

# THEA KNOWLES

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## EDUCATION

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<b>Western University, London, ON</b> MCIsc/PhD Candidate Health & Rehabilitation Sciences (Speech & Language Sciences) Communication Sciences & Disorders (Speech-Language Pathology)	2014 - Present
<b>McGill University, Montreal, QC</b> B.A. Honours, Linguistics First Class Honours, Distinction	2008 - 2012

## HONOURS & AWARDS

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<b>Ontario Graduate Scholarship</b> <i>Value: \$15,000</i>	2017-2018
<b>Graduate Student Research Program Award: Parkinson Society Southwestern Ontario</b> <i>Value: \$20,000</i>	2017-2018
<b>Vanier Scholarship Nominee (not awarded)</b> <i>Nominated by Faculty of Health Sciences, Western University</i>	2016
<b>Western University “3 Minute Thesis” First Place Winner</b> <i>Value: \$1,000</i>	2016
<b>Harmonize for Speech/Barbershoppers Award</b> <i>Value: \$750</i>	2016
<b>Student Achievement Award: Ontario Association of Speech-Language Pathologists &amp; Audiologists</b> <i>Value: OSLA Membership</i>	2015
<b>Acoustical Society of America Student Poster Honorable Mention</b> <i>Meeting of the 170th Acoustical Society of America, Jacksonville</i>	2015
<b>Best PhD Student Poster Award</b> <i>Health &amp; Rehabilitation Sciences Graduate Research Conference, Western University</i>	2015
<b>Graduation with First Class Honours &amp; Distinction</b> <i>McGill University</i>	2012
<b>Dean’s Honour List</b> <i>McGill University</i>	2010

## PUBLICATIONS

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**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*, [Advance online publication], 1-15. doi: 10.1044/2017-JSLHR-S-17-0157.

Cushnie-Sparrow, D., Adams, S.G., **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*.

**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

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**Knowles, T.**, Clayards, M., & Sonderegger, M. Automatic analysis of child speech: Implications for voiceless sibilant analysis. *In revision: Journal of Speech, Language, and Hearing Research*.

## CODE

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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).

## CONFERENCE & WORKSHOP PRESENTATIONS

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**Knowles, T.** The effect of rate manipulation on acoustic distinctiveness and intelligibility in dysarthria. Speech & Language Seminar, Health & Rehabilitation Sciences, Western University. London, ON. 10/2017. *Local oral presentation*.

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

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.*

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.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.**, 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.**, 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.*

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

- Third Annual Movement Disorders Research Retreat. Toronto, ON. 6/2016. *Local oral presentation.*
- Second 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.*

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., 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. Montreal, QC. 11/2013. *Local 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. Montreal, QC. 3/2011. *National oral presentation.*
- 9th Annual Harvard Undergraduate Linguistics Colloquium. Harvard University. Cambridge, MA. *International oral presentation.*

## MEDIA

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“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/>

“The R-Ladies Piece.” Interview by GradCast for *Radio Western*. Radio. 6/2017.

## PROFESSIONAL EXPERIENCE: RESEARCH

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**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** August 2013 - June 2014  
*McGill University* *Montreal, 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* *Montreal, QC*

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

**Lab Manager: Montreal Language Modeling Lab** June 2013 - June 2014  
*Linguistics Department, McGill University* *Montreal, 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* *Montreal, 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* *Montreal, 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** November 2011 - June 2014  
*Linguistics Department, McGill University* *Montreal, QC*

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

## PROFESSIONAL EXPERIENCE: CLINICAL

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**Student Clinician: Fluency disorders** August 2017  
*Camp ShoutOut* *Holton, MI, USA.*

- Provided intervention to children with fluency disorders
- Provided individual & group therapy

**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

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**TEACHING EXPERIENCE****Teaching Assistant: Speech Science (COMMSCI9615)**

Fall 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

**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

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**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**

*Western University*

May 2015

*London, ON*

- 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*

January 2013 - July 2014

*Montreal, QC*

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

#### **Software Carpentry Bootcamp Attendee**

*McGill University*

January 2013

*Montreal, QC*

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

#### **Nor'Easter Marketing Street Team**

*Nor'Easter Outdoor Festival*

August 2008

*Burlington, VT*

- Led a Montreal-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**

*Private family*

September 2007 - July 2008

*Salamanca, Spain*

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

### **ACADEMIC SERVICE & LEADERSHIP**

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#### **Co-founder**

*R-Ladies London, Ontario Chapter*

January 2017 - present

*London, ON*

#### **Chair/Organizer**

*Health & Rehabilitation Sciences Alumni Speaker Series, Western University*

2016-2017

*London, ON*

#### **Sponsorship Subcommittee Leader**

*Health & Rehabilitation Sciences Graduate Research Conference, Western University London, ON*

2016-2017

#### **Vice-President Finance**

*Health & Rehabilitation Sciences Graduate Student Society, Western University*

2016-2017

*London, ON*

#### **President**

*Health & Rehabilitation Sciences Graduate Student Society, Western University*

2015-2016

*London, ON*

#### **Co-organizer**

*Health & Rehabilitation Sciences Graduate Research Conference, Western University London, ON*

2016

#### **Abstract Reviewer**

*Health & Rehabilitation Sciences Graduate Research Conference, Western University London, ON*

2015

#### **Professional Program Preview Day Volunteer**

*School of Communication Sciences & Disorders, Western University*

2015

*London, ON*

## PROFESSIONAL AFFILIATIONS

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- Movement Disorders Society (MDS): Student Member
- Academy of Neurologic Communication Disorders and Sciences (ANCDS): Student Member
- American Speech-Language-Hearing Association (ASHA): Student Member
- Ontario Association of Speech-Language Pathologists and Audiologists (OSLA): Student Member

## TECHNICAL STRENGTHS

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**Computer Languages**      R, Praat, Latex, Python, MatLab

## LANGUAGES

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- English (native)
- Spanish (fluent)
- French (proficient)

## PERSONAL INTERESTS

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- Rock climbing (three-time US national competitor)
- Long-distance running (two-time marathon runner)
- Playing guitar
- Coffee preparation science