American Speech-Language-Hearing Association

2019 - present

- Member

ASHA Special Interest Groups 2, 19

2016 - present

- Member

Academy of Neurologic Communication Disorders and Sciences

2018 - 2019

- Member

Movement Disorders Society

2016 - 2019

- Member

American National Student Speech-Language-Hearing Association

2016 - 2019

- Student Member

Ontario Association of speech-Language Pathologists and Audiologists

2014 - 2019

- Student Member