Sharon E. Miller, Ph.D., CCC-A

Brain and Behavior Laboratory
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EDUCATION

8/2015	Ph.D. in Speech-Language-Hearing Science University of Minnesota, Minneapolis, MN Dissertation*: Neural correlates of phonetic learning in adults listeners with cochlear implants*
9/2005	M.A. in Audiology University of Minnesota, Minneapolis, MN Thesis: *Examining the role of the fundamental frequency contour on speech intelligibility in background noise*
6/2003	B.S. in Communication Sciences and Disorders; Psychology Northwestern University, Evanston, IL

ACADEMIC APPOINTMENTS

8/2017-	Assistant Professor Department of Audiology and Speech-Language Pathology University of North Texas Denton, TX
7/2016-8/2017	Assistant Professor Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders University of Louisville School of Medicine Louisville, KY
8/2015 - 7/2016	Instructor Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders University of Louisville School of Medicine Louisville, KY

OTHER POSITIONS AND EMPLOYMENT

10/2005 - 6/2007	Clinical Audiologist Midwest Ear, Nose, and Throat Specialists Woodbury, MN

4/2016 – 8/2017 Clinical Audiologist
University of Louisville Physicians

CERTIFICATION AND LICENSURE

10/2005- American Speech-Language-Hearing Association Certification (#12121646)
10/2005- Licensed Audiologist, State of MN (#7971)

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

10/2005- American Speech-Language-Hearing Association Member
- 12/2014- Special Interest Group 7 Member: Aural Rehabilitation and Its Instrumentation

9/2008- American Auditory Society Member
9/2015- American Academy of Audiology Fellow
9/2007 - 8/2015 Minnesota Academy of Audiology Member
- 5/2012-5/2014: Membership Committee member

8/2018- Texas Speech-Language-Hearing Association Member
- 8/2018-present: Continuing education unit approver, Audiology

HONORS AND AWARDS

4/2017 **James and Susan Jerger Award for Excellence in Student Research*, American Academy of Audiology
3/2017 New Investigator Travel Award, American Auditory Society
2/2017 *1st Place Student Poster Award, Kentucky Speech-Language-Hearing Association
2/2017 *3rd Place Student Poster Award, Kentucky Speech-Language-Hearing Association
9/2012 Doctoral Dissertation Fellowship Winner, College of Liberal Arts, University of Minnesota
5/2008 Graduate Research Partnership Program Fellowship Award Winner, College of Liberal Arts, University of Minnesota
8/2007 Charles E. Speaks Graduate Fellowship Fund Recipient, Department of Speech-Language-Hearing Science, University of Minnesota,

*Awarded to mentored trainee

COMMITTEE ASSIGNMENTS AND ADMINISTRATIVE SERVICES

University Activities

9/2018- Curriculum committee, Department of Audiology and Speech-Language Pathology, University of North Texas, Denton, TX
1/2018- Health Services Research PhD committee, College of Health and Public Service, University of North Texas, Denton, TX
9/2017- Scholarship committee, Department of Audiology and Speech-Language Pathology, University of North Texas, Denton, TX
9/2017-9/2018 Personnel affairs committee, Department of Audiology and Speech-Language Pathology, University of North Texas, Denton, TX

9/2017-	Graduate admissions committee, Department of Audiology and Speech-Language Pathology, University of North Texas, Denton, TX
11/2017-	Online course committee, Department of Audiology and Speech-Language Pathology, University of North Texas, Denton, TX
9/2016-8/2017	Facilitator, Culturally Effective Care Symposium, School of Medicine, University of Louisville
1/2016-8/2017	Community Engagement Committee, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, University of Louisville
3/2016-8/2017	Audiology program representative, University of Louisville Pre-Health Student Conference, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, University of Louisville
1/2013-5/2013	Proseminar Coordinator, Department of Speech-Language-Hearing Science, University of Minnesota
1/2009-5/2009	Proseminar Coordinator, Department of Speech-Language-Hearing Science, University of Minnesota
9/2007-9/2011	Council of Graduate Students representative, Department of Speech-Language-Hearing Science, University of Minnesota

Non-University Activities

1/2010 -	Audiology Consultant to Pathways for Children, Minneapolis, MN. Organized and lead a humanitarian audiology trip to Kolkata, India in January, 2010 where I fit children with hearing aids and developed a follow-up care program for the patients. I continue to consult on other humanitarian missions.

EDUCATIONAL ACTIVITIES

Graduate Student Teaching

1/2019-	ASLP 6690: Hearing Aids I Department of Audiology and Speech-Language Pathology, University of North Texas. Instructor for the 3 semester credit course in the doctoral Audiology program. Independently developed the beginning course in amplification; created unique lecture notes, hearing aid laboratory assignments, and exams.
8/2018-	ASLP 6770: Electrophysiological Assessment Department of Audiology and Speech-Language Pathology, University of North Texas. Instructor for the 4 semester credit course in the doctoral Audiology program. Independently developed the course and created unique lecture notes, laboratory assignments, and exams.
1/2018-	ASLP 6780 Electrophysiological Assessment II Department of Audiology and Speech-Language Pathology, University of North Texas. Instructor for the 3 semester credit course in the doctoral Audiology program. Independently developed the course and created unique lecture notes, laboratory assignments, and exams.

8/2017- ASLP 6695: Hearing Aids II
Instructor, Department of Audiology and Speech-Language Pathology, University of North Texas. Instructor for the 3 semester credit course in the doctoral Audiology program. Independently developed the advanced course in amplification; created unique lecture notes, laboratory assignments, and exams.

5/2016-8/2017 AUDI 630: Amplification II: Selection and Fitting
Instructor, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, *University of Louisville*
Instructor for the 3 semester credit course in the doctoral Audiology program. Independently developed the course and created unique lecture notes, laboratory assignments, and exams.

1/2016-8/2017 AUDI 646: Medical Audiology
Instructor, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, *University of Louisville*
Instructor for the 3 semester credit course in the doctoral Audiology program. Independently developed the course and created unique lecture notes, laboratory assignments, and exams.

8/2015-8/2017 AUDI 629: Cochlear Implants and Implantable Devices
Instructor, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, *University of Louisville*
Instructor for the 4 semester credit course in the doctoral Audiology program. Independently developed the course and created unique lecture notes, laboratory assignments, and exams.

1/2014-5/2014 SLHS 4802: Rehabilitative Audiology
Instructor, Department of Speech-Language-Hearing Science, *University of Minnesota*
Instructor for the 3 semester credit course of 85 undergraduate and graduate students. Independently developed lecture notes, laboratory assignments, and exams.

8/2009-5/2010 SLHS 5808: Laboratory Module in Audiology
Instructor, Department of Speech-Language-Hearing Science, *University of Minnesota*
Taught clinical skills to doctoral students in audiology through a series of independently created labs on the topics of hearing aids and audiological assessment and evaluation.

Undergraduate Student Teaching

8/2018- ASLP 3996: Honors College Mentored Research Experience
8/2017- ASLP 3030: Speech and Hearing Science
Instructor, Department of Audiology and Speech-Language Pathology, *University of North Texas*

Instructor for the 3 semester credit course. Created unique lecture notes, laboratory assignments, and exams.

8/2007-5/2012 SLHS 1301: The Physics and Biology of Spoken Language
Lead teaching assistant and laboratory instructor, Department of Speech-Language-Hearing Science, University of Minnesota
Developed and wrote new laboratory assignments and experiments; trained new teaching assistants every semester; led weekly laboratory sections of 15+ students; graded lab reports and exams; created and led three independent review sessions per semester; maintained course website.

Graduate Student Advising

8/2015-8/2017 Academic Advisor**,** Doctor of Audiology program, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, *University of Louisville*

Au.D. Student Advisees:
Jessica Kinney
Haiden Nunn
Lauren Webb
Emily Kate Feibelman
Robert Parker

Graduate Student Research Advising

8/2015-8/2017 Research Advisor, Audiology Capstone Research Project, Doctor of Audiology program, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, *University of Louisville*

1. Jessica Graham
   Topic: Sensory gating of natural and synthetic speech

2. Kaci Edwards-Wathen
   Topic: Neural correlates of the Acceptable Noise Level

3. Jessica Minnick (co-advised with Elizabeth Cash, Ph.D.)
   Topic: Hearing Loss and Psychosocial Constructs in Head and Neck Cancer Patients

4. Samantha Munzer
   Topic: Neural Correlates of Phonetic Categorization in Adult Cochlear Implant Listeners

8/2015-5/2017 Master's thesis supervisor, Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders, *University of Louisville*

1. Allison Brown
   Topic: Cortical processing of natural versus synthetically produced speech

Undergraduate research advising

8/2018- Honors College Mentored Research Experience, Department of Audiology and Speech-Language Pathology, *University of North Texas*

1. Kendra Maher
   Topic: Neural coding of speech sounds with and without hearing aids

CLINICAL ACTIVITIES

10/2005-6/2007 Clinical audiologist
Midwest Ear, Nose, and Throat Specialists
Woodbury, MN

Conducted audiological, electrophysiological, and vestibular assessments to diagnose hearing loss or vestibular pathology in adults and pediatric populations. Conducted comprehensive hearing aid evaluations to manage hearing loss in adult and pediatric populations. Consulted with Otolaryngologists in a multidisciplinary setting.

RESEARCH EXPERIENCE

10/2004-9/2005 Master's Thesis Project in Audiology: Examining explanations for the fundamental frequency's contribution to speech intelligibility in noise
Supervised by Robert Schlauch, Ph.D.
University of Minnesota, Minneapolis, MN

Conducted supervised behavioral research project that examined the role of the fundamental frequency contour (e.g. pitch contour) on speech intelligibility in background noise. Responsible for stimulus preparation, experiment design, subject recruitment, data collection and analysis, and manuscript preparation.

8/2007-8/2015 Research Assistant
Supervised by Yang Zhang, Ph.D.
University of Minnesota, Minneapolis, MN

Conducted three independent behavioral and auditory event-related potential (ERP) projects

- *Neural correlates of phonetic learning in adult cochlear implant listeners*
  - Examined the effects of formal auditory training on ERP and behavioral measures of phonetic categorization in adult cochlear implant listeners.
- *Neural coding of speech and non-speech sounds in cochlear implant users*
  - Examined the effects of a cochlear implant on ERP responses to speech and tonal stimuli.
- *Neural coding of speech sounds*.

- Examined the effects of hearing aid amplification on ERP responses elicited by fricative speech sounds.

Responsible for: Subject recruitment for infant and adult auditory ERP, fMRI, and behavioral studies; ERP data collection and analysis using MATLAB, Advanced Source Analysis, and Brain Electrical Source Analysis programs; Statistical analysis of ERP data; Training research assistants how to conduct EEG experiments; Writing Internal Review Board (IRB) applications; Manuscript preparation.

ABSTRACTS AND PRESENTATIONS

[¥]Denotes mentored presentation/abstract: student/postdoc/fellow/resident

ORAL PRESENTATIONS

National/International Meetings

1. **Miller, S.E**., Munzer, S., Graham, J., and Zhang, Y. (2017). Neural correlates of phonetic categorization. Paper presented at the American Auditory Society Annual Meeting, Scottsdale, AZ, March 2.
    a. New investigator travel award recipient, selected as part of the John Niparko memorial session on Cochlear Implants and Outcome Measures.

2. **Miller, S.E.**, Zhang Y. and Nelson, P.B. (2014). Neural Correlates of phonetic learning in adult cochlear implant listeners. Paper presentation at Cochlear Implant Research and Stuff about Hearing Conference, Madison, WI, November 6-7.

3. **Miller, S.E.** & Zhang Y. (2012). Speech evoked ERPs in cochlear implant users. Paper presentation at Cochlear Implant Research and Stuff about Hearing Conference, Madison, WI, November 2-3.

Local/Regional Meetings

1. **Miller, S.E.** (2017) Amplification and the Brain: The role of formal auditory training. Podium presentation, Kentucky Academy of Audiology annual convention, August 10.

2. **Miller, S.E.** (2017). Auditory training for hearing aid users. Podium presentation, Kentucky Speech Language Hearing Association annual convention, Lexington, KY, February 24.

3. **Miller, S.**E. (2016). Auditory training for cochlear implant listeners. Invited talk, Hearing Loss Association of America, Kentuckiana Chapter, November 8.

4. **Miller, S.E**., Zhang, Y., and Nelson, P.B (2014). Neural correlates of phonetic learning in adult cochlear implant users. Invited talk, Department of Otolaryngology, The Mayo Clinic, Rochester, MN, April 28.

5. **Miller, S.E**., Zhang, Y., and Nelson, P.B (2014). Neural correlates of phonetic learning in adult cochlear implant users. Invited talk, Department of Speech-Language-Hearing Science, The University of Minnesota, March 31.

6. **Miller, S.E**. & Zhang, Y. (2013). Auditory event-related potentials in cochlear implant users. Invited talk at Fairview Hospital, University of Minnesota, March 18, Minneapolis, MN.

POSTERS

1. **Miller, S.E**. and ¥Graham, J. (2019). Auditory cortical gating to speech stimuli. Accepted poster presentation, American Auditory Society Annual Meeting, March 1-3, Scottsdale, AZ.

2. ¥Covert, S., ¥De Blaey, E., ¥Kaiser, K., and **Miller, S.E**. (2018). Neural coding of fricatives with and without a hearing aid. Poster presentation , American Academy of Audiology, April 18-21, Nashville, TN.

3. ¥Ballard, G., ¥Brown, A., ¥Sancer, L., and **Miller, S.E.** (2018). Neural coding of natural and synthetically produced fricatives. Poster presentation , American Academy of Audiology, April 18-21, Nashville, TN.

4. ¥Graham, J. and **Miller, S.E.** (2018). Cortical inhibition and self-reported listening difficulties in background noise. Poster presentation, American Academy of Audiology, April 18-21, Nashville, TN.

5. ¥Graham, J. and **Miller, S.E.** (2017). Sensory gating in response to natural and synthetic speech. Poster presentation at the Kentucky Academy of Audiology annual conference, August 10-12, Lexington, KY.
    a. Awarded 3rd place in the student research symposium

6. ¥Munzer, S., ¥Graham, J., and **Miller, S.E.** (2017). Neural correlates of phonetic categorization in adult cochlear implant listeners. Poster presentation at the American Academy of Audiology annual convention, April 5-8 Indianapolis, IN.
    a. Received *James and Susan Jerger Excellence in Student Research Award*

7. ¥Wathen, K., Cornell, L., Cash, E., and **Miller, S.E.** (2017) Acceptable Noise Level and Auditory Sensory Gating. Poster presentation at the American Academy of Audiology annual convention, April 5-8 Indianapolis, IN.

8. ¥Brown, A. and **Miller, S.E.** (2017) Neural coding of natural and synthetic speech. Poster presentation at the Kentucky Speech-Language-Hearing Association annual meeting, February 24-26, Lexington, KY.
    a. Awarded first-place in student research poster symposium

9. ¥Minnick, J., Brinkman, C., Albert, C., Zahorik, P., Cash, E., and **Miller, S.E.** (2017). Anxiety, Depressive Symptoms, and Spatial Perception in Head and Neck Cancer Patients. Poster presentation at the Kentucky Speech-Language-Hearing Association annual meeting, February 24-26, Lexington, KY.

10. **Miller, S.E**. and Zhang, Y. (2016). Neural Correlates of Phonetic Categorization in Individual Cochlear Implant Listeners. Poster presentation at the 23rd Annual Appalachian Spring Conference, June 9-10, Johnson City, TN.

11. ¥Pigeon, A., Weihing, J. and **Miller, S.E** (2016). An Electrophysiologic Measure of Attention Switching. Poster presentation at the American Academy of Audiology national meeting, April 13-16, Phoenix, AZ.

12. **Miller, S.E**., Zhang, Y., and Nelson, P.B. (2014). Neural correlates of phonetic learning in adult cochlear implant users. Poster presentation at the American Auditory Society Annual Meeting, March 6-8, Scottsdale, AZ.

13. **Miller, S.E**. & Zhang, Y. (2013). Independent component analysis: cochlear implant artifact removal in EEG data. Poster presentation at the American Auditory Society Annual Meeting, March 7-9, Scottsdale, AZ.

14. Nie, Y., **Miller, S.E**., Koerner, T., Zhang, Y. & Nelson, P. (2013) Masking release in speech with degraded spectral cues: evidence from event-related potentials. Poster presentation at the Conference on Implantable Auditory Prostheses, July 14-19, Lake Tahoe, CA.
15. Zhang, Y., **Miller, S.E**., & Koerner, T. (2010). Neural coding of formant-exaggerated speech in infants and adults. Poster presentation at the 158th Meeting of the Acoustical Society of America, April 19-23, Baltimore, MD.

16. **Miller, S.E**. & Zhang, Y. (2009). Neural representation of fricative speech sounds processed through hearing aids. Poster presentation at the 16th Annual Meeting of the Cognitive Neuroscience Society March 20-23, San Francisco, CA.

17. Rao, A., Zhang, Y., & **Miller, S.E**. (2009). The influence of competing stimuli on auditory selective attention: A behavioral and electrophysiological study. Poster presentation at the 16th Annual Meeting of the Cognitive Neuroscience Society March 20-23, San Francisco, CA.

18. Zhang, Y., Imada, T., Kawakatsu, M., Tanaka, K., Aoyama, A., **Miller, S.E**., & Nemoto, I. (2009). Speech, gender and emotion processing in spoken words. Poster presentation at the 16th Annual Meeting of the Cognitive Neuroscience Society March 20-23, San Francisco, CA

19. Zhang, Y. & **Miller, S.E.** (2008). An event-related potential study of the perceptual magnet effect in speech perception. Poster presentation at the 15th Annual Meeting of the Cognitive Neuroscience Society April 10-13, San Francisco, CA

20. Zhang, Y. & **Miller, S.E**. (2008). Effects of vowel formant exaggeration on event-related potential measures of speech perception. Poster presentation at the 15th Annual Meeting of the Cognitive Neuroscience Society April 10-13, San Francisco, CA

21. Schlauch, R.S., **Miller, S.E**. and Watson, P.J. (2005). Examining explanations for fundamental frequency's contribution to speech intelligibility in noise. Acoustical Society of America, conference poster presentation, Minneapolis, MN.

PUBLICATIONS

PEER-REVIEWED
Journal articles published

Original research articles

1. **Miller, S.E.,** Wathen, K¥, Cash, E., Pitts, T., and Cornell, L. (2018). Auditory sensory gating predicts Acceptable Noise Level. *Hearing Research*, 359, 76-84.

2. **Miller, S.E**., Zhang, Y. & Nelson, P.B. (2016). Neural correlates of phonetic learning in postlingually deafened cochlear implant listeners. *Ear and Hearing,* 37(5) ,514-528.

3. **Miller, S.E.,** Zhang, Y, & Nelson, P.B. (2016). Efficacy of multiple-talker phonetic identification training in postlingually deafened cochlear implant listeners. *Journal of Speech-Language-Hearing Research,* 50, 90-98.

4. **Miller, S.E.** and Zhang, Y. (2014). Validation of the Cochlear Implant Artifact Correction tool for auditory electrophysiology. *Neuroscience Letters*, 577, 51-55.

5. **Miller, S.E.** and Zhang, Y. (2014). Neural coding of phonemic fricative contrast with and without hearing aid. *Ear and Hearing,* 35, 122-33.

6. Zhang, Y., Koerner, T., **Miller, S.E**, Grice-Patil, Z., Svec, A., Akbari, D., Tusler, L., & Carney, E. (2011). Neural coding of formant-exaggerated speech in the infant brain. *Developmental Science*, 3, 566-581.

7. **Miller, S.E.**, Schlauch, R.S., & Watson, P.J. (2010). The effects of fundamental frequency contour manipulations on speech intelligibility in background noise. *Journal of the Acoustical Society of America*, 128, 435-43.

8. Rao, A. Zhang, Y., & **Miller, S**.**E**. (2010). Selective listening of concurrent auditory stimuli: an event-related potential study. *Hearing Research,* 268, 123-32.

NON-PEER-REVIEWED

Journal articles published

Review article

1. **Miller, S.E** and Rao, A. (2012). Humanitarian Audiology: Overview and Report of an Indian Experience. *Perspectives on Global Issues in Communication Sciences and Related Disorders*, 2, 27-33.