

Curriculum Vitae  
**Eric M. Johnson**

Department of Speech and Hearing Science  
The Ohio State University  
Pressey Hall Rm 022, 1070 Carmack Road  
Columbus, OH 43210

Telephone: 614-735-8666  
Fax: 614-292-7504  
E-mail: johnson.7289@osu.edu  
<https://eric-m-johnson.com/>

**RESEARCH AND TEACHING INTERESTS:**

Speech perception in normal and impaired systems; psychoacoustics; noise reduction; hearing aids and cochlear implants; speech science; audiological assessment

**EDUCATION:**

- (2022) Ph.D. – Speech and Hearing Science  
The Ohio State University, Columbus  
Major Course of Study: Speech Perception
- 2017 Au.D. – Communication Sciences and Disorders  
University of Utah, Salt Lake City
- 2013 B.A. – Linguistics  
Brigham Young University, Provo  
Second major: Portuguese  
Minor Course of Study: Linguistic Computing

**PROFESSIONAL EXPERIENCE:**

- 2018-2021 Graduate Teaching Associate  
Department of Speech and Hearing Science  
Center for Cognitive and Brain Sciences  
The Ohio State University
- 2017-2021 Graduate Research Associate  
Eric W. Healy's Speech Psychoacoustics Laboratory  
Department of Speech and Hearing Science  
Center for Cognitive and Brain Sciences  
The Ohio State University
- 2016-2017 Audiology Extern  
VA Salt Lake City Health Care System
- 2013-2016 Graduate Research Assistant  
Bruce L. Smith's Speech Science Laboratory  
Department of Communication Sciences and Disorders  
University of Utah
- 2013-2016 Graduate Teaching Assistant  
Department of Communication Sciences and Disorders  
University of Utah

## GRANTS:

### Current:

“Real-time Deep Learning to Improve Speech Intelligibility in Noise”  
(**E.M. Johnson, P.I.**), NIH \ NIDCD F32 DC019314  
9/30/20 – 9/29/22, Total costs: \$156,692.

“Improving Speech Intelligibly Without Sacrificing Environmental Sound Awareness”  
(**E.M. Johnson, P.I.**), OSU Alumni Grant for Graduate Research and Scholarship  
5/1/21 – 8/31/22, Total costs: \$2,000.

“Improving Intelligibility in Noise for Hearing-Impaired Listeners”  
(E.W. Healy, P.I.), NIH \ NIDCD R01 DC015521  
8/1/16 – 7/31/21, Direct costs: \$1,250,000. Total costs: \$1,852,127.  
**E.M. Johnson**, Graduate Research Associate

“Speech Segregation to Improve Intelligibility of Noisy Reverberant Speech”  
(D.L. Wang, P.I.), NIH \ NIDCD 2R01 DC012048  
1/1/18 – 12/31/22, Direct costs: \$1,001,874. Total costs: \$1,502,811.  
**E.M. Johnson**, Graduate Research Associate

“Research Related to Hearing”  
(E.W. Healy, P.I.), NVIDIA GPU Grant  
1/25/19 – 1/26/24, Equipment valued at \$3,000.  
**E.M. Johnson**, Graduate Research Associate

“Research Related to Hearing”  
(E.W. Healy, P.I.), NVIDIA GPU Grant  
8/1/17 – 7/31/22, Equipment valued at \$2,000.  
**E.M. Johnson**, Graduate Research Associate

### Completed:

“Improving Speech Intelligibility Using Machine Learning”  
(**E.M. Johnson, P.I.**), OSU Center for Cognitive and Brain Sciences  
Summer Graduate Research Award  
6/1/20 – 8/31/20, Total costs: \$5,760.

“Improving the Intelligibility of Speech in Real Time Using an Artificial Neural Network”  
(**E.M. Johnson, P.I.**), OSU Center for Cognitive and Brain Sciences  
Summer Graduate Research Award  
6/1/19 – 8/31/19, Total costs: \$5,505.

## PEER-REVIEWED PUBLICATIONS:

Healy, E. W., Pandey, A., **Johnson, E. M.**, & Wang D. L. (in preparation). A causal talker- and noise-independent deep learning algorithm to increase intelligibility for hearing-impaired listeners. *Journal of the Acoustical Society of America*.

- Healy, E. W., Taherian, H., **Johnson, E. M.**, & Wang D. L. (2021). A causal and talker-independent speaker separation/dereverberation deep learning algorithm: Cost associated with conversion to real-time capable operation. *Journal of the Acoustical Society of America*, 150, 3976-3986.
- Healy, E. W., **Johnson, E. M.**, Delfarah, M., Krishnagiri, D. S., Sevich, V. A., Taherian, H., & Wang D. L. (2021). Deep learning based speaker separation and dereverberation can generalize across different languages to improve intelligibility. *Journal of the Acoustical Society of America*, 150, 2526–2538.
- Healy, E. W., Tan, K., **Johnson, E. M.**, & Wang D. L. (2021). An effectively causal deep learning algorithm to increase intelligibility in untrained noises for hearing-impaired listeners. *Journal of the Acoustical Society of America*, 149, 3943–3953.
- Healy, E. W., **Johnson, E. M.**, Delfarah, M., & Wang D. L. (2020). A talker-independent deep learning algorithm to increase intelligibility for hearing-impaired listeners in reverberant competing talker conditions. *Journal of the Acoustical Society of America*, 147, 4106–4118.
- Johnson, E. M.**, Morgan, S. D., & Ferguson, S. H. (2020). Does time compression decrease intelligibility for female talkers more than for male talkers? *Journal of Speech, Language, and Hearing Research*, 63, 1083–1092.
- Healy, E. W., Delfarah, M., **Johnson, E. M.**, & Wang, D. L. (2019). A deep learning algorithm to increase intelligibility for hearing-impaired listeners in the presence of a competing talker and reverberation. *Journal of the Acoustical Society of America*, 145, 1378–1388.
- Smith, B. L., **Johnson, E. M.**, & Hayes-Harb, R. (2019). ESL learners' intra-speaker variability in producing American English tense and lax vowels. *Journal of Second Language Pronunciation*, 5, 139–164.
- Zhao, Y., Wang, D. L., **Johnson, E. M.**, & Healy, E. W. (2018). A deep learning based segregation algorithm to increase speech intelligibility for hearing-impaired listeners in reverberant-noisy conditions. *Journal of the Acoustical Society of America*, 144, 1627–1637.
- Hacking, J. F., Smith, B. L., & **Johnson, E. M.** (2017). Utilizing electropalatography to train palatalized versus unpalatalized consonant productions by native speakers of American English learning Russian. *Journal of Second Language Pronunciation*, 3, 9–33.
- Johnson, E. M.** (2013). Spoken like a true poet: The recreation of speech in Manuel Bandeira's *Libertinagem*. *La Marca Hispánica*, 24.

#### **PUBLISHED ABSTRACTS AND INVITED/CONTRIBUTED PRESENTATIONS:**

- Healy, E.W., Tan, K., **Johnson, E.M.**, & Wang, D.L. (2020). Real-time feasible deep learning noise reduction improves intelligibility for hearing-impaired listeners (a). *Journal of the Acoustical Society of America*. [conference cancelled due to pandemic]
- Healy, E.W., **Johnson, E.M.**, Delfarah, M., Krishnagiri, D.S., & Wang, D.L. (2020). Deep learning noise reduction can generalize to a novel talker speaking an entirely different language (a). *Journal of the Acoustical Society of America*. [conference cancelled due to pandemic]

Healy, E. W., Delfarah, M., **Johnson, E. M.**, & Wang, D. L. (2019). A deep learning algorithm to increase intelligibility for hearing-impaired listeners in the presence of a competing talker and reverberation (a). *Journal of the Acoustical Society of America*, 145, 1874.

Zhao, Y., Wang, D. L., **Johnson, E. M.**, & Healy, E. W. (2019). A deep learning based segregation algorithm to increase speech intelligibility for hearing-impaired listeners in reverberant-noisy conditions (a). *Journal of the Acoustical Society of America*, 145, 1874.

Zhao, Y., Wang, D. L., **Johnson, E. M.**, & Healy, E. W. (2018, August). A deep learning based segregation algorithm to improve speech intelligibility of hearing-impaired listeners in reverberant-noisy conditions. Paper presented at IHCON 2018, The International Hearing Aid Research Conference, Tahoe City, CA.

Hacking, J., Smith, B. L., and **Johnson, E. M.** (2016). Utilizing electropalatography to train palatalized versus unpalatalized consonant productions by native speakers of American English learning Russian. Paper presented at the 8<sup>th</sup> International Symposium on the Acquisition of Second Language Speech, Aarhus, Denmark.

**Johnson, E. M.** and Ferguson, S. H. (2016). Gender and rate effects on speech intelligibility (a). *Journal of the Acoustical Society of America*, 139, 2124.

## **TEACHING:**

### **Course Instructor:**

#### **At The Ohio State University**

2021                      *SHS 4440 Anatomy, Physiology, and Science of Hearing* (online)  
A lecture course for advanced undergraduate students in Speech and Hearing Science covering auditory anatomy and physiology as well as hearing science and psychoacoustics.

2019-2020              *SHS 4440 Anatomy, Physiology, and Science of Hearing* (in person)

### **Teaching Assistant:**

#### **At The Ohio State University:**

2018-2019              *SHS 4440 Anatomy, Physiology, and Science of Hearing* (in person)

#### **At the University of Utah:**

2013-2016              *CSD 4300 Speech Science* (in person)  
Introduction to the nature of sound, speech production, and characteristics of speech acoustics as they relate to normal and disordered speech production and speech perception.

2013-2016              *CSD 4300 Speech Science* (online)

## **ACADEMIC/PROFESSIONAL HONORS AND RECOGNITION:**

2019	Student Transportation Subsidy The 177th meeting of the Acoustical Society of America
2017-2018	University Fellowship The Graduate School The Ohio State University
2016-2017	Outstanding Graduate Student The College of Health University of Utah
2016-2017	Dolowitz Family Memorial Scholarship Department of Communication Sciences and Disorders University of Utah
2015-2016	Frances Dolowitz Scholarship Department of Communication Sciences and Disorders University of Utah

## **SERVICE:**

2013-2016	Fundraising member of the Student Academy of Audiology University of Utah
-----------	------------------------------------------------------------------------------

## **MEDIA/POPULAR PRESS COVERAGE:**

### **Internet:**

- ASA Worldwide Press Room, "Does increasing the playback speed of men's and women's voices reduce their intelligibility by the same amount?" May 2016.
- UNEWS, "Brit Accents Vex U.S. Hearing-Impaired Elderly," May 2016.

## **PROFESSIONAL MEMBERSHIPS**

American Auditory Society, Student Member  
Acoustical Society of America, Student Member  
Student Academy of Audiology  
National Student Speech Language Hearing Association