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**Education**

1985 **Ph.D.**, Speech & Hearing Sciences, City University of New York (CUNY) Graduate School, New York, NY

1980-1982 **Doctoral Student**, Experimental Psychology (transferred), Utah State University, Logan, UT

1975 **M.E.D.**, Education of the Deaf, Smith College, Northampton, MA

1974 **B.S.**, Education, with Speech Pathology specialization, West Chester State University, West Chester, PA

**Professional experience**

2015- **Professor and Chair**, Speech, Language, and Hearing Sciences, University of Florida, Gainesville, FL.

2007-2015 **Professor and Director of Research**, Otolaryngology – Head & Neck Surgery, Ohio State University, Columbus, OH.

2005-2015 **Professor**, Speech and Hearing Science, Ohio State University, Columbus, OH.

2002-2005 **Director**, Division of Exemplary Services, Center for Persons with Disabilities, Utah State University, Logan, UT.

2002-2005 **Professor**, Dept. of Communicative Disorders, Utah State University, Logan, UT.

1999-2002 **Professor**, Dept. of Otolaryngology and Human Communication, Creighton University School of Medicine, Omaha, NE.

1993-99 **Associate Professor**, same as above.

1993-2002 **Staff Scientist**, Boys Town National Research Hospital, Omaha, NE.

1993-2002 **Adjunct Faculty**, Dept. of Special Education and Communication Disorders, University of Nebraska at Omaha, Omaha, NE.

1991-2002 **Fellow** of the Graduate School of the University of Nebraska (systemwide appointment).

1990-93 **Associate Professor**, Dept. of Special Education and Communication Disorders, University of Nebraska at Omaha, Omaha, NE.

1990 **Research Associate**, Haskins Laboratories, New Haven, CT.

- 1987-90 **Staff Scientist**, Boys Town National Research Hospital, Omaha, NE.
- 1987-90 **Assistant Professor**, Dept. of Otolaryngology and Human Communication, Creighton Univ. School of Medicine, Omaha, NE.
- 1985-87 **NIH Postdoctoral Fellow**, Haskins Laboratories, New Haven, CT.
- 1983-85 **Research Assistant**, CUNY Graduate School, New York, NY. & Haskins Laboratories, New Haven, CT.
- 1982-83 **Project Coordinator**, CUNY Graduate School, New York, NY. Coordinated project providing inservice training for teachers of the deaf and speech pathologists serving the deaf.
- 1980-82 **Teaching Assistant**, Utah State Univ., Logan, UT. Assisted with graduate courses in Statistics, Speech of the Hearing Impaired, Evaluation in Educational Audiology, and Programming for the Young Hearing-Impaired Child.
- 1979-80 **Speech Coordinator**, Learning Center for Deaf Children, Framingham, MA. Coordinated the speech programs for preschool and upper school children.
- 1978-79 **Speech Coordinator**, Beverly School for the Deaf, Beverly, MA. Coordinated speech programs for the entire school.
- 1976-78 **Preschool Teacher**, Montreal Oral School for the Deaf, Montreal, Quebec.  
**Preschool speech and language specialist** (one year). Provided individual speech and language services for the children, and supervised speech and language teaching that took place in the classroom.  
**Kindergarten teacher** (one year). Classroom teacher.  
**Clinical instructor** for McGill Univ. (both years). Supervised student clinicians.
- 1975-76 **Middle School Teacher**, Clarke School for the Deaf, Northampton, MA. Classroom language teacher. Teacher-in-charge of middle school dormitory. Teacher in an experimental class designed to improve listening skills of adolescent deaf students.

### University teaching experience

- 1976-78 McGill University, Department of Human Communication, Montreal, Quebec. Taught as a clinical instructor, teaching graduate students in speech-pathology, audiology, and aural habilitation.
- 1980-82 Utah State University, Department of Communicative Disorders, Logan, UT. Taught graduate courses on evaluation and intervention with hearing-impaired children. Also assisted with graduate courses in statistics.
- 1982-83 City University of New York, Ph.D. Program in Speech and Hearing Sciences, New York, NY. Coordinated a program funded by the Department of Education. The position involved visiting schools for the deaf throughout the northeast United States to provide inservice workshops on teaching speech to hearing-impaired children.
- 1989-90 Boys Town National Research Hospital, Omaha, NE. Sponsored a postdoctoral fellow in the area of language development: Liz Pemberton.

- 1991 University of Nebraska at Omaha, Department of Special Education and Communication Disorders, Omaha, NE. Taught a graduate course titled Current Issues in Speech Development.
- 1992 Utah State University, Department of Communicative Disorders, Logan, UT. Taught as a visiting faculty member in the Fifteenth Annual Summer Institute for the Management of Communicative Disorders.
- 1993-2002 Boys Town National Research Hospital, Omaha, NE. Sponsored interns and taught in the Summer Program for Minority and Deaf College Students.
- 1995-96 Boys Town National Research Hospital, Omaha, NE. Sponsored a postdoctoral fellow in the area of speech perception: Court Crowther.
- 1998-99 Boys Town National Research Hospital, Omaha, NE. Sponsored a graduate research fellow in the Program for Graduate Minority Training: Jennifer Tolbert.
- 2002-2005 Utah State University Psychology program, Logan, UT. Faculty in the Research and Evaluation Methods program.
- 2003-2005 Utah State University, Logan, UT. Sponsored a postdoctoral fellow in the area of speech development: Joanna Lowenstein.
- 2005 Ohio State University. Courses in speech and language. Sponsored a postdoctoral fellow; supervising graduate students.

## Grants

### Active:

Principal Investigator, NIDCD Individual Grant (R01): "Spoken Language in Adolescents with Hearing Loss." 3/1/17-2/28/20.

### Previous:

Principal Investigator, NIDCD Individual Grant (R01): "The ontogeny of segmental speech organization." 7/1/94-6/30/2017.

Principal Investigator, NIDCD Individual Grant (R01): "Early development of children with hearing loss." 9/1/03-2/28/2016. Principal Investigator, NIDCD First Award (R29): "The ontogeny of segmental speech organization." 12/1/88-6/30/94.

Principal Investigator, NIDCD Research and Training Center Grant (P60): "Center for Hearing Loss in Children, Project IV: Linguistic experience and speech perception in children." 9/1/95-8/31/00.

Co-Investigator, NIDCD Research and Training Center Grant (P60): "Center for Hearing Loss in Children, Project II: Objective fitting strategies for nonlinear hearing aids." Patricia G. Stelmachowicz, Ph.D., Principal Investigator. 9/1/95-8/31/00.

Co-Investigator, NIDCD Research and Training Center Grant (P60): "Center for Hearing Loss in Children, Project IV: Articulation and phonation of children with hearing loss." Maureen B. Higgins, Ph.D., Principal Investigator. 9/1/95-8/31/00.

### **Awards and honors**

Graduated magna cum laude, West Chester State University, 1974

Received Mary E. Numbers Fellowship, Clarke School for the Deaf, 1974-75

Received NIH Postdoctoral Fellowship, Haskins Laboratories, 1985-87

Received Editors' Award (Speech), Journal of Speech and Hearing Research, 1989

Designated as Fellow of the University of Nebraska Graduate Faculty, 1991

Received Editors' Award (Hearing), Journal of Speech and Hearing Research, 1996

Elected Fellow of the Acoustical Society of America, 2009

Received Editors' Award (Hearing), Journal of Speech and Hearing Research, 2013

### **Professional service – national**

Associate Editor: *The International Journal of Audiology*, 2011-present; *Journal of Speech, Language and Hearing Research: Speech*, 1997-1998; guest for all areas, 2010-present; *Volta Review*, 2002-2005

Editorial consultant for *Journal of Speech, Language and Hearing Research (both Speech and Hearing sections)*, *Perception and Psychophysics*, *Journal of the Acoustical Society of America*, *Journal of Phonetics*, *Journal of Memory and Language*, *Journal of Experimental Child Psychology*, *Language, Speech and Hearing Services in Schools*, *Applied Psycholinguistics*, *Journal of Experimental Psychology (General, Human Perception and Performance, Learning, Memory, and Cognition)*, *Developmental Medicine and Child Neurology*, *Journal of the Association for Research in Otolaryngology*, *Phonetica*, *The International Journal of Audiology*, *Developmental Science*, *Pediatric Laryngoscope*, *Child Development*

Member of the Acoustical Society Technical Committee on Speech Communication (1992-2000)

Member of the NIDCD committee for the review of small grant proposals (June 1991, February 1992, June 1992, November 1993; chair, March 2007; October, 2007; June, 2008)

Member, NIH Sensory Disorders and Language study section (1994-1996)

Ad hoc reviewer for NIH study sections on a regular basis (1996-present)

Chair of organizing committee, Special session in audiology, *Evidence for a neurological basis of central auditory processing disorders*, American Speech-Language-Hearing Convention (November, 2003)

Member of organizing committee, Hearing Loss in Children: Rehabilitation and Education Issues, American Speech-Language-Hearing Convention (November, 2005)

Member of speech science organizing committee, American Speech-Language-Hearing Convention (November, 2007)

Topic coordinator in the area of Rehabilitation of Infants and Children with Hearing Loss for American Speech-Language-Hearing Convention (November, 2010).

Invited speaker for special session on links between literacy and auditory development, American Speech-Language-Hearing Convention (November, 2010).

Member of the Academic Affairs Board, American Speech-Language-Hearing Association (2013-present)

Member of American Speech-Language-Hearing Association review panel on Grant Review and Reviewer Training (July, 2014)

Member of Pathways Mentoring Program at American Speech-Language-Hearing Association (June, 2015)

Member of Sigma Xi Research Honor Society (continuous)

### **Professional affiliations**

Acoustical Society of America; American Speech-Language-Hearing Association, Association for Research in Otolaryngology

### **Professional service – local**

Member, Boys Town National Research Hospital Internal Review Board (1993-1996).

Chair, Boys Town National Research Hospital Internal Review Board (1995-1996).

Member of Advisory Committee for Children's House Early Childhood Center, Utah State University (2002-2004).

Member of Promotions and Tenure committee, Shirley Leew (Communicative Disorders and Deaf Education) Utah State University (2002-2004).

Member of Promotions and Tenure committee, Peter Golato (Language, Philosophy and Speech Communication) Utah State University (2004-present).

Organized workshop on Early Intervention for Children with Hearing Loss (November, 2004)

Member of graduate studies committee, Ohio State University (2005-2007)

Member of curriculum committee, College of Social and Behavioral Sciences, Ohio State University (2005-2007).

Member of board of directors, Auditory Oral Children's Center, Dublin, Ohio (2005-2007).

Member of task force charged with developing a proposal to increase the number of women in leadership positions within the College of Medicine at the Ohio State University (2010-2015).

### **Published papers**

**Nittrouer, S.** & Cheney, C. (1984). Operant techniques used in stuttering therapy: A review. *J. Fluency Disord.* **9**, 169-190.

**Nittrouer, S.** & Hochberg, I. (1985). Speech instruction for deaf children: A communication-based approach. *Am. Ann. Deaf* **130**, 491-495.

**Nittrouer, S.** (1986). A reply to Adams' comment. *J. Fluency Disorders* **11**, 91-92.

**Nittrouer, S.** & Studdert-Kennedy, M. (1986). The stop-glide distinction: Acoustic analysis and perceptual effect of variation in syllable amplitude envelope for initial /b/ and /w/. *J. Acoust. Soc. Am.* **80**, 1026-1029.

- Nittrouer, S.** (1987). Review of *Precursors of Early Speech: Proceedings of an Int'l Symposium held at the Wenner-Gren Center, Stockholm, Sweden, Sept. 19-22, 1984*. **Lang. Speech** **30**, 83-92.
- Nittrouer, S.** & Studdert-Kennedy, M. (1987). The role of coarticulatory effects on the perception of fricatives by children and adults. **J. Speech Hear. Res.** **30**, 319-329.
- Boothroyd, A. & **Nittrouer, S.** (1988). Mathematical treatment of context effects in speech perception. **J. Acoust. Soc. Am.** **84**, 101-114.
- McGowan, R.S. & **Nittrouer, S.** (1988). Differences in fricative production between children and adults: Evidence from an acoustic analysis of /ʃ/ and /s/. **J. Acoust. Soc. Am.** **83**, 229-232.
- Nittrouer, S.**, Munhall, K., Kelso, J.A.S., Tuller, B. & Harris, K.S. (1988). Patterns of interarticulator phasing and their relation to linguistic structure. **J. Acoust. Soc. Am.** **84**, 1653-1661.
- Nittrouer, S.**, Studdert-Kennedy, M. & McGowan, R.S. (1989). The emergence of phonetic segments: Evidence from the spectral structure of fricative-vowel syllables spoken by children and adults. **J. Speech Hear. Res.** **32**, 120-132. [Best Paper Award for Speech, American Speech-Language-Hearing Association]
- Nittrouer, S.** & Whalen, D.H. (1989). The perceptual effects of child-adult differences in fricative-vowel coarticulation. **J. Acoust. Soc. Am.** **86**, 1266-1276.
- Nittrouer, S.** & Boothroyd, A. (1990). Context effects in phoneme and word recognition by young children and older adults. **J. Acoust. Soc. Am.** **87**, 2705-2715.
- Nittrouer, S.**, McGowan, R.S., Milenkovic, P.H. & Beehler, D. (1990). Acoustic measurements of men's and women's voices: A study of context effects and covariation. **J. Speech Hear. Res.** **33**, 761-775.
- Nittrouer, S.** (1991). Phase relations of jaw and tongue tip gestures in the production of VCV utterances. **J. Acoust. Soc. Am.** **90**, 1806-1815.
- Nittrouer, S.** (1992). Age-related differences in perceptual effects of formant transitions within syllables and across syllable boundaries. **J. Phonet.** **20**, 351-382.
- Nittrouer, S.** (1992). Reply to Garrett and Healey. **J. Speech Hear. Res.** **35**, 96-98.
- Nittrouer, S.** (1993). The emergence of mature gestural patterns is not uniform: Evidence from an acoustic study. **J. Speech Hear. Res.** **36**, 959-972.
- Nelson, P.B., **Nittrouer, S.** & Norton, S.J. (1995). "Say-stay" identification and psychoacoustics performance of hearing-impaired listeners. **J. Acoust. Soc. Am.** **97**, 1830-1838.
- Nittrouer, S.** (1995). Children learn separate aspects of speech production at different rates: Evidence from spectral moments. **J. Acoust. Soc. Am.** **97**, 520-530.
- Stelmachowicz, P.G., Kopun, J., Mace, A., Lewis, D.E. & **Nittrouer, S.** (1995). The perception of amplified speech by listeners with hearing loss: Acoustic correlates. **J. Acoust. Soc. Am.** **98**, 1388-1399.
- Nittrouer, S.** (1996). Discriminability and perceptual weighting of some acoustic cues to speech perception by three-year-olds. **J. Speech Hear. Res.** **39**, 278-297. [Best Paper Award for Hearing, American Speech-Language-Hearing Association]

- Nittrouer, S.** (1996). The relation between speech perception and phonemic awareness: Evidence from low-SES children and children with chronic OM. *J. Speech Hear. Res.* **39**, 1059-1070.
- Nittrouer, S.,** Studdert-Kennedy, M., Neely, S.T. (1996). How children learn to organize their speech gestures: Further evidence from fricative-vowel syllables. *J. Speech Hear. Res.* **39**, 379-389.
- Nittrouer, S. & Miller, M.E.** (1997). Developmental weighting shifts for noise components of fricative-vowel syllables. *J. Acoust. Soc. Am.* **102**, 572-580.
- Nittrouer, S. & Miller, M.E.** (1997). Predicting developmental shifts in perceptual weighting schemes. *J. Acoust. Soc. Am.* **101**, 2253-2266.
- Nittrouer, S. & Crowther, C.S.** (1998). Examining the role of auditory sensitivity in the developmental weighting shift. *J. Speech Lang. Hear. Res.* **41**, 809-818.
- Nittrouer, S.,** Crowther, C.S. & Miller, M.E. (1998). The relative weighting of acoustic properties in the perception of [s]+stop clusters by children and adults. *Percept. Psychophys.* **60**, 51-64.
- Nittrouer, S.** (1999). Chronic OME hinders normal language development. *Special Interest Divisions (#1 and #9)*, American Speech-Language-Hearing Association.
- Nittrouer, S.** (1999). Do temporal processing deficits cause phonological processing problems? *J. Speech Lang. Hear. Res.* **42**, 925-942.
- Nittrouer, S. & Miller, M.E.** (1999). The development of phonemic coding strategies for serial recall. *Appl. Psycholing.* **20**, 563-588.
- Nittrouer, S.,** Miller, M.E., Crowther, C.S. & Manhart, M.J. (2000). The effect of segmental order on fricative labeling by children and adults. *Percept. Psychophys.* **62**, 266-284.
- Nittrouer, S.** (2001) Challenging the notion of innate phonetic boundaries. *J. Acoust. Soc. Am.* **110**, 1581-1597.
- Nittrouer, S. & Burton, L.** (2001) The role of early language experience in the development of speech perception and language processing abilities in children with hearing loss. *Volta Review* **103**, 5-37.
- Nittrouer, S., & Crowther, C.S.** (2001). Coherence in children's speech perception. *J. Acoust. Soc. Am.* **110**, 2129-2140.
- Nittrouer, S.** (2002) A reply to "Innate phonetic boundaries revisited," by Aslin, Werker, and Morgan. *J. Acoust. Soc. Am.* **112**, 1261-1264.
- Nittrouer, S.** (2002). From ear to cortex: A perspective on what clinicians need to understand about speech perception and language processing. *Lang., Speech, and Hear. Services in Schools* **33**, 237-251.
- Nittrouer, S.** (2002). Learning to perceive speech: How fricative perception changes, and how it stays the same. *J. Acoust. Soc. Am.* **112**, 711-719.
- McGowan, R.S., **Nittrouer, S.,** & Manning, C. (2004). Development of [j] in young, Midwestern, American children. *J. Acoust. Soc. Am.* **115**, 871-884.
- Nittrouer, S.** (2004). The role of temporal and dynamic signal components in the perception of syllable-final stop voicing by children and adults. *J. Acoust. Soc. Am.* **115**, 1777-1790.

- Nittrouer, S.** (2005). Age-related differences in weighting and masking of two cues to word-final stop voicing in noise. *J. Acoust. Soc. Am.* **118**, 1072-1088.
- Nittrouer, S.** & Burton, L. (2005). The role of early language experience in the development of speech perception and phonological processing abilities: Evidence from 5-year-olds with histories of otitis media with effusion and low socioeconomic status. *J. Comm. Dis.* **38**, 29-63.
- Nittrouer, S.**, Estee, S., Lowenstein, J.H., & Smith, J. (2005). The emergence of mature gestural patterns in the production of voiceless and voiced word-final stops. *J. Acoust. Soc. Am.* **117**, 351-364.
- Nittrouer, S.** (2006) Children hear the forest. *J. Acoust. Soc. Am.* **120**, 1799-1802.
- Nittrouer, S.**, & Lowenstein, J.H. (2007). Children's weighting strategies for word-final stop voicing are not explained by auditory capacities. *J. Speech Lang. Hear. Res.* **50**, 58-73.
- Nittrouer, S.** (2007). Dynamic spectral structure specifies vowels for children and adults. *J. Acoust. Soc. Am.* **122**, 2328-2339.
- Lowenstein, J.H., & **Nittrouer, S.** (2008). Patterns of acquisition of native voice onset time in English-learning children. *J. Acoust. Soc. Am.* **124**, 1180-1191.
- McGowan, R. S., **Nittrouer, S.**, & Chenausky, K. (2008). Speech production of twelve-month-old children with and without hearing loss. *J. Speech Lang. Hear. Res.* **51**, 879-888.
- Nittrouer, S.** (2008). Outcomes for children with HL: Effects of age of ID, sign support, and auditory prosthesis. *Perspectives on Hearing and Hearing Disorders in Childhood* **18**, 74-82
- Nittrouer, S.**, & Lowenstein, J.H. (2008). Spectral structure across the syllable specifies final-stop voicing for adults and children alike. *J. Acoust. Soc. Am.* **123**, 377-385.
- Nittrouer, S.**, & Lowenstein, J.H. (2009). Does harmonicity explain children's cue weighting of fricative-vowel syllables? *J. Acoust. Soc. Am.* **125**, 1679-1692.
- Nittrouer, S.**, Lowenstein, J.H., & Packer, R. (2009). Children discover the spectral skeletons in their native language before the amplitude envelopes. *J. Exp. Psych.: Human Percep. and Perf.* **35**, 1245-1253.
- Nittrouer, S.** & Chapman, C. (2009). The effects of bilateral electric and bimodal electric-acoustic stimulation on language development. *Trends in Amplification* **13**, 190-205.
- Nittrouer, S.** & Lowenstein, J. H. (2010). Learning to perceptually organize speech signals in native fashion. *J. Acoust. Soc. Am.* **127**, 1624-1635. DOI: 10.1121/1.3298435
- Nittrouer, S.** & Pennington, B.F. (2010). New approaches to the study of childhood language disorders. *Current Directions in Psychological Science* **19**, 308-313.
- Nittrouer, S.**, Shune, S., & Lowenstein, J.H. (2011). What is the deficit in phonological processing deficits: Auditory sensitivity, masking, or object formation? *Journal of Experimental Child Psychol.* **108**, 762-785.
- Johnson, E.P., Pennington, B.F., Lowenstein, J.H., & **Nittrouer, S.** (2011). Sensitivity to structure in the speech signal by children with speech sound disorder and reading disability. *Journal of Communication Disorders.* **44**, 294-314.
- Nittrouer, S.** & Tarr, E. (2011). Coherence masking protection for speech signals in children and adults. *Atten. Percept. Psychophys.* **73**, 2606-2623.



- Tarr, E. & **Nittrouer, S.** (2011). Coherence masking protection for mid-frequency formants by adults and children. *J. Acoust. Soc. Am.* **130**, EL290-EL296.
- Nittrouer, S.** (2012). A new perspective on developmental language problems: Perceptual organization deficits. *Perspective on Language Learning & Education*, **19**, 87-97.
- Nittrouer, S.**, Caldwell, A., & Holloman, C. (2012). Measuring what matters: Effectively predicting language and literacy in children with cochlear implants. *Int. J. of Pediatric Otorhinolaryng.* **76**, 1148-1158.
- Nittrouer, S.**, Caldwell, A., Lowenstein, J. H., Tarr, E., & Holloman, C. (2012). Emergent literacy skills in kindergartners with cochlear implants. *Ear & Hearing* **33**, 683-697.
- Lowenstein, J.H., **Nittrouer, S.**, & Tarr, E. (2012). Children weight dynamic spectral structure more than adults: Evidence from equivalent signals. *J. Acoust. Soc. Am.* **132**, EL443-EL449. DOI: 10.1121/1.4763554
- Caldwell, A. & **Nittrouer, S.** (2013). Speech perception in noise by children with cochlear implants. *J. Speech Lang. Hear. Res.* **56**, 13-30. [Best Paper Award for Hearing, American Speech-Language-Hearing Association]
- Jung, T.T.K., Alper, C.M., Hellstrom, S.O., Hunter, L.L., Casselbrant, M.L., Groth, A. Kemaloglu, Y.K., Kim, S.G., Lim, D., **Nittrouer, S.**, Park, K.H., Sabo, D., & Spratley, J. (2013). Panel 8: Recent Advances in Complications and Sequelae of Otitis Media. *Otolaryngol Head Neck Surg.* **148**:E122-E143. DOI: 10.1177/0194599812467425.
- Nittrouer, S.** & Lowenstein, J.H. (2013). Perceptual organization of speech signals by children with and without dyslexia. *Res. Dev. Disabil.* **34**, 2304-2325. DOI: 10.1016/j.ridd.2013.04.018
- Nittrouer, S.** Lowenstein, J.H., & Tarr, E. (2013). Amplitude rise time does not cue the /ba/-/wa/ contrast for adults or children. *J. Speech Lang. Hear. Res.* **56**, 427-440. DOI:10.1044/1092-4388(2012/12-0075)
- Tarr., E. & **Nittrouer, S.** (2013). Explaining coherence in coherence masking protection. *J. Acoust. Soc. Am.* **133**, 4218-4231. DOI: 10.1121/1.4802638
- Nittrouer, S.**, Caldwell-Tarr, A., Tarr, E., Lowenstein, J.H., & Moberly, A.C. (2013). Improving speech-in-noise recognition for children with hearing loss: Potential effects of language abilities, binaural summation, and head shadow. *Int. J. of Audiology*, **52**, 513-525. DOI: 10.3109/14992027.2013
- Nittrouer, S.**, Caldwell-Tarr, A., & Lowenstein, J.H. (2013). Working memory in children with cochlear implants: Problems are with storage, not processing. *Int. J. of Pediatric Otorhinolaryng.* **77**, 1886-1898. DOI: 10.1016/j.ijporl.2013.09.001
- Moberly, A. C., Welling, D. B., & **Nittrouer, S.** (2013). Detecting soft failures in pediatric cochlear implants: relating behavior to language outcomes. *Otology & Neurotology* **34**, 1648-1655. DOI: 10.1097/MAO.0b013e3182a0036c
- McGowan, R. W., McGowan, R. S., Denny, M., & **Nittrouer, S.** (2014). A longitudinal study of very young children's vowel production. *J. Speech Lang. Hear. Res.* **57**, 1-15. DOI: 10.1044/1092-4388(2013/12-0112)

- Nittrouer, S.** & Lowenstein, J.H. (2014). Separating the effects of acoustic and phonetic factors in linguistic processing by adults and children. *Appl. Psycholinguist.* **35**, 333-370. DOI: 10.1017/S0142716412000410
- Nittrouer, S.**, Tarr, E., Bolster, V., Caldwell-Tarr, A., Moberly, A.C., & Lowenstein, J.H. (2014). Very low-frequency signals support perceptual organization of implant-simulated speech for adults and children. *Int. J. Audiol.* **53**, 270-284. DOI: 10.3109/14992027.2013.871649
- Moberly, A. C., Lowenstein, J.H., Tarr, E., Caldwell-Tarr, A., Welling, D. B., Shahin, A. J., & **Nittrouer, S.** (2014). Do adults with cochlear implants rely on different acoustic cues for phoneme perception than adults with normal hearing? *J. Speech Lang. Hear. Res.* **57**, 566-582. DOI: 10.1044/2014\_JSLHR-H-12-0323
- Nittrouer, S.** & Lowenstein, J.H. (2014). Dynamic spectral structure specifies vowels for adults and children. *Language & Speech* **57**, 487-512. DOI: 10.1177/0023830913508075
- Nittrouer, S.**, Sansom, E., Low, K. Rice, C., & Caldwell-Tarr, A. (2014). Language structures used by kindergartners with cochlear implants: Relationship to phonological awareness, lexical knowledge and hearing loss. *Ear and Hearing* **35**, 506-518. DOI: 10.1097/AUD.0000000000000051
- Nittrouer, S.**, Caldwell-Tarr, A., Sansom, E., Twersky, J., & Lowenstein, J. (2014). Nonword repetition in children with cochlear implants: A potential clinical marker of poor language acquisition. *Am. J. Speech Lang. Pathol.* **23**, 679-695. DOI: 10.1044/2014\_AJSLP-14-0040
- Nittrouer, S.**, Caldwell-Tarr, A., Moberly, A. C., & Lowenstein, J. H. (2014). Perceptual weighting strategies of children with cochlear implants and normal hearing. *J. Comm. Disord.* **52**, 111-133. DOI: 10.1016/j.jcomdis.2014.09.003
- Nittrouer, S.**, Lowenstein, J. H., Wucinich, T. & Tarr, E. (2014). Benefits of preserving stationary and time-varying formant structure in alternative representations of speech: Implications for cochlear implants. *J. Acoust. Soc. Am.* **136**, 1845-1856. DOI:10.1121/1.4895698
- Nittrouer, S.**, Tarr, E., Wucinich, T., Moberly, A. C., & Lowenstein, J. H. (2015). Measuring the effects of spectral smearing and enhancement on speech recognition in noise for adults and children. *J. Acoust. Soc. Am.* **137**, 2004-2014. DOI: 10.1121/1.4916203
- Lowenstein, J. H. & **Nittrouer, S.** (2015). All cues are not created equal: The case for facilitating the acquisition of typical weighting strategies in children with hearing loss. *J. Speech Lang. Hear. Res.* **58**, 466-80. DOI: 10.1044/2015\_JSLHR-H-14-0254.
- Nittrouer, S.** & Lowenstein, J. H. (2015). Weighting of acoustic cues to a manner distinction by children with and without hearing loss. *J. Speech Lang. Hear. Res.* **58**, 1077-1092. DOI: 10.1044/2015\_JSLHR-H-14-0263
- Nittrouer, S.**, Kuess, J., & Lowenstein, J. H. (2015). Speech perception of sine-wave signals by children with cochlear implants. *J. Acoust. Soc. Am.* **137**, 2811-2822. DOI: 10.1121/1.4919316
- Moberly, A.C., Lowenstein, J. H., & **Nittrouer, S.** (2016). Word recognition variability with cochlear implants: “perceptual attention” versus “auditory sensitivity”. *Ear Hear.*, **37**, 14-26. DOI: 10.1097/AUD.0000000000000204.

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### Papers Under Review or In Press

- Nittrouer, S.**, Krieg, L. M., & Lowenstein, J. H. Speech Recognition in Noise by Children with and without Dyslexia: How is it Related to Reading? *Res. Dev. Disabil.* (Under review).

### Books

- Nittrouer, S.** (2010). *Early Development of Children with Hearing Loss*. Plural Publishing (San Diego).

### Chapters

- Nittrouer, S.** (2002). Learning to apprehend phonetic structure from the speech signal: The hows and whys. In *Investigations in Clinical Phonetics and Linguistics*, F. Windsor, M. L. Kelly, and N. Hewlett (eds.), Lawrence Erlbaum (London).
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- Lowenstein, J.H., & **Nittrouer, S.** (2008). Getting phonetic structure from an aphonetic signal. *J. Acoust. Soc. Am.* **124**, 2458.
- McGowan, R. S. & **Nittrouer, S.**, (2008). Children's articulatory constraints inferred from acoustic output: How some speech-sound errors arise. *J. Acoust. Soc. Am.* **124**, 2555.
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- McGowan, R.S., Denny, M., Jackson, M. T., & **Nittrouer, S.** (2011). Alveolar and velar stop releases during speech development. *J. Acoust. Soc. Am.* **129**, 2597.

- Nittrouer, S.** (2011). Developmental changes in perceptual weighting and organization of speech. *J. Acoust. Soc. Am.* **129**, 2414.
- Tarr, E.W. & **Nittrouer, S.** (2011). Why diverse spectral structure coheres for children. *J. Acoust. Soc. Am.* **129**, 2423.
- Lowenstein, J.H. & **Nittrouer, S.** (2011). Dynamic spectral structure really does support vowel recognition. *J. Acoust. Soc. Am.* **130**, 2375.
- Nittrouer, S.**, Caldwell-Tarr, A., & Lowenstein, J. H. (2014). What explains perceptual weighting strategies of children with CIs: Auditory sensitivity or language experience? *J. Acoust. Soc. Am.* **135**, 2228.
- Lowenstein, J.H., Tarr, E., & **Nittrouer, S.** (2014). Effects of spectral smearing on sentence recognition by adults and children. *J. Acoust. Soc. Am.* **136**, 2262.
- Nittrouer, S.** & Lowenstein, J. H. (2015). Working memory problems of the elderly arise in the central processor, not the phonological loop. *J. Acoust. Soc. Am.* **138**, 1924.

### Other posters and presentations

- Nittrouer, S.** (2000). Learning to apprehend phonetic structure from the speech signal: The hows and whys. Keynote address presented at the VIIIth Meeting of the International Clinical Phonetics and Linguistics Association, Edinburgh, Scotland. August. (INVITED)
- Nittrouer, S.** (2000). How language problems arise from early otitis media with effusion. Presented at the New York State Speech-Language-Hearing Association Meeting, Saratoga Springs, NY. April. (INVITED)
- Nittrouer, S.** (2000). The scientific basis of Fast ForWord: Granite or shifting sands. Presented at the New York State Speech-Language-Hearing Association Meeting, Saratoga Springs, NY. April. (INVITED)
- Nittrouer, S.** & Burton, L. T. (2001). Success in the mainstream does not require speech perception using traditional cues, but does require access to phonological structure. Presented at the Central Institute of the Deaf Conference, New Frontiers in the Amelioration of Hearing Loss, St. Louis, MO. March.
- Nittrouer, S.** (2002). Early OME: Implications for speech perception and phonological processing. Presented at the Otitis Media and Language Learning Sequelae: Current Research and Controversies Conference, Arlington, VA. May. (INVITED)
- Nittrouer, S.** (2004). Early development of children with hearing loss. Presented at the national meeting of Early Hearing Detection and Intervention, Washington, D.C. February.
- Nittrouer, S.** (2004). Crossing the research/clinical divide. Presented at the AGBell Summit on Deafness. Washington, D.C. February. (INVITED)
- Nittrouer, S.** (2004). From Ears to Cortex and Back Again: The Co-dependent Relationship Between Speech Perception and Language. Presented at the Hearing Research Foundation Conference. Providence, RI. May. (INVITED)
- Lowenstein, J.H. & **Nittrouer, S.** (2005). VOT development in English-learning infants. Linguistics Society of America annual meeting, San Francisco, CA. January.

- Nittrouer, S.** (2005). The perceptual organization of speech signals: Implications for speech perception by children with hearing loss. Special Session: Pediatric Hearing Issues - Speech Perception and Rehabilitation, American Auditory Society, Scottsdale, AZ. March. (INVITED)
- Nittrouer, S.** (2005). Discovering the perceptual organization of speech signals: Implications for children with cochlear implants. Special Session: Perceptual Organization of Speech, Conference on Implantable Auditory Prostheses, Asilomar, CA. August. (INVITED)
- Nittrouer, S.** (2005). Supporting development of spoken language in children with hearing loss. American Speech, Language, and Hearing Association, San Diego, CA. November. (INVITED)
- Nittrouer, S.** (2006). Early development of children with hearing loss: Outcomes at 18 months. A.G. Bell Association for the Deaf, Pittsburgh, PA. June.
- Nittrouer, S.** (2006). A brief history of the science behind our intervention. AG Bell Association for the Deaf, Ohio Chapter. Columbus, OH. November. (INVITED)
- Nittrouer, S.** (2007). A brief history of science: What lies beneath our intervention. Rhode Island Hearing Assessment Program 13<sup>th</sup> Annual Seminar, Providence, RI. March (INVITED)
- Nittrouer, S.** (2007). The science of intervention across the ages. Rhode Island Hearing Assessment Program 13<sup>th</sup> Annual Seminar, Providence, RI. March (INVITED)
- Nittrouer, S.** (2008). Outcomes for children with Hearing Loss. National meeting of the Early Hearing Detection and Intervention Association. New Orleans, LA. February.
- Nittrouer, S.** (2008). The whats and whens of cochlear implantation. American Auditory Society Meeting. Scottsdale, AZ. March.
- Nittrouer, S.** (2008). Outcomes for children with Hearing Loss. National Options Schools meeting. Indianapolis, IN. May.
- Nittrouer, S.** (2008). Auditory prosthetics and language development: What works best. Nationwide Children's Hospital, Columbus, OH. May. (INVITED)
- Nittrouer, S.** (2008). Pediatric implantation: What babies need. Ohio State University Medical Center, Columbus, OH. June. (INVITED)
- Sefton, S. & **Nittrouer, S.** (2008). Speech perception by children with SLI: Auditory sensitivities and masking. American Speech, Language, and Hearing Association, Chicago, IL. November.
- Nittrouer, S.** (2009). Signal Properties Needed for Language Acquisition. Convergence of CI and HA technology workshop. University of Miami School of Medicine, January. (INVITED)
- Nittrouer, S.** (2009). The past, present, and future of research into human speech perception. Association for Research in Otolaryngology. Baltimore, MD. February. (INVITED)
- Holloman, C., **Nittrouer, S.**, Chapman, C., & Welling, D.B. (2009). Growth of a latent language measure in children with hearing loss. American Academy of Otolaryngology – Head and Neck Surgery. San Diego, CA. October.
- Nittrouer, S.** (2011). Auditory to Literacy Development. Pittsburgh, PA. June. (INVITED)
- Nittrouer, S.** & Tarr, E. (2011). Emergent literacy skills of kindergarten children with cochlear implants. Conference on Implantable Auditory Prostheses, Asilomar, CA. July.

- Nittrouer, S.** (2011). Language and early literacy skills of preschoolers with cochlear implants. Nemours Conference on Cochlear Implants in Children, Wilmington, DE, October. (INVITED)
- Nittrouer, S.** (2012). Developmental changes in perceptual attention and organization for speech: Implications for cochlear implant design. New Ideas in Hearing: Hot Topics in Audiology. Paris, FR, April. (INVITED)
- Moberly, A.C., **Nittrouer, S.**, Shahin, A., & Welling, D.B. (2012). Do cochlear implant users rely on different acoustic cues for phoneme perception than normal-hearing adults? A mismatch negativity study. 12th International Conference on Cochlear Implants and Other Implantable Auditory Technologies, Baltimore, MD, May.
- Nittrouer, S.**, Caldwell, A., & Welling, D. B. (2012). Combining hearing aids with cochlear implants in children: Results and implications for treatment. International Hearing Aid Research Conference, Lake Tahoe, CA, August.
- Nittrouer, S.**, Lowenstein, J., & Caldwell, A. (2013). Children with cochlear implants demonstrate working memory deficits in storage, not processing. Association for Research in Otolaryngology, Baltimore, MD, February.
- Moberly, A.C., Caldwell-Tarr, A., Welling, D.B., & **Nittrouer, S.** (2013). Detecting soft failures in pediatric cochlear implants: Relating behavior to language outcomes. American Neurotology Society Spring meeting, Orlando, FL, April.
- Nittrouer, S.**, Caldwell-Tarr, A., Rice, C., & Lowenstein, J.H. (2013). Speech perception of second-grade children with cochlear implants: Comparison to typical children. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July.
- Nittrouer, S.**, Tarr, E., Lowenstein, J., & Bolster, V. (2013). Perceptual benefit of a low-frequency acoustic signal with electric stimulation for children and adults. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July.
- Tarr, E., Krishnamurthy, A., & **Nittrouer, S.** (2013). A pitch-synchronous framework for representing, recovering and modifying temporal structure in speech. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July.
- Moberly, A.C., Lowenstein, J., Tarr, E., Caldwell-Tarr, A., Welling, D.B., Shahin, A.J., & **Nittrouer, S.** (2013). Do cochlear implant users rely on different acoustic cues than normal-hearing adults? A study of cue weighting and salience. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July.
- Nittrouer, S.** (2014). Unveiling the Source of Language Delay for Children with Hearing Aids. International Hearing Aid Research Conference, Lake Tahoe, CA, August.
- Lilley, J., **Nittrouer, S.**, & Bunnell, H. T. (2014). Automating an objective measure of pediatric speech intelligibility. InterSpeech, Singapore, September.
- Nittrouer, S.** & Holloman, C. (2014). Beyond Early Intervention: Supporting Deaf Children through Elementary School. American Speech, Language, and Hearing Association, Orlando, FL, November.
- Moberly, A.C. & **Nittrouer, S.** (2014). Bimodal Stimulation in Infants: Is there a Benefit to Language Development? American Cochlear Implant Alliance meeting, Nashville, TN, December.



- Nittrouer, S.** (2014). Beyond Early Intervention: Supporting Deaf Children through Elementary School. American Cochlear Implant Alliance meeting, Nashville, TN, December.
- Nittrouer, S.** (2015) Beyond Early Intervention: Supporting Deaf Children through Elementary School. Massachusetts Department of Health, Boston, MA, January. (INVITED)
- Nittrouer, S.** (2015). Supporting Language Acquisition Across Childhood. Conference on Controversial Issues in Pediatric Otolaryngology, New York, NY, February. (INVITED)
- Nittrouer, S.** (2015). Beyond Early Intervention: Supporting Deaf Children through Elementary School. Early Hearing Detection and Intervention, Louisville, KY, March. (INVITED)
- Nittrouer, S.** (2015). Language Intervention for Children with Hearing Loss in the Schools: The Whys and Whats. Ohio Speech Language and Hearing Association, Columbus, OH, March. (INVITED)
- Moberly, A.C.& **Nittrouer, S.** (2015). Bimodal Stimulation Provides an Advantage in Language Development for Children with Hearing Loss. Combined Otolaryngology Spring Meetings, American Neurotology Society, Boston, MA, April.
- Moberly, A.C.& **Nittrouer, S.** (2015). Variability in Word Recognition by Adults with Cochlear Implants: The Role of Phonemic Awareness. Combined Otolaryngology Spring Meetings, Triological Society, Boston, MA, April.
- Moberly, A.C., Capretta, N.R., & **Nittrouer, S.** (2015). Speech Recognition and Quality of Life for Adult Cochlear Implant Users. Combined Otolaryngology Spring Meetings, Triological Society, Boston, MA, April.
- Moberly, A.C.& **Nittrouer, S.** (2015). Variability in Word Recognition by Adults with Cochlear Implants: The roles of Perceptual Attention versus Auditory Sensitivity. Acoustical Society of American meeting, Pittsburgh, PA, May.
- Nittrouer, S.** (2015). Impact of Mild-Moderate Conductive Hearing Loss on Speech and Language. International Symposium on Recent Advances in Otitis Media. Washington, DC. June. (INVITED)
- Nittrouer, S.** (2015). Working Memory Problems of the Elderly Arise in the Central Processor, not the Phonological Loop. 6th Aging and Speech Communication Research Conference. Bloomington, IN. October.
- Nittrouer, S.** (2015). Beyond early intervention: How to prepare children for what lies ahead. Ohio School Speech Pathology Educational Audiology Coalition. Columbus, OH. October.
- Nittrouer, S.** (2016). Beyond early intervention: How to prepare children for what lies ahead. Florida Speech-Language-Hearing Association. Orlando, FL. May.
- Nittrouer, S.** (2016). Using the Past to Predict the Future: What Lies Ahead for Educators of the Hearing Impaired. Florida Educators of the Deaf and Hard of Hearing. Daytona Beach, FL. November.
- Nittrouer, S.** (2017). Beyond Early Intervention for Children with Cochlear Implants: Considerations in a New Age. Rochester, MN. April.

### Technical reports

- Nittrouer, S.**, Devan, M.A. & Boothroyd, A. (1976) It's never too late: An auditory approach with hearing-impaired pre-teenagers. *Sensory Aids Research Project, Report #24*. Clarke School for the Deaf, Northampton, MA.
- Crowther, C.S., **Nittrouer, S.** & Batchelder, W.H. (1996). Independence of feature decisions in speech perception. *Institute for Mathematical Behavioral Sciences Technical Report Series MBS 92-26*. University of California at Irvine.

### Doctoral thesis

- Nittrouer, S.** (1985). The role of coarticulation in the perception and production of speech by young children (3 to 7 years). Dissertation, CUNY.

### Dissertation committees

- Nelson, Peggy B. (1991). Relationship between psychoacoustics and speech identification in hearing-impaired listeners. University of Kansas.
- Shapley, Kathy Lynn (2003). The interaction of acoustic and linguistic information in the perception of degraded speech and speech in noise. University of Nebraska.
- McGuire, Grant (2007). Phonetic category learning. Ohio State University.
- Li, Fangfang (2008). The phonetics and phonology of the acquisition of voiceless sibilant fricatives across five languages. Ohio State University.
- Phinney, Erin. (2008). Speech perception in speech sound disorder and reading disability. University of Denver.
- Wong, Pui-san. (2008). Development of lexical tone production in disyllabic words by 2- to 6-year-old Mandarin-speaking children. City University of New York.
- Tarr, Eric. (2013). Processing perceptually important temporal and spectral characteristics of speech. The Ohio State University.

### Thesis committees

- Bresley, M. Ruth (1993). The effect of self-generated learning vs. other-generated learning on the writing productivity of students at risk. University of Nebraska at Omaha.
- Manning, Carol J. (1993). The perceptual weighting of speech-related acoustic cues for 3 & 1/2-year-olds differs from that of adults: Results using natural and synthetic stimuli. University of Nebraska at Omaha (Chair).
- Sefton, Samantha (2007). Speech perception by children with specific language impairments: Auditory sensitivities and masking effects. Ohio State University (Chair).
- Uher, Jennifer (2008). Parental language styles and language outcomes in children with hearing loss. Ohio State University (Chair).
- Tarr, Eric (2010). Formant narrowing using linear predictive coding to improve phonetic perception in children. Ohio State University.