# THEA KNOWLES

Buffalo, NY theaknow@buffalo.edu

Last updated: August 16, 2019

# **EMPLOYMENT**

Assistant Professor (tenure system)	2019 - Present
Communicative Disorders & Sciences	
University at Buffalo	
Buffalo, NY	
EDUCATION	
Western University, London, ON	2014 - 2019
MClSc/PhD Graduate (to be conferred October 2019)	
Health & Rehabilitation Sciences (Speech & Language Sciences)	
Communication Sciences & Disorders (Speech-Language Pathology)	
McGill University, Montréal, QC	2008 - 2012
B.A. Honours, Linguistics	
First Class Honours, Distinction	
HONOURS & AWARDS	
Graduate Student Conference Travel Subsidy (Summer)	2018
Western University Society of Graduate Students	
· Value: \$500.00	
Graduate Student Conference Travel Award	2018
Western University Faculty of Health Sciences	_010
· Value: \$250.00	
Graduate Student Conference Travel Subsidy (Spring)	2018
Western University Society of Graduate Students	
· Value: \$300.00	
Graduate Student Teaching Award Nominee (not awarded)	2018
Western University	
Ontario Graduate Scholarship	2018-2019
· Value: \$15,000	
value. \$10,000	
Ontario Graduate Scholarship	2017-2018
· Value: \$15,000	
Graduate Student Research Program Award	2017-2018
Parkinson Society Southwestern Ontario	2011-2010

· Value: \$20,000

Vanier Scholarship Nominee (not awarded) Nominated by Western University Faculty of Health Sciences	2016
Western University "3 Minute Thesis" First Place Winner Western University	2016
Value: \$1,000	
Harmonize for Speech Graduate Student Award  Harmonize for Speech Ontario	2016
Value: \$750	
Graduate Student Conference Travel Subsidy (Spring) Western University Society of Graduate Students	2016
Value: \$500.00	
Graduate Student Conference Travel Award Western University Health & Rehabilitation Sciences	2016
Value: \$400.00	
Graduate Student Conference Travel Award Western University Faculty of Health Sciences	2016
Value: \$300.00	
Student Achievement Award Ontario Association of Speech-Language Pathologists & Audiologists	2015
Value: OSLA Membership	
Acoustical Society of America Student Poster Honorable Mention Meeting of the 170th Acoustical Society of America, Jacksonville	2015
Best PhD Student Poster Award  Health & Rehabilitation Sciences Graduate Research Conference, Western University	2015
Graduation with First Class Honours & Distinction $McGill\ University$	2012
Dean's Honour List  McGill University	2010

# **PUBLICATIONS**

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*, 46(3), 287-294. doi: 10.1017/cjn.2019.16

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. doi: 10.1044/2018\_JSLHR-S-17-0275.

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. doi: 10.1044/2017\_JSLHR-S-17-0157.

Cushnie-Sparrow, D., Adams, S.G., **Knowles, T.**, Leszcz, T.M., Jog, M. (2016). Effects of multitalker noise on the acoustics of voiceless stop consonants in Parkinson's disease. *Western Papers in Linguistics*.

Knowles, T., Clayards, M., Sonderegger, M., Wagner, M., Nadig, A., & Onishi, K. (2015). Automatic forced alignment on child speech: Directions for improvement. *Proceedings of Meetings on Acoustics*. doi: 25:060001.

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*. Glasgow, UK: the University of Glasgow.

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.

Cheng, J. & Knowles, T. (2012). Mandarin VP-Shell: Not as hard as you think. *McGill Cellar Door* 1, 4-20.

#### SUBMITTED MANUSCRIPTS

Sonderegger, M., Stuart-Smith, J., Macdonald, R., **Knowles, T.**, & Rathcke, T. (submitted). Structured heterogeneity in Scottish stops.

#### CODE

Keshet, J., Sonderegger, M., & Knowles, T. (2014). AutoVOT, v. 0.93.

· A software package for automatic measurement of voice onset time (VOT), using the algorithm described in Sonderegger & Keshet (2012).

Knowles, T. (unpublished). Publicly available Praat scripts.

- · https://github.com/thealk/PraatScripts
- · Includes Visual Analog Scale administration tool, interactive tutorials, and various scripts designed to facilitate speech analysis.

#### CONFERENCE & WORKSHOP PRESENTATIONS

#### Refereed conference presentations

Knowles, T., Adams, S., Page, A., Cushnie-Sparrow, D., & Jog, M. Evaluating the efficacy of speech amplification and personal communication devices in Parkinson's disease. American Speech-Language-Hearing Association (ASHA) Conference. Boston, MA. 11/2018. *International poster presentation* 

**Knowles, T.**, Adams, S., Page, A., Cushnie-Sparrow, D., & Jog, M. A comparison of voice amplification devices in Parkinson's disease.

- · American Speech-Language-Hearing Association (ASHA) CONNECT Conference. Baltimore, MD. 7/2018 (new data presented). *International poster presentation*
- · Speech-Language Pathology and Audiology Canada (SAC) Conference. Edmonton, AB. 5/2018. National poster presentation

Mancinelli, C., Adams, S.G., Abeyesekera, A., **Knowles, T.**, Delrobaei, M., & Jog, M. Deep brain stimulation parameter optimization for rate of speech in Parkinson's disease. American Speech-Language-Hearing Association Convention. Philadelphia, PA. 11/2016. *International poster presentation, presented by first author.* 

Knowles, T., Adams, S.G., Abeyesekera, A., Mancinelli, C., & Jog, M. Deep brain stimulation parameter optimization for speech intelligibility and vowel acoustics in Parkinson's disease. International Clinical Phonetics and Linguistics Association Conference, Halifax, NS. 6/2016. *International oral presentation*.

Abeyesekera, A., Adams, S.G., **Knowles, T.**, Mancinelli, C., Delrobaei, M., & Jog, M. Deep brain stimulation and speech in Parkinson's disease: Effects of stimulator settings and electrode contact positions. Southern Ontario Neuroscience Association, Waterloo, ON. 5/2016. *Provincial poster presentation, presented by first author.* 

Knowles, T., Adams, S.G., Abeyesekera, A., Mancinelli, C., Delrobaei, & M., Jog., M. Deep brain stimulation parameter optimization for speech intelligibility and speech acoustics in Parkinson's disease. Motor Speech Conference, Newport Beach, CA. 3/2016. *International poster presentation*.

Abeyesekera, A., Adams, S.G., **Knowles, T.**, Mancinelli, C., Delrobaei, & M., Jog., M. Deep brain stimulation parameter optimization for voice quality, speech intensity and prosody of speech in Parkinson's disease. Motor Speech Conference, Newport beach, CA. 3/2016. *International poster presentation, presented by first author*.

Knowles, T., Clayards, M., Sonderegger, M., Wagner, M., Nadig, A., & Onishi, K. Automatic forced alignment on child speech: Directions for improvement. Meeting of the Acoustical Society of America, Jacksonville, FL. 11/2015. *International poster presentation*.

Sonderegger, M., Stuart-Smith, J., Macdonald, R., **Knowles, T.**, & Rathcke, T. Stability and change in Scottish stops: A real-time study of three acoustic cues in Glaswegian vernacular. New Ways of Analyzing Variation 44, Toronto. 10/2015. *International oral presentation, presented by first author.* 

Clayards, M., & **Knowles, T.** Prominence enhances voicelessness and not place distinction in English voiceless sibilants. 18th International Congress of Phonetic Sciences. Glasgow, Scotland. 8/2015. International oral presentation, presented by first author.

Stuart-Smith, J., Sonderegger, M., Macdonald, R., **Knowles, T.**, & Rathcke, T. (2014). The private life of stops: VOT in a real-time corpus of spontaneous Glaswegian. 14th Conference on Laboratory Phonology. Tokyo, Japan. 7/2014. *International oral presentation, presented by first author.* 

Clayards, M., & **Knowles, T.** Sibilants, prominence, contrast and breathy voice. Phonetic Building Blocks of Speech. University of Victoria. Victoria, BC. 9/2014. *International poster presentation, presented by first author.* 

Clayards, M. & **Knowles, T.** Prosodic strengthening and sibilants. Linguistic Institute Conference on Universality and Variability in segment-prosody interactions. Ann Arbor, MI. 6/2013. *International oral presentation, presented by first author.* 

Fleischer, D., **Knowles, T.**, Cheng, J., Wagner, M., & Clayards, M. Syntactic effects on compensation for assimilation. Architectures and Mechanisms for Language Processing. Riva del Garda, Italy. 9/2012. *International oral presentation, presented by last author.* 

Little, C. & Knowles, T. Didja Know? Affrication in North American English Dialects.

- · Change and Variation in Canada 7. University of Toronto. Toronto, ON. 5/2012. National oral presentation.
- · 2nd Annual Hunter Undergraduate Linguistics and Language Study. Hunter College. New York, NY. 5/2012. *International oral presentation*.
- · International Linguistic Assoc. 58th Annual Conference. Kingsborough Community College. Brooklyn, NY. 4/2012. International oral presentation.

· 10th Annual Harvard Undergraduate Linguistics Colloquium. Harvard University. Cambridge, MA. 4/2012. International oral presentation.

Knowles, T. (2011). Gender and Lexical Variation: Coffee Tasting Descriptors.

- · McGill Canadian Conference for Linguistics Undergraduates. Montréal, QC. 3/2011. National oral presentation.
- · 9th Annual Harvard Undergraduate Linguistics Colloquium. Harvard University. Cambridge, MA. *International oral presentation*.

#### Invited presentations

Knowles, T. Speech amplification clinic: Speech-language pathology in-service. H.A. Leeper Speech & Hearing Clinic. Western University, London, ON. 1/2019.

Knowles, T. Louder but not clearer: Exploring underpinnings of speech intelligibility in dysarthria through acoustic, clinical, and technological lenses. Job talk presented at the University of Minnesota Twin Cities. Minneapolis, MN. 1/2019.

Knowles, T. Louder but not clearer: Exploring underpinnings of speech intelligibility in dysarthria through acoustic, clinical, and technological lenses. Job talk presented at the University at Buffalo. Buffalo, NY. 11/2018.

Knowles, T., Adams, S., Page, A., Cushnie-Sparrow, D., & Jog, M. A comparison of speech amplification and personal communication devices for individuals with Parkinson's disease. Communicative Disorders & Sciences Research Colloquium. University at Buffalo, Buffalo, NY. 4/2018.

### Local presentations

Knowles, T., Adams, S., Page, A., Cushnie-Sparrow, D., & Jog, M. Evaluating the efficacy of voice amplification and personal communication devices in Parkinson's disease. Speech & Language Seminar, Health & Rehabilitation Sciences, Western University. London, ON. 10/2018. Local oral presentation.

Knowles, T., Adams, S., Page, A., Cushnie-Sparrow, D., & Jog, M. A comparison of voice amplification devices in Parkinson's disease.

- · 5th Annual Movement Disorders Research Retreat. London, ON. 6/2018. Local oral presentation.
- · Health & Rehabilitation Graduate Research Conference. Western University, London, ON. 2/2018. Local oral presentation.

**Knowles, T.** The effect of rate manipulation on acoustic distinctiveness and intelligibility in dysarthria: Prospectus.

- · Speech & Language Seminar, Health & Rehabilitation Sciences, Western University. London, ON. 10/2017. Local oral presentation.
- · 4th Annual Movement Disorders Research Retreat. London, ON. 6/2017. Local oral presentation.

Knowles, T., Adams, S.G., Abeyesekera, A., Mancinelli, C., Gilmore, G., & Jog, M. Deep brain stimulation parameter optimization: Vowel acoustics in Parkinson's disease. Health & Rehabilitation Graduate Research Conference. Western University, London, ON. 2/2017. *Local oral presentation*.

Cushnie-Sparrow, D., Adams, S.G., Leszcz, T., **Knowles, T.**, & Jog., M. Effects of multitalker noise on the acoustics of voiceless stop consonants in Parkinson disease. Western Interdisciplinary Student Symposium on Language Research, London, ON. 3/2016. *Local oral presentation, presented by first author.* 

Knowles, T., Adams, S., Leszcz, T., Jog, M. Acoustic correlates of noise-related speech intelligibility deficits in Parkinson's disease. Health and Rehabilitation Sciences Graduate Research Conference.

Western University, London, ON. 2/2016. Local oral presentation.

Knowles, T., Adams, S.G., Abeyesekera, A., Mancinelli, C., Delrobaei, & M., Jog., M. Deep brain stimulation and speech.

- · 3rd Annual Movement Disorders Research Retreat. Toronto, ON. 6/2016. Local oral presentation.
- · 2nd Annual Movement Disorders Research Retreat. London, ON. 6/2015. Local oral presentation.

Knowles, T., Adams, S.G., Abeyesekera, A., Mancinelli, C., Delrobaei, & M., Jog., M. Effect of deep brain stimulation parameters on speech intelligibility and speech acoustics in Parkinson's disease.

- · Health & Rehabilitation Sciences Graduate Research Conference. Western University, London, ON. 2/2015. Local poster presentation.
- · Faculty of Health Sciences Research Day. Western University, London, ON. 3/2015. Local poster presentation.

Abeyesekera, A., Adams, S., **Knowles, T.**, Mancinelli, C., Delrobaei, M., & Jog, M. Effect of different deep brain stimulation parameters on voice quality, speech intensity, and prosody in Parkinson's Disease. Health & Rehabilitation Sciences Graduate Research Conference, Western University, London, ON. 2/2015. Local poster presentation, presented by first author.

Mancinelli, C., Adams, S., Abeyesekera, A., **Knowles, T.**, Delrobaei, M., & Jog, M. Deep brain stimulation parameter optimization for rate of speech in Parkinson's Disease. Health & Rehabilitation Sciences Graduate Research Conference, Western University, London, ON. 2/2015. *Local poster presentation, presented by first author.* 

Clayards, M., Wonnacott, E., & **Knowles, T.** A case study of childhood L2 learning of phonological contrasts. McGill School of Communication Sciences and Disorders 50th Anniversary Open House. McGill University. Montréal, QC. 11/2013. *Local poster presentation, presented by first author.* 

#### **MEDIA**

"Speech in Parkinson's disease: The potential role of amplification devices." Article written for *The Parkinson's Update (68)*. Parkinson Society Southwestern Ontario. Online. Summer/Fall 2018. https://parkinsonsociety.ca/wp-content/uploads/2018/07/Parkinson-68-complete-forweb-Compressed-003-final.pdf

"The R-Ladies Piece." Interview by GradCast for Radio Western. Radio. 6/2017.

"Research fine-tunes Parkinson's speech impact." Interview by Paul Mayne for Western News. Online. 3/2016. https://news.westernu.ca/2016/03/research-fine-tunes-parkinsons-speech-impact/

#### PROFESSIONAL EXPERIENCE: RESEARCH

#### Research Assistant

November 2014 - Present

Speech Movement Disorders Lab, Western University

London, ON

· 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

October 2014 - Present

Language & Cognition Lab, Western University

London, ON

- · 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*

August 2013 - June 2014

Montréal, QC

- · 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

August 2013 - June 2014

Linguistics Department, McGill University

Montréal, QC

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

# Lab Manager: Montréal Language Modeling Lab

June 2013 - June 2014

Linguistics Department, McGill University

Montréal, QC

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

# Research Assistant: CHILDES PhonBank Project

September 2012 - March 2014

Linguistics Department, McGill University

Montréal, QC

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

# Research Assistant: McGill Prosody Lab

June 2012 - June 2014

Linguistics Department, McGill University

Montréal, QC

- · 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

November 2011 - June 2014  $Montr\'{e}al,\ QC$ 

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

#### PROFESSIONAL EXPERIENCE: CLINICAL

# Student Clinician: Speech Amplification Clinic

September 2018 - present

H.A. Leeper Speech & Hearing Clinic

London, ON

- · 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

### Student Clinician: Schoolboard

May 2018 - June 2018

Thames Valley District Schoolboard

London, ON

· Conducted assessment and intervention for school-aged children

# Student Clinician: Fluency disorders

August 2017

Camp ShoutOut

Holton, MI, USA.

· Provided individual and group intervention to children with fluency disorders

# Student Clinician: Acquired neurogenic language disorders

May 2015 - July 2015

H.A. Leeper Speech & Hearing Clinic

London, ON

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

# Student Clinician: Voice disorders

May 2015 - June 2015

H.A. Leeper Speech & Hearing Clinic

London, ON

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

# Student Clinician: TykeTalk

January 2015 - April 2015

H.A. Leeper Speech & Hearing Clinic

London, ON

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

#### TEACHING EXPERIENCE

#### Tutorial: Figuring out figures in R

October 2018

R-Ladies, London, Ontario Chapter

Conducted interactive presentation and tutorial on using the programming language and software environment R to explore data and generate customized visualizations using the ggplot package

# Invited guest lecturer: Motor Speech Disorders (SLP714)

March 2018

Communication Sciences & Disorders

Central Michigan University

· Delivered lecture: "Treatment trends in hypokinetic dysarthria"

# ${\bf Tutorial:} \ {\bf Using} \ {\bf RMarkdown} \ {\bf to} \ {\bf generate} \ {\bf reports} \ {\bf and} \ {\bf manuscripts}$

March 2018

R-Ladies, London, Ontario Chapter

Conducted interactive presentation and tutorial on using the programming language and software environment R to produce integrated reports and manuscripts

Invited guest lecturer: Professional Practice Issues (COMMSCI9636)

November 2017

Communication Sciences & Disorders

Western University

· Delivered lecture: "Thinking about pursuing a PhD in communication sciences and disorders?"

# Teaching Assistant: Speech Science (COMMSCI9615)

Fall 2017

Communication Sciences & Disorders

Western University

- · Delivered lecture: "Introduction to phonetics"
- $\cdot$  Conducted three weekly labs on healthy and disordered speech acoustics for graduate SLP and Audiology students

# Teaching Assistant: Voice Disorders (COMMSCI9631)

Spring 2017

Communication Sciences & Disorders

Western University

· Graded quizzes and exams related to healthy and disordered voice production for graduate SLP students

# Teaching Assistant: Speech Science (COMMSCI9615)

Fall 2016, 2017

Communication Sciences & Disorders

Western University

- · Delivered lecture: "Introduction to phonetics"
- · Conducted three weekly labs on healthy and disordered speech acoustics for graduate SLP and Audiology students

# **Tutorial: Introduction to Praat Scripting**

Spring 2014

Department of Linguistics

McGill University

· Conducted tutorials for various linguistics laboratory research assistants on automating aspects of acoustic analysis by writing scripts in Praat

#### **VOLUNTEER & RELATED EXPERIENCE**

#### Pin Pals Volunteer

February - March 2016

Autism Ontario

London, ON

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

# Operation Smile Volunteer

September 2015 - June 2016

Western University

London, ON

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

#### IAL Voice Institute Attendee

June 2015

International Association of Laryngectomees

Baltimore, MD

- · Exposure to comprehensive issues related to laryngectomy and postlaryngectomy patient care
- · Acquired direct, hands-on experience with all methods of alaryngeal speech
- · Passed IAL examination which confirmed acquisition of basic and intermediate levels of knowledge in postlaryngectomy rehabilitation

#### Aphasia Retreat Day Volunteer

May 2015

Western University

London, ON

- $\cdot$  Volunteered as "communication ramp" for a dults with aphasia during full day retreat
- · Facilitated communication using SCAA strategies during games and activities

# Speech-Language Pathology Assistant

January 2013 - July 2014

Speech Therapy Montréal

Montréal, QC

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

# Software Carpentry Bootcamp Attendee

January 2013

McGill University

Montréal, QC

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

# Nor'Easter Marketing Street Team

August 2008

Nor'Easter Outdoor Festival

Burlington, VT

· Led a Montréal-based team of volunteers responsible for advertising the "Nor'Easter," a large-scale outdoor sports and music festival powered by Eastern Mountain Sports and held in Vermont

# **English Teacher**

September 2007 - July 2008

Private family

Salamanca, Spain

- · Provided daily private English lessons to two Spanish-speaking children
- · Created lesson materials including games and conversational practice

# ACADEMIC SERVICE & LEADERSHIP

January 2017 - present
$London, \ ON$
2016-2017
$London,\ ON$
2016-2017
versity London, ON
2016-2017
y London, $ON$
2015-2016
y London, $ON$
2016
versity London, ON
2015, 2016
versity London, ON
2015
$London,\ ON$

# TECHNICAL STRENGTHS

Computer Languages

R, Praat, LATEX, MatLab, Python

# PROFESSIONAL AFFILIATIONS

• Movement Disorders Society (MDS): Student Member

- Academy of Neurologic Communication Disorders and Sciences (ANCDS): Student Member
- American National Student Speech-Language-Hearing Association (NSSLHA): Student Member
- Ontario Association of Speech-Language Pathologists and Audiologists (OSLA): Student Member
- American Speech-Language-Hearing Association (ASHA) Special Interest Group 19: Member

# PERSONAL INTERESTS

- Rock climbing: competed in three US National Championships and one North American Continental Championship
- Long-distance running: completed two marathons and two half marathons
- Coffee preparation science: former Director of Quality Control at Café Myriade, current hobbyist

# OTHER INFORMATION

Citizenship United States
Permanent Residency Canada

Languages English (native), Spanish (advanced), French (novice)