

Matthew B. Winn

Curriculum Vitae

1417 NE 42nd St.
Seattle, WA 98105

mwinn2@uw.edu
(302) 740-7449

EDUCATION

Ph.D.	2011	Hearing and Speech Sciences	University of Maryland College Park
Au.D.	2010	Hearing and Speech Sciences	University of Maryland College Park
B.A.	2005	Psychology, Philosophy, Linguistics minor	University of Delaware

EMPLOYMENT

Assistant Professor Speech & Hearing Sciences, University of Washington
September 2015 – Present

Postdoctoral Researcher Waisman Center, University of Wisconsin
April 2012 – August 2015

Clinical Audiologist Veterans Affairs Med. Ctr. Washington DC
July 2009-February 2012

PROFESSIONAL SUMMARY

I am an audiologist and hearing scientist with training with speech science and linguistics. My research focuses on speech perception, and the ways in which hearing impairment can affect communication at multiple stages of language processing. I focus on cochlear implants, listening effort, speech acoustics and spectral resolution, as well as data visualization. I direct the “Listen Lab”, which focuses on understanding speech perception and the things that make it difficult.

FUNDING

NIH-NIDCD R03 DC014309 (January 2016 – December 2018)

“Measuring listening effort and spectral resolution in cochlear implant patients”

NIH Loan Repayment Program (2013 – present)

PUBLICATIONS

1. **Winn, M.B & Idsardi, W.J.** (2008). Musical evidence regarding trochaic inversion. *Language and Literature*, 17 (4), 335-349.
2. **Winn, M.B., Chatterjee, M., & Idsardi, W.J.** (2012). The use of acoustic cues for phonetic identification: Effects of spectral degradation and electric hearing. *Journal of the Acoustical Society of America*, 131, 1465-1479. doi: 10.1121/1.3672705
3. **Winn, M.B., Chatterjee, M., & Idsardi, W.J.** (2013). The roles of voice onset time and F0 in stop consonant voicing perception: Effects of masking noise and low-pass filtering. *Journal of Speech, Language and Hearing Research*, 56, 1097-1107. Doi: 10.1044/1092-4388(2012/12-0086)
4. **Winn, M.B., Rhone, A.E., Chatterjee, M., & Idsardi, W.J.** (2013). Auditory and visual context effects in phonetic perception by normal-hearing listeners and listeners with cochlear implants. *Frontiers in Psychology: Auditory Cognitive Neuroscience*, 4, article 824, 1-13. doi: 10.3389/fpsyg.2013.00824
5. Chrabaszcz, A.V., **Winn, M.B., Lin, C.Y., & Idsardi, W.J.** (2014). Acoustic Cues to Perception of Word Stress by English, Mandarin and Russian Speakers. *Journal of Speech, Language, and Hearing Research*, 57, 1468-1479. doi:10.1044/2014_JSLHR-L-13-0279
6. **Winn, M.B., Edwards, J.R., and Litovsky, R.Y.** (2015). The impact of auditory spectral resolution on listening effort revealed by pupil dilation. *Ear and Hearing*. 36(4):e153-65. doi: 10.1097/AUD.000000000000145
7. **Winn, M.B. & Litovsky, R.Y.** (2015) Using speech sounds to test functional spectral resolution in listeners with cochlear implants. *Journal of the Acoustical Society of America*, 137, 1430-1442. doi: 10.1121/1.4908308
8. Stilp, C.E., Anderson, P.W., **Winn, M.B.** (2015) Predicting contrast effects following reliable spectral properties in speech perception. *Journal of the Acoustical Society of America*, 137, 3466-3476. doi: 10.1121/1.4921600
9. Ehlers, E., Kan, A., **Winn, M.B., Stoelb, C., Litovsky, R.** (2016). Binaural hearing in children using Gaussian enveloped and transposed tones. *Journal of the Acoustical Society of America*, 139, 1724-1733. doi: 10.1121/1.4945588
10. **Winn, M.B., Won, J.H., Moon, I.J.** (2016). Assessment of spectral and temporal resolution in cochlear implant users using psychoacoustic discrimination and speech cue categorization. *Ear and Hearing*. Doi: 10.1097/AUD.0000000000000328
11. Kong, Y.-Y., **Winn, M.B., Poellmann, K., Donaldson, G.** (2016) Discriminability and perceptual saliency of temporal and spectral cues for final fricative consonant voicing in simulated cochlear-implant and bimodal hearing. *Trends in Hearing*, 20, 1-15. Doi: 10.1177/2331216516652145

12. Reidy, P., Kristensen, K., **Winn**, M., Litovsky, L., Edwards, J. (2016). The acoustics of word-initial fricatives and their effect on word-level intelligibility in children with bilateral cochlear implants. *Ear and Hearing*. Doi: 10.1097/AUD.0000000000000349

13. **Winn**, M., (2016) Rapid release from listening effort resulting from semantic context, and effects of spectral degradation and cochlear implants. *Trends in Hearing*, 20, 1-17. Doi: 10.1177/2331216516669723

PAPERS SUBMITTED / IN PREPARATION

Kapnoula, E., **Winn**, M.B., Kong, E.J., Edwards, J., McMurray, B. Evaluating the sources and functions of gradience in phoneme categorization: An individual differences approach (in revision, *Journal of Experimental Psychology: Human Perception and Performance*)

DiNino, M., Wright, R., **Winn**, M.B., Bierer, J.A. Vowel and consonant confusion patterns resulting from spectral manipulations in vocoded stimuli designed to replicate poor electrode-neuron interfaces in cochlear implants (in revision, *Journal of the Acoustical Society of America*)

Winn, M.B., and Litovsky, R.Y. Reduction of listening effort with bilateral cochlear implants. (in preparation)

Winn, M.B., Kan, A., and Litovsky, R.Y. Temporal dynamics of suprathreshold binaural sensitivity. (in preparation)

PODIUM PRESENTATIONS

Winn, M.B. & Pence, K. (2003). More verbs to come: The developing focus on verbs in parents' speech to infants. Invited talk at Delaware Speech, Language & Hearing Association conference, Wilmington, DE.

Blodgett, A., Bowles, A., Bauman, J., Shamo, J., & **Winn**, M.B. (2007). Same or different: A preliminary acoustic analysis comparing native and non-native speaker production of Vietnamese lexical tones. Podium presentation at the 17th Annual Conference of the Southeast Asian Linguistics Society (SEALS XVII), College Park, MD.

Winn, M.B., Chatterjee, M.C., Idsardi, W.J. (2010). Phonetic cues are weighted differently when spectral resolution is degraded. Invited podium presentation at the Joint Scientific Meeting of the Center for Comparative and Evolutionary Biology of Hearing (C-CEBH) at the Univ. of MD and the National Institute of Deafness and Other Communication Disorders (NIDCD) of the NIH, College Park, MD.

Winn, M.B., Rhone, A.E., Idsardi, W.J. & Chatterjee, M. (2011). The perception of phonetic features and acoustic cues by impaired listeners. Invited podium presentation at the 162nd meeting of the Acoustical Society of America, San Diego, CA.

Winn, M.B., Idsardi, W.J. and Chatterjee, M. (2011). Implications of hearing impairment on phonetic perception. Invited podium presentation at the Joint Scientific Meeting of the Center for Comparative and Evolutionary Biology of Hearing (C-CEBH) at the Univ. of MD

and the National Institute of Deafness and Other Communication Disorders (NIDCD) of the NIH, College Park, MD.

- Winn, M.B., Litovsky, R.Y. (2013).** Duplex perception by listeners with bilateral cochlear implants: A measure of bilateral integration of speech. Podium presentation at the Conference on Implantable Auditory Prostheses, Lake Tahoe, CA.
- Winn, M.B., Rhone, A.E., Idsardi, W.J. & Chatterjee, M. (2013).** Auditory and visual adaptation in cochlear implant speech perception. Podium presentation at the annual meeting of the American Auditory Society, Scottsdale, AZ.
- Winn, M.B., Edwards, J.R., & Litovsky, R.Y. (2013).** The impact of spectral resolution on listening effort revealed by pupil dilation. Podium presentation at the 166st meeting of the Acoustical Society of America, San Francisco, CA.
- Winn, M.B., Litovsky, R.Y. (2013).** Duplex perception by listeners with bilateral cochlear implants: A measure of bilateral integration of speech. Invited podium presentation at the Conference on Implantable Auditory Prostheses, Lake Tahoe, CA.
- Winn, M.B., Edwards, J.R. and Litovsky, R.Y. (2014).** Measurement of spectral resolution and listening effort in people with cochlear implants. Podium presentation at the 167th meeting of the Acoustical Society of America, Providence, RI.
- Winn, M.B. and Litovsky, R.Y. (2014).** Measuring listening effort in CI listeners using pupil dilation. Podium presentation at the 8th International Symposium on Objective Measures in Auditory Implants, Toronto, ON, Canada.
- Winn, M.B. (2014).** Single-sided deafness with a cochlear implant: a unique opportunity to learn about speech perception and the auditory system. Podium presentation at the CRASH Cochlear Implant Research Mini-Conference, Madison, WI.
- Winn, M.B. and Litovsky, R.Y. (2014).** The impact of bilateral cochlear implantation on listening effort revealed through measurements of pupil dilation. Podium presentation accepted for the 2014 American Cochlear Implant Alliance Conference, Nashville, TN.
- Winn, M.B., Buhr-Lawler, M., Kan, A., Jones, H., Litovsky, R., Gubbels, S. (2014).** The impact of adding a contralateral cochlear implant to a normal hearing ear in terms of spatial hearing abilities and listening effort during speech perception. Podium presentation accepted for the 2014 American Cochlear Implant Alliance Conference, Nashville, TN.
- Winn, M.B., Edwards, J.R. and Litovsky, R.Y. (2014).** Measurement of spectral resolution and listening effort in people with cochlear implants. Presentation at the 167th meeting of the Acoustical Society of America, Providence, RI.
- Winn, M.B. and Litovsky, R.Y. (2014).** Measuring listening effort in CI listeners using pupil dilation. Presentation at the 8th International Symposium on Objective Measures in Auditory Implants, Toronto, ON, Canada.
- Winn, M.B. (2014).** Single-sided deafness with a cochlear implant: a unique opportunity to learn about speech perception and the auditory system. Podium presentation at the CRASH Cochlear Implant Research Mini-Conference, Madison, WI.
- Winn, M.B. and Litovsky, R.Y. (2014).** The impact of bilateral cochlear implantation on listening effort revealed through measurements of pupil dilation. Podium presentation accepted for the 2014 American Cochlear Implant Alliance Conference, Nashville, TN.

- Winn, M.B., Buhr-Lawler, M., Kan, A., Jones, H., Litovsky, R., Gubbels, S. (2014).** The impact of adding a contralateral cochlear implant to a normal hearing ear in terms of spatial hearing abilities and listening effort during speech perception. Podium presentation accepted for the 2014 American Cochlear Implant Alliance Conference, Nashville, TN.
- Winn, M.B., Litovsky, R.Y. (2015).** The roles of harmonicity and temporal pitch in the perception of speech in noise: a study of intelligibility and listening effort. Podium presentation at the 38th Annual midwinter meeting of the Association for Research in Otolaryngology.
- Winn, M.B., Edwards, J.R., Litovsky, R.Y. (2015).** The relationship between phonetic cue weighting and listening effort in listeners with cochlear implants. Invited podium presentation at the 169th meeting of the Acoustical Society of America, Pittsburgh, PA.
- Winn, M.B. (2016).** Sensitivity to binaural cues above threshold as revealed by eye movements. Podium presentation at the Acoustical Society of America, Salt Lake City, UT.
- Winn, M.B., (2016).** Objective measures of effort and speech perception in HA users. Podium presentation at the World Congress of Audiology, Vancouver, BC.
- Winn, M.B. (2016).** Looking beyond intelligibility: Tracking peri-stimulus and post-stimulus listening effort using pupillometry. Podium presentation at the Northwest Auditory and Vestibular Research Meeting, Portland, OR.

POSTER PRESENTATIONS

- Winn, M.B., Blodgett, A., Bauman, J., Bowles, A., Charters, L., Rytting, C.A., & Shamoo, J. (2008).** Vietnamese monophthong vowel production by native speakers and American adult learners. "Acoustics '08" the joint meeting of the Acoustical Society of America, the European Acoustics Association, and the Société Française D'Acoustique, Paris, France.
- Blodgett, A., **Winn, M.B.**, Bauman, J., Bowles, A., Charters, L., Rytting, C.A., & Shamoo, J. (2009). Identifying adult learner difficulties in the acquisition of lexical tone. American Association for Applied Linguistics, Denver, CO.
- Winn, M.B., Chatterjee, M.C., Idsardi, W.J. (2010).** Phonetic cues are weighted differently when spectral resolution is degraded. Poster presentation at the annual meeting of the American Auditory Society, Scottsdale, AZ.
- Winn, M.B., Chatterjee, M. (2011).** Modulation of phonetic cue weighting in adverse listening conditions. Presented at 34th MidWinter meeting of the Association for Research in Otolaryngology, Baltimore, MD.
- Rhone, A.E. **Winn, M.B., (2011).** Effects of spectral degradation on contextually-driven shifts in phonetic categorization. Acoustical Society of America. Seattle, WA.
- Winn, M.B., Idsardi, W.J. and Chatterjee, M. (2011).** Divergent patterns of voicing perception in various challenging listening conditions. Acoustical Society of America, Seattle, WA.

- Blodgett, A., Twist, A., Bauman, J., Bowles, A., Fox, M., Luu, P., Rytting, C.A., Marx, J. & **Winn**, M.B. (2011) Northern Vietnamese perception of non-native tones. International Congress of Phonetic Sciences *ICPhS XVII*, Hong Kong.
- Winn**, M.B., Rhone, A.E., Idsardi, W.J. & Chatterjee, M. (2011). Normalization to talker gender and F0: Phonetic category adjustment by cochlear implant users. Conference on Implantable Auditory Prostheses, Asilomar, CA.
- Lin, C., Lukyanenko, A., **Winn**, M.B., Idsardi, W. (2012). Acoustic Cues to Perception of Word Stress by English, Mandarin and Russian Speakers. Boston University Conference on language Development, Boston, MA.
- Winn**, M.B., Litovsky, R.Y. (2013). Assessment of spectral resolution for speech: Implications for cochlear implants. American Auditory Society, Scottsdale, AZ.
- Winn**, M.B., Litovsky, R.Y. (2013). Measuring spectral resolution for speech sounds: Implications for cochlear implants. Conference on Implantable Auditory Prostheses, Lake Tahoe, CA.
- Moon, I.J., Won, J.-H. & **Winn**, M.B. (2014). Assessment of spectral and temporal resolution in cochlear implant users: speech and psychoacoustic approach. MidWinter meeting of the Association for Research in Otolaryngology, San Diego, CA.
- Winn**, M.B., Edwards, J.R., & Litovsky, R.Y. (2014). Listening effort measured via pupil dilation: outcome measure of cochlear implant frequency-electrode allocation adjustment. MidWinter meeting of the Association for Research in Otolaryngology, San Diego, CA.
- Kong, Y.-Y., **Winn**, M.B., and Poellmann, K. (2014). Discriminability and Perceptual Saliency of Acoustic Cues for Final Consonant Voicing in Simulations of Cochlear-Implant and Electric-Acoustic Stimulation. Acoustical Society of America, Providence, RI.
- Winn**, M.B., Misurelli, S.M., Litovsky, R.Y. (2015). The impact of spectral resolution on the efficiency of sentence processing. MidWinter meeting of the Association for Research in Otolaryngology, San Diego, CA.
- Kan, A., **Winn**, M.B., Litovsky, R.Y. (2015) Investigating the ear advantage using pupillometry. MidWinter meeting of the Association for Research in Otolaryngology, San Diego, CA.
- Winn**, M.B., Misurelli, S.M., Litovsky, R.Y. (2015). The impact of spectral resolution on the efficiency of sentence processing. Poster presented at the 38th Annual midwinter meeting of the Association for Research in Otolaryngology.
- Kan, A., **Winn**, M.B., Litovsky, R.Y. (2015) Investigating the ear advantage using pupillometry. Poster presented at the 38th Annual midwinter meeting of the Association for Research in Otolaryngology.
- Venker, C., **Winn**, M.B., Ellis-Weismer, S., Saffran, J., Edwards, J. (2015). Mutual Exclusivity in Young Children with ASD: An Eye-Gaze Study. Presentation accepted to the International Meeting for Autism Research, Salt Lake City, UT.
- Winn**, M.B., Kan, A., Litovsky, R.Y. (2016) Sensitivity to binaural cues beyond threshold revealed by eye movements. Poster presented at the 39th Annual midwinter meeting of the Association for Research in Otolaryngology, San Diego, CA.
- Winn**, M.B. (2016) Sound quality impacts the speech and effort of sentence perception. Poster presented at the meeting of the American Auditory Society, Scottsdale, AZ.

- Winn, M.B.** (2016). Rapid reduction of listening effort resulting from predicting speech processing, and delays associated with cochlear implantation. Poster presented at the Acoustical Society of America, Salt Lake City, UT.
- Winn, M.B.** (2016). Using sociolinguistic phonetic perception to fine tune cochlear implant simulations. Poster presented at the Acoustical Society of America, Salt Lake City, UT.
- DiNino, M., **Winn, M.B.**, Bierer, J.A. (2016). Cochlear implant listener vowel identification performance and confusion patterns with reduced channel programs. Poster presented at the Acoustical Society of America, Honolulu, HI.
- Gianakas, S., **Winn, M.B.** (2016). Exploiting the Ganong effect to probe for phonetic uncertainty resulting from hearing loss. Poster presented at the Acoustical Society of America, Honolulu, HI.
- Moore, A., **Winn, M.B.** (2016). Acoustic cues underlying the adjustment to talker sex in perception of fricative sounds. Poster presented at the Acoustical Society of America, Honolulu, HI.
- O'Brien, G., **Winn, M.B.** (2016). Uncertainty in binaural hearing linked to inherent envelope fluctuations. Poster presented at the Acoustical Society of America, Honolulu, HI.
- Kan, A., **Winn, M.B.** (2016). Using pupillometry to investigate the better ear advantage. Poster presented at the Acoustical Society of America, Honolulu, HI.

OTHER PRESENTATIONS

- Winn, M.B.** (2015). Hearing impairment and listening effort: How do we measure it and why does it matter? Podium presentation at the local chapter of the Hearing Loss Association of America, Madison, WI.
- Winn, M.B.** (2015). Learning more about speech perception through measures of pupil dilation. Podium presentation at the University of South Florida, Tampa, FL.
- Winn, M.B.** (2015). Learning more about speech perception through measures of pupil dilation. Podium presentation at the University of Minnesota, Minneapolis, MN.
- Winn, M.B.** (2015). The effects of spectral resolution on listening effort and speech processing. Podium presentation at Boys Town National Research Hospital, Omaha, NE.
- Winn, M.B.** (2015). Learning more about speech perception through measures of pupil dilation. Podium presentation at the University of Washington Department of Psychology, Seattle, WA.
- Winn, M.B.** (2016). Hearing impairment and listening effort: How do we measure it and why does it matter? Podium presentation at the local chapter of the Hearing Loss Association of America, Seattle, WA and Bellevue, WA.

AWARDS AND HONORS

Mentored Doctoral Student Research Poster grant (American Auditory Society, 2010)

Pre-Doctoral Training Grant (Univ. of Maryland Center for Comparative Evolution and Biology of Hearing; 2010, 2011)
Distinguished Teaching Award (Univ. of Maryland Center for Teaching Excellence; 2010, 2011)
Dean's Scholar Mentorship Award (Univ. of Maryland College of Behavioral and Social Sciences; 2011)
Student travel award (Conference on Implantable Auditory Prostheses, 2011, 2013)
Charles N. Ford Best translational / Clinical Poster (Univ. of Wisconsin Dept. of Surgery, 2014)
Second place, Poster Pitch Blitz (37th MidWinter meeting of the Association for Research in Otolaryngology, 2014)
Young Investigator Award (8th International Symposium on Objective Measures in Auditory Implants, Toronto, ON)
Young Investigator Travel Award (38th MidWinter meeting of the Association for Research in Otolaryngology, 2015)

TEACHING EXPERIENCE

Introduction to Phonetic Science (primary instructor of record) U. Maryland
15 semesters. Average enrollment: ~40 undergraduates

Implantable Auditory Prostheses (primary instructor of record) U. Wisconsin-Madison
Fall 2012. Enrollment: 16 AuD students

Phonetics (primary instructor of record) U. Washington
Winter 2016. Enrollment: 68 undergraduates

Hearing Science (primary instructor of record) U. Washington
Winter 2016. Enrollment: 72 undergraduates

Advanced Hearing Science (primary instructor of record) U. Washington
Autumn 2016. Enrollment: 14 AuD students

OTHER RESEARCH EXPERIENCE

Center for Advanced Study of Language (Aug 2006 – Jul 2009)
Allison Blodgett, Ph.D. allison.blodgett@umassmed.edu
Acoustic analysis of spoken Vietnamese word production
Creation of perceptual experiments, training materials, and technical reports

Phonology, Cognitive Science & Sound Systems Lab Group (Aug 2005 – Dec 2012)
William Idsardi, Ph.D. idsardi@umd.edu
Multi-disciplinary group on sound systems and auditory/cognitive science

Cochlear Implants and Psychophysics Laboratory (Nov 2008 – Dec 2012)
Monita Chatterjee, Ph.D. monita.chatterjee@boystown.org
Speech perception by listeners with normal hearing and with cochlear implants

Binaural Hearing and Speech Laboratory (Apr 2012 – August 2015)

Ruth Litovsky, Ph.D. litovsky@waisman.wisc.edu

Spectral resolution and binaural speech perception by listeners with normal hearing and with cochlear implants

Learning to Talk Laboratory (Apr 2012 – January 2015)

Jan Edwards, Ph.D. jedwards2@wisc.edu

Listening effort & cognitive load, phonological development in children with typical development and children with autism spectrum disorder

PROFESSIONAL SERVICE

Reviewer - *Journal of the Acoustical Society of America, JASA-Express Letters, Ear and Hearing, Journal of the Association for Research in Otolaryngology, Journal of Phonetics, Journal of Speech, Language and Hearing Research, Annals of Otology, Rhinology & Laryngology, Journal of Communication Disorders, Frontiers in Psychology, PLoS One*

Professional membership: *Acoustical Society of America, American Auditory Society, International Society of Audiology*

Faculty search committees

University of Maryland Hearing and Speech Sciences (2010)

University of Washington Speech and Hearing Sciences (2016)

Thesis committees

Lindsay DeVries (PhD candidate, U of Washington Speech & Hearing Sciences)

Mishaela DiNino (PhD candidate, U of Washington Speech & Hearing Sciences)

Nicole Chartier (PhD candidate, U of Washington Linguistics)

PROGRAMMING LANGUAGES

R (intermediate/advanced)

Praat (advanced)

MatLab (intermediate)

WEBSITE

www.mattwinn.com

Last updated: October 21, 2016