

Harley Wheeler

Email: wheel488@umn.edu

Doctor of Philosophy

Speech-Language-Hearing Sciences

Mentors: Matthew B. Winn, Peggy Nelson

Started: August 2020

University of Minnesota,
Minneapolis, MN

Doctor of Audiology

Graduation: May 2020

James Madison University,
Harrisonburg, VA

Bachelor of Science in Communication

Sciences & Disorders with Honors

Graduation: May 2016

James Madison University,
Harrisonburg, VA

Research Experience

Listen Lab, U. Minnesota, *Minneapolis, MN*

August 2020 – Present

PhD Student, Matthew Winn, Au.D., Ph.D, Principal Investigator

- Review literature pertaining to perception of vocal emotion and acoustic analyses/ categorization of emotional expression
- Generated Praat scripting for extraction and manipulation of acoustic features in speech stimuli, such as F0 contour and intensity, and produced visualizations using R Project software

Henry Ford Health System, *Detroit, MI*

June 2019-March 2020

Clinical Research, Erica Bennett, Au.D., Ph.D, Principal Investigator

- Conducted statistical analyses on patients' perception of their communication ability, hearing aids, and usage satisfaction pre- and post-hearing aid fitting.

Boys Town National Research Hospital, *Omaha, NE*

May 2018 – August 2018

T-35 NIH Grant Research Trainee, Monita Chatterjee, Ph.D, Principal Investigator

- Designed and conducted an experiment examining the role of voice pitch contour in vocal emotion recognition
- Conducted linear mixed-effects model analyses using R Project software
- Participated in weekly journal groups exploring cochlear implants, hearing science, language development, and statistical methods

Lab for Auditory Perception in Children and Adults, JMU, *Harrisonburg, VA*

January 2014- May 2020

Research Assistant, Yingjiu Nie, Ph.D, Principal Investigator

- Perform tasks related to general lab procedures, including review of relevant literature, experimental design and set-up, Institutional Review Board writing and approval processes, subject recruitment and testing, data analysis, and presentation of findings
- Conducted studies examining both adult and pediatric normal-hearing and cochlear implant populations in collaboration with Eastern Virginia Medical School

Walter Reed National Military Medical Center, *Bethesda, MD*

June 2016- August 2016

Summer Research Intern, Joshua Bernstein, Ph.D, Principal Investigator

- Recruited and tested normal-hearing listeners and cochlear implant users for a variety of experiments
- Formed and revised experimental methods for ongoing research projects
- Participated in weekly research and journal meetings, building familiarity with literature on the topics of single-sided deafness, sound localization, electric and optogenetic hearing, and attentional effort

Publications

- **Wheeler, H. J.** (Aug 2023). Perception of prosody by cochlear implant users. F-32 grant submission to the National Institutes on Deafness and Other Communication Disorders.
- Sheffield, S.W., **Wheeler, H.**, Brungart, D.S., & Bernstein, J.G.W. (2023). The effect of sound localization on auditory-only and audiovisual speech recognition in a simulated multi-talker environment. *Trends in Hearing*, 27. doi:10.1177/23312165231186040
- **Wheeler, H.J.**, Hatch, D.R., Moody-Antonio, S.A., & Nie, Y. (2022). Music and Speech Perception in Prelingually Deafened Young Listeners with Cochlear Implants: A Preliminary Study Using Sung Speech. *Journal of Speech, Language, and Hearing Research*, 1-15. https://doi.org/10.1044/2022_JSLHR-21-00271
- Matz, A. F., Nie, Y., & **Wheeler, H.J.** (2022). Auditory Stream Segregation of amplitude-modulated narrowband noise in cochlear implant users and individuals with normal hearing. *Frontiers in Psychology*, 13:927854. doi: 10.3389/fpsyg.2022.927854
- **Wheeler, H.J.**, Tinnemore, A., & Chatterjee, M. (in prep). The Contribution of Voice Pitch Contour to Vocal Emotion Recognition.
- **Wheeler, H.J.**, Moody-Antonio, S., Hatch, D., & Nie, Y. (in prep). Music and Speech Perception in Prelingually Deafened Young Listeners with Cochlear Implants.
- Bennett, E., Stach, B., **Wheeler, H.**, & Benson, J. (2020). An Agile Approach to Measuring Patient Outcomes. *Audiology Practices*, 12(4), 10-17.
- Nie, Y., Galvin (Jr III), J., Morikawa, M., Fu, Q.J., Andre, V., and **Wheeler, H.** (2018). Music and Speech Perception in Children Using Sung Speech. *Trends in Hearing*, 20, 1-16.
- Sheffield, S. W., **Wheeler, H.J.**, Brungart, D. S., & Bernstein, J. G. (2016). Localization-based audiovisual speech-recognition benefit with degraded spatial cues. *Journal of the Acoustical Society of America*.
- **Wheeler, H. J.**, & Nie, Y. (2016). Build-up effect of auditory stream segregation using amplitude-modulated narrowband noise. James Madison University Scholarly Commons, Senior Honors Projects.
- Nie, Y., **Wheeler, H. J.**, Short, A. B., & Harrington, C. W. (2015). Relative weight of temporal envelopes across speech frequency regions for speech intelligibility in hearing-impaired listeners and cochlear implant users. *Journal of the Acoustical Society of America*, 1.

Presentations

- Fleming, J. T., **Wheeler, H. J.**, & Winn, M. B. (May 2024). Visual cues influence prosody perception among individuals with cochlear implants. 186th Meeting of the Acoustical Society of America, Ottawa, Ontario, Canada. Poster Presentation.
- **Wheeler, H. J.**, & Winn, M. B (May 2024). Perceptual weighting of acoustic cues to contrastive prosody for sentences in quiet and in noise. 186th Meeting of the Acoustical Society of America, Ottawa, Ontario, Canada. Poster Presentation.
- Fleming, J. T., **Wheeler, H. J.**, & Winn, M. (Feb 2024). Visual influences on prosody perception among listeners with cochlear implants. American Auditory Society's 51st Annual Scientific & Technology Conference, Scottsdale, AZ. Podium Presentation.
- Landsberger, D., **Wheeler, H. J.**, Stupak, N., & Winn, M. (Feb 2024). Vocal mimicry illustrates perception of prosody through a cochlear implant. American Auditory Society's 51st Annual Scientific & Technology Conference, Scottsdale, AZ. Podium Presentation.
- **Wheeler, H. J.** (Oct 2023). Development of a stimulus corpus and experimental approach to test CI listeners' perception of prosodic focus. Midwest Mini-Conference on Cochlear Implants, Minneapolis, MN. Podium Presentation.

- Nelson, P., **Wheeler, H. J.**, Andriacchi, M., & O'Neill, E. (Oct 2023). Effectiveness of remote post-fitting support for over-the-counter hearing devices. 185th Meeting of the Acoustical Society of America, Sydney, Australia. Poster Presentation.
- **Wheeler, H.J.**, Krogseng, T., & Winn, M. (July 2023). Perception of prosodic cues for contrastive focus in sentences. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA. Poster Presentation.
- **Wheeler, H. J.**, Nelson, P., Ellison, J., & O'Neill, E. (May 2023). Evaluating remote post-fitting support services for over-the-counter hearing devices. 184th Meeting of the Acoustical Society of America, Chicago, IL. Poster Presentation.
- **Wheeler, H. J.**, & Winn, M. B. (Oct 2022). Perception of prosody by people who use cochlea implants. Center for Applied and Translational Sensory Science Fall Symposium 2022, Minneapolis, MN. Podium Presentation.
- **Wheeler, H.J.***, Krogseng, T., & Winn, M. (May 2022). Perception of Prosodic Cues to Correct Mistakes, in Listeners with Normal Hearing and with Cochlear Implants. Acoustical Society of America, Denver, CO. Poster Presentation.
- **Wheeler, H.J.***, Krogseng, T., & Winn, M. (Feb 2022). Production and perception of cues signaling information correction in utterances. American Auditory Society's 49th Annual Scientific & Technology Conference, Scottsdale, AZ. Poster Presentation.
- **Wheeler, H.J.*** (June 2019). Music and speech perception in pre-lingually deafened young listeners with cochlear implants. James Madison University, Harrisonburg, VA. Dissertation defense.
- **Wheeler, H.J.***, Tinnemore, A., & Chatterjee, M. (March 2019). The Contribution of Voice Pitch Contour for Vocal Emotion Recognition. American Auditory Society's 46th Annual Scientific & Technology Conference, Scottsdale, AZ. Poster presentation.
- **Wheeler, H.J.***, Tinnemore, A., & Chatterjee, M. (February 2019). The Contribution of Voice Pitch Contour to Emotion Recognition. Association for Research in Otolaryngology's 42nd MidWinter Meeting, Baltimore, MD. Poster presentation.
- Nie, Y.*, Moody-Antonio, S., Hatch, D., & **Wheeler, H.J.** (March 2018). Melodic Contour Identification and Sentence Recognition by Prelingually-deafened Child Cochlear Implant Users: A Preliminary Report Using Sung Speech. American Cochlear Implant Alliance's CI2018 Meeting, Washington DC. Poster presentation.
- **Wheeler, H.J.*** & Nie, Y. (October 2017). Build-up effect of auditory stream segregation using amplitude-modulated narrowband noise. The Ruth Symposium in Audiology & Hearing Science, Harrisonburg, VA. Poster presentation.
- **Wheeler, H.J.*** & Nie, Y. (July 2017). Build-up effect of auditory stream segregation using amplitude-modulated narrowband noise. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA. Poster presentation.
- **Wheeler, H.J.***, Matz, A., & Nie, Y. (March 2017). Auditory Stream Segregation in Cochlear Implant Users: A Preliminary Report. American Auditory Society's 44th Annual Scientific & Technology Conference, Scottsdale, AZ. Poster presentation.
- Sheffield, S. W.*, **Wheeler, H.J.**, Brungart, D. S., Bernstein, J. G. (December 2016). Localization-based audiovisual speech-recognition benefit with degraded spatial cues. 172nd Meeting of the Acoustical Society of America, Honolulu, HI. Poster presentation.
- Sheffield, S.W.*, **Wheeler, H.J.**, Brungart, D.S., & Bernstein, J.S.W. (November 2016). Localization-based audiovisual speech-recognition benefit with degraded spatial cues. 5th Joint Meeting, Acoustical Society of America and Acoustical Society of Japan, Honolulu, HI. Podium presentation.

- **Wheeler, H.***, Nie, Y., and Matz, A. (March 2016). Build-up effect of auditory stream segregation using amplitude-modulated narrowband noise. American Auditory Society's 43rd Annual Scientific & Technology Conference, Scottsdale, AZ. Poster presentation.
- **Wheeler, H.J.***, Nie, Y., and Matz, A. (January 2016). Build-up effect of auditory stream segregation using amplitude-modulated narrowband noise. Mid-Atlantic Seminar on Hearing (MASH), College Park, MD. Podium presentation.
- Nie, Y.*, **Wheeler, H.**, Short, A., & Harrington, C. (May 2015). Relative weight of temporal envelopes across speech frequency regions for speech intelligibility in hearing-impaired listeners and cochlear implant users. 169th Meeting of the Acoustical Society of America, Pittsburg, PA. Poster presentation.
- Nie, Y.*, Short, A., **Wheeler, H.**, & Harrington, C. (February 2015). Relative weight of temporal envelope for speech perception across speech frequency regions in children and adults. Association for Research in Otolaryngology's 38th MidWinter Meeting, Baltimore, MD. Poster presentation.

Clinical Experience

Henry Ford Health System, Audiology Resident, Detroit, MI

June 2019-March 2020

- Performing comprehensive audiometric evaluation, counseling, videonystagmography, rotational chair testing, video head impulse testing, screening/ diagnostic/ neurodiagnostic auditory evoked potential testing of infants, children, and adults, and cochlear implant candidacy evaluation/ device selection/ activation/ programming
- Selection, fitting, and maintenance of hearing aids and hearing protective devices
- Independently maintain a database of patients for enrollment in an ototoxicity monitoring program due to chemotherapy administration for malignant neoplasms of the head and neck across five hospital locations and conduct regular contact with patients for continued monitoring during and following treatment
- Providing clinical supervision for doctoral students of the Wayne State University audiology program

James Madison University Clinical Rotations, Harrisonburg, VA

September 2016-May 2019

- Performed comprehensive audiometric evaluations, electrocochleography, videonystagmography, and counseling in university, private practice, and medical office settings.
- Selection, fitting, and maintenance of hearing aids and hearing protective devices.
- Partnered with James Madison University's steam power plant in a hearing conservation program, educating staff on proper use of hearing protective devices and conducting baseline and monitoring audiometric evaluations.

Teaching Experience

University of Minnesota, Minneapolis, MN

Spring 2024

Phonetics

- Instructed a course of 65 undergraduate students on phonetic transcription of speech and its limitations. The impact of cultural variance, development of language, and speech disorders on production of speech and its transcription were also taught.

University of Minnesota, Minneapolis, MN

Fall 2023

Pathophysiology of Hearing Disorders

- Instructed second and third year audiology students on disorders of the auditory system, including anatomical, physiological, perceptual, and audiological manifestations of pathologies affecting hearing. Course outcomes were based on understanding current data on physiology, pharmacology, and novel treatment.
- Co-instructor: Peggy Nelson, PhD

James Madison University, Harrisonburg, VA

Fall 2017- Spring 2019

Anatomy and Physiology and Audiologic Assessment Teaching Assistant

- Instructed and supervised first and second year audiology students in laboratory sessions exploring proper use of standard clinical devices, such as audiometers, immittance probes, and otoscopes.
- Mentored/ tutored students on course content as needed, and graded and provided feedback for assignment submissions
- Primary Instructor: Yingjiu Nie, PhD

Leadership Experience

State Student Academy of Audiology, *Harrisonburg, VA*

Summer 2017 – Spring 2018

President

- Coordinated the Ruth Symposium, including contact with speakers and consulting local businesses for contributions towards a silent auction event for generating organization funds
- Collaborate with local clinicians and the state's Special Olympics event to provide free services to event participants, including cerumen management, DPOAE screening, audiometric screenings, hearing protection devices, and appropriate referrals
- Organize the 2017 White Coat Ceremony for the incoming class of clinical audiology students, including arrangement of speakers, reservation of venue, budgeting of catering services, and delivery of a motivational/ welcoming speech.

Student Speech-Language & Hearing Association, JMU, *Harrisonburg, VA*

Fall 2014 – Spring 2016

Student-Faculty Liaison

- Directed students interested in involvement beyond classes to faculty with overlapping interests to encourage participation in research and clinical outreach programs
- Initiated a semesterly student faculty dinner event for introduction of interested undergraduate students to CSD program faculty—this event has since become a department tradition

Awards

National Institutes of Health/ NIDCD F32DC021847-01

Summer 2024-Summer 2026

Graduate Training Program in Sensory Science:

Optimizing the Information Available for Mind and Brain

Fall 2022- Summer 2023

Graduate Training Program in Sensory Science:

Optimizing the Information Available for Mind and Brain

Fall 2021- Summer 2022

Bryng Bryngelson Research Funding Award, UMN

December 2020

Charles E. Speaks Fellowship, U. Minnesota

August 2020-Present

Conference on Implantable Auditory Prosthesis Travel Award, CIAP

July 2017

NIDCD American Auditory Society T35 Travel Award, AAS

2019

James Madison University Graduate School National Travel Award, CIAP

2017

James Madison University CSD Dept. Scholarship

2016

Green-Price Academic Scholarship, James Madison University

2015