

Curriculum Vitae
Eric M. Johnson

Division of Communication Sciences and Disorders
West Virginia University
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RESEARCH AND TEACHING INTERESTS:

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

EDUCATION:

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| 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:

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| 2022–present | Assistant Professor
Division of Communication Sciences and Disorders
School of Medicine
West Virginia University |
| 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:

“Real-time Deep Learning to Improve Speech Intelligibility in Noise”
(**E.M. Johnson, P.I.**), NIH \ NIDCD F32 DC019314
9/30/20 – 8/7/22, Total costs: \$159,192.

“Improving Speech Intelligibly Without Sacrificing Environmental Sound Awareness”
(**E.M. Johnson, P.I.**), OSU Alumni Grant for Graduate Research and Scholarship
5/1/21 – 8/7/22, 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

“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). Progress made in the efficacy and viability of deep learning based noise reduction. *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 8th 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 West Virginia University

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| 2022 | <i>CSAD 342 Introduction to Audiology</i> (in person)
Introduction to the profession of audiology; principles of hearing screening, audiological assessment and treatment; disorders of hearing; audiogram interpretation. |
| 2022 | <i>CSAD 440 Introduction to Audiology</i> (in person)
Application of basic audiological techniques, including pure-tone and speech audiometry, masking, and immittance testing. |

At The Ohio State University

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| 2021 | <i>SHS 4440 Anatomy, Physiology, and Science of Hearing</i> (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 | <i>SHS 4440 Anatomy, Physiology, and Science of Hearing</i> (in person) |

Teaching Assistant:

At The Ohio State University:

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| 2018–2019 | <i>SHS 4440 Anatomy, Physiology, and Science of Hearing</i> (in person) |
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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.

LICENSES AND CERTIFICATIONS:

ASHA Certificate of Clinical Competence in Audiology
West Virginia Board of Examiners for Speech-Language Pathology and Audiology

PROFESSIONAL MEMBERSHIPS:

American Auditory Society
Acoustical Society of America
American Speech-Language-Hearing Association