

# Jonathan Erik Peelle

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## Current Position

Associate Professor, Department of Otolaryngology, Washington University 2017–present  
Associate Professor (courtesy), Department of Psychological and Brain Sciences  
Member, Division of Biology and Biomedical Sciences

## Education

PhD (Neuroscience), Brandeis University (Advisor: Arthur Wingfield) 2005  
MA (Cognitive Psychology), Brandeis University 2002  
BA (Psychology), BMus (Horn performance), Houghton College 1999

## Past Academic Positions and Employment

Assistant Professor, Department of Otolaryngology, Washington University 2012–2017  
Research Associate, Department of Neurology, University of Pennsylvania 2011–2012  
Postdoctoral fellow, MRC Cognition and Brain Sciences Unit, Cambridge UK 2008–2010  
Postdoctoral fellow, Department of Neurology, University of Pennsylvania 2006–2008  
Postdoctoral fellow, Volen National Center for Complex Systems, Brandeis University 2005–2006

## Honors and Awards

Fellow, Psychonomic Society 2016  
Royal Society International Travel Award 2010  
*Brain* Travel Grant 2009  
Individual NRSA F31DC004376 2003  
American Psychological Association Dissertation Research Award 2003  
American Psychological Association Div. 20 Award for Proposed Doctoral Research 2003

## Research

### Research Interests

My research is centered on the psychological and neural basis for human communication. I am especially interested in the interaction between sensory, cognitive, and social factors, and individual differences in how different people perceive speech. Because of the central role of spoken language in our everyday lives, understanding what contributes to communication success has implications for social, mental, and physical well-being.

### **Current Grant Support**

NIH R56 AG059265 (Role: PI) "Age-related changes in language processing"	2019–2021
NIH R01 DC014281 (Role: PI) "The neurocognitive basis of effortful listening"	2015–2021
NIH R21 AG067295 (Role: Co-PI) "Healthy aging and the cost of cognitive effort"	2020–2022
NIH R21 DC016086 (Role: Co-PI) "High-density optical tomography in patients with cochlear implants"	2018–2021
NIH R01 DC017451 (Role: Co-investigator) "Measurement of individualized factors associated with tinnitus burden" (PI: Jay Piccirillo)	2019–2024
NIH R01 DC016594 (Role: Co-investigator) "Audio-visual integration, age, and hearing loss" (PI: Nancy Tye-Murray)	2018–2023
NIH K01 DC017522 (Role: Co-investigator) "Objective, subjective, and informant reports of hearing loss, personality, and cognition in adults with dementia" (PI: Kate McClannahan)	2020–2021
NSF (Role: Co-Investigator) "The neurobiology of language: A new open science journal" (PI: Steven Small)	2018–2021

### **Completed Grant Support**

NIH R21 DC015884 (Role: PI) "Neural systems supporting speech processing in listeners with cochlear implants"	2017–2020
NIH R01 DC013063 (Role: Co-Investigator) "Semantic memory and language learning in Alzheimer's Disease and Semantic Dementia" (PI: Jamie Reilly)	2014–2019
NIH R56 AG018029 (Role: Co-Investigator) "Auditory-visual integration and age" (PI: Nancy Tye-Murray)	2017–2018
NIH R01 AG038490 (Role: Co-Investigator) "Aging, hearing loss, and sentence comprehension: Neural correlates" (PI: Murray Grossman)	2012–2017
Dana Foundation David Mahoney Neuroimaging Program (Role: PI) "Neural reorganization as a consequence of age-related sensory decline"	2013–2017
McDonnell Center for Systems Neuroscience (Role: PI) "Cognitive effects of sensory challenge during speech comprehension"	2013–2015

## Preprints

(\* indicates student/trainee author)

Bajracharya A\*, Peelle JE. A systematic review of neuroimaging approaches to mapping language in individuals. *PsyArXiv*. doi:10.31234/osf.io/jru2z

Peelle JE, Van Engen KJ. Time stand still: Effects of temporal window selection on eye tracking analysis. *PsyArXiv*. doi:10.31234/osf.io/pc3da

Price AR, Bonner MF, Peelle JE, Grossman M. Neural coding of fine-grained object knowledge in perirhinal cortex. *bioRxiv*. doi:10.1101/194829

Van Engen KJ, Dey A\*, Runge N\*, Spehar B, Sommers MS, Peelle JE. Effects of age, word frequency, and noise on the time course of spoken word recognition. *PsyArXiv*. doi:10.31234/osf.io/xd3qg

Van Engen KJ, Dey A, Sommers MS, Peelle JE. Audiovisual speech perception: Moving beyond McGurk. *PsyArXiv*. doi:10.31234/osf.io/6y8qw

## Peer-Reviewed Publications

(66 total; \* indicates student/trainee author)

Google Scholar profile : <http://jonathanpeelle.net/scholar>

McLaughlin DJ\*, Braver TS, Peelle JE (In press) Measuring the subjective cost of listening effort using a discounting task. *Journal of Speech, Language, and Hearing Research*. Preprint: doi:10.31234/osf.io/zc9jg

Rogers CS, Jones M, McConkey S, Spehar B, Van Engen KJ, Sommers MS, Peelle JE (In press) Age-related differences in auditory cortex activity during spoken word recognition. *Neurobiology of Language*. doi:10.1162/nol\_a\_00021

Peelle JE, Miller RL, Rogers CS, Spehar B, Sommers MS, Van Engen KJ (2020) Completion norms for 3085 English sentence contexts. *Behavior Research Methods* 52:1795–1799. doi:10.3758/s13428-020-01351-1

Botvinik-Nezer R et al. (2020) Variability in the analysis of a single neuroimaging dataset by many teams. *Nature* 582:84–88. doi:10.1038/s41586-020-2314-9

Reilly J, Flurie M, Peelle JE (2020) The English lexicon mirrors functional brain activation for a sensory hierarchy dominated by vision and audition: Point-counterpoint. *Journal of Neurolinguistics* 55:100895. doi:10.1016/j.jneuroling.2020.100895

Whitson HE, Cronin-Golomb A, Cruickshanks K, Gilmore GC, Owsley C, Peelle JE, Recanzone G, Sharma A, Swenor B, Yaffe K, Lin FR (2018) American Geriatrics Society and National Institute on Aging bench-to-bedside conference: Sensory impairment and cognitive decline in older adults. *Journal of the American Geriatrics Society* 66:2052–2058. doi:10.1111/jgs.15506

Lee YS\*, Wingfield A, Min NE, Kotloff E, Grossman M, Peelle JE (2018) Differences in hearing acuity in “normal” hearing young adults modulate the neural basis for speech comprehension. *eNeuro* 5:ENEURO.0263-17.2018. doi:10.1523/ENEURO.0263-17.2018

Koeritzer MA\*, Rogers CS, Van Engen KJ, Peelle JE (2018) The impact of age, background noise, semantic ambiguity, and hearing loss on recognition memory for speech. *Journal of Speech, Language, and Hearing Research* 61:740–751. doi:10.1044/2017\_JSLHR-H-17-0077

- Peelle JE (2018) Listening effort: How the cognitive consequences of acoustic challenge are reflected in brain and behavior. *Ear and Hearing* 39:204–214. doi:10.1097/AUD.0000000000000494
- Scott-Wittenborn N\*, Karadaghy O, Piccirillo JF, Peelle JE (2017) A methodological assessment of studies that use voxel-based morphometry to study tinnitus. *Hearing Research* 355:23–32. doi:10.1016/j.heares.2017.09.002
- Hassanpour MS\*, Eggebrecht AT, Peelle JE, Culver JP (2017) Mapping effective connectivity within cortical networks with diffuse optical tomography. *Neurophotonics* 4:041402. doi:10.1117/1.NPh.4.4.041402
- Peelle JE (2017) Optical neuroimaging of spoken language. *Language, Cognition and Neuroscience* 32:847–854. doi:10.1080/23273798.2017.1290810
- Reilly J, Peelle JE, Garcia A, Crutch SJ (2016) Linking somatic and symbolic representation in semantic memory: The dynamic multilevel reactivation framework. *Psychonomic Bulletin and Review* 23:1002–1014. doi:10.3758/s13423-015-0824-5
- Peelle JE, Wingfield A (2016) The neural consequences of age-related hearing loss. *Trends in Neurosciences* 39:486–497. doi:10.1016/j.tins.2016.05.001
- Roland LT\*, Peelle JE, Kallogjeri D, Nicklaus JE, Piccirillo JF (2016) The effect of rTMS to temporoparietal cortex on neural connectivity in tinnitus: A randomized trial. *Laryngoscope* 126:1201–1206. doi:10.1002/lary.25650
- Price AR\*, Peelle JE, Bonner MF, Grossman M, Hamilton RH (2016) Causal evidence for a mechanism of semantic integration in the angular gyrus as revealed by high-definition transcranial direct current stimulation. *Journal of Neuroscience* 36:3829–3838. doi:10.1523/JNEUROSCI.3120-15.2016
- DeCaro R, Peelle JE, Grossman M, Wingfield A (2016) The two sides of sensory-cognitive interactions: Effects of age, hearing acuity, and working memory span on sentence comprehension. *Frontiers in Psychology* 7:236. doi:10.3389/fpsyg.2016.00236
- Lee YS\*, Min NE, Wingfield A, Grossman M, Peelle JE (2016) Acoustic richness modulates the neural networks supporting intelligible speech processing. *Hearing Research* 333:108–117. doi:10.1016/j.heares.2015.12.008
- Bonner MF, Price AR\*, Peelle JE, Grossman M (2016) Semantics of the visual environment encoded in the parahippocampal cortex. *Journal of Cognitive Neuroscience* 28:361–378. doi:10.1162/jocn\_a\_00908
- Ward CM\*, Rogers CS\*, Van Engen KJ, Peelle JE (2016) Effects of age, acoustic challenge, and verbal working memory on recall of narrative speech. *Experimental Aging Research* 42:126–144. doi:10.1080/0361073X.2016.1108785
- Lee YS\*, Peelle JE, Kraemer D, Lloyd S, Granger R (2015) Multivariate sensitivity to voice during auditory categorization. *Journal of Neurophysiology* 114:1819–1826. doi:10.1152/jn.00407.2014
- Peelle JE, Sommers MS (2015) Prediction and constraint in audiovisual speech perception. *Cortex* 68:169–181. doi:10.1016/j.cortex.2015.03.006
- Hassanpour MS\*, Eggebrecht AT, Culver JP, Peelle JE (2015) Mapping cortical responses to speech using high-density diffuse optical tomography. *NeuroImage* 117:319–326. doi:10.1016/j.neuroimage.2015.05.058
- Roland LT\*, Lenze EJ, Hardin F-M, Kallogjeri D, Nicklaus JE, Wineland A, Fendell G, Peelle JE, Piccirillo JF (2015) The effects of mindfulness based stress reduction on subjective bother and neural connectivity in chronic tinnitus. *Otolaryngology—Head and Neck Surgery* 152:919–926. doi:10.1177/0194599815571556

- Winder-Rhodes SE, Hampshire A, Rowe JB, Peelle JE, Robbins TW, Owen AM, Barker RA (2015) *MAPT* haplotype influences memory function in Parkinson's disease and healthy aging. *Neurobiology of Aging* 36:1519–1528. doi:10.1016/j.neurobiolaging.2014.12.006
- Price AR\*, Bonner MF, Peelle JE, Grossman M (2015) Converging evidence for the neuroanatomic basis of combinatorial semantics in the angular gyrus. *Journal of Neuroscience* 35:3276–3284. doi:10.1523/JNEUROSCI.3446-14.2015
- Cusack R, Vicente-Grabovetsky A, Mitchell DJ, Wild CJ, Auer T, Linke AC, Peelle JE (2015) Automatic analysis (aa): Efficient neuroimaging workflows and parallel processing using Matlab and XML. *Frontiers in Neuroinformatics* 8:90. doi:10.3389/fninf.2014.00090
- Peelle JE (2014) Methodological challenges and solutions in auditory functional magnetic resonance imaging. *Frontiers in Neuroscience* 8:253. doi:10.3389/fnins.2014.00253
- Cook PA, McMillan CT, Avants BB, Peelle JE, Gee JC, Grossman M (2014) Relating brain anatomy and cognitive ability using a multivariate multimodal framework. *NeuroImage* 99:477–486. doi:10.1016/j.neuroimage.2014.05.008
- Van Engen KJ, Peelle JE (2014) Listening effort and accented speech. *Frontiers in Human Neuroscience* 8:577. doi:10.3389/fnhum.2014.00577
- Peelle JE, Powers J, Cook PA, Smith EE, Grossman M (2014) Frontotemporal neural systems supporting semantic processing in Alzheimer's disease. *Cognitive, Affective, and Behavioral Neuroscience* 14:37–48. doi:10.3758/s13415-013-0239-6
- Sohoglu E\*, Peelle JE, Carlyon RP, Davis MH (2014) Top-down influences of written text on perceived clarity of degraded speech. *Journal of Experimental Psychology: Human Perception and Performance* 40:186–199. doi:10.1037/a0033206
- Peelle JE, Chandrasekaran K, Powers J, Smith EE, Grossman M (2013) Age-related vulnerability in the neural systems supporting semantic processing. *Frontiers in Aging Neuroscience* 5:46. doi:10.3389/fnagi.2013.00046
- Peelle JE, Gross J, Davis MH (2013) Phase-locked responses to speech in human auditory cortex are enhanced during comprehension. *Cerebral Cortex* 23:1378–1387. doi:10.1093/cercor/bhs118
- Bonner MF\*, Peelle JE, Cook PA, Grossman M (2013) Heteromodal conceptual processing in the angular gyrus. *NeuroImage* 71:175–186. doi:10.1016/j.neuroimage.2013.01.006
- Grossman M, Peelle JE, Smith EE, McMillan CT, Cook P, Powers J, Dreyfuss M, Bonner MF, Richmond L, Boller A, Camp E, Burkholder L (2013) Category specific semantic memory: Converging evidence from BOLD fMRI and Alzheimer's disease. *NeuroImage* 68:263–274. doi:10.1016/j.neuroimage.2012.11.057
- Peelle JE (2012) The hemispheric lateralization of speech processing depends on what “speech” is: A hierarchical perspective. *Frontiers in Human Neuroscience* 6:309. doi:10.3389/fnhum.2012.00309
- Wild CJ, Yusuf A, Wilson D, Peelle JE, Davis MH, Johnsrude IS (2012) Effortful listening: The processing of degraded speech depends critically on attention. *Journal of Neuroscience* 32:14010–14021. doi:10.1523/jneurosci.1528-12.2012
- Peelle JE, Davis MH (2012) Neural oscillations carry speech rhythm through to comprehension. *Frontiers in Psychology* 3:320. doi:10.3389/fpsyg.2012.00320
- Reilly J, Westbury C, Kean J, Peelle JE (2012) Arbitrary symbolism in natural language revisited: When word forms carry meaning. *PLOS ONE* 7:e42286. doi:10.1371/journal.pone.0042286

- Sohoglu E\*, Peelle JE, Carlyon RP, Davis MH (2012) Predictive top-down integration of prior knowledge during speech perception. *Journal of Neuroscience* 32:8443–8453.  
doi:10.1523/jneurosci.5069-11.2012
- Szenkovits G, Peelle JE, Norris D, Davis MH (2012) Individual differences in premotor and motor recruitment during speech perception. *Neuropsychologia* 50:1380–1392.  
doi:10.1016/j.neuropsychologia.2012.02.023
- Peelle JE, Cusack R, Henson RNA (2012) Adjusting for global effects in voxel-based morphometry: Gray matter decline in normal aging. *NeuroImage* 60:1503–1516. doi:10.1016/j.neuroimage.2011.12.086
- Peelle JE, Troiani V, Grossman M, Wingfield A (2011) Hearing loss in older adults affects neural systems supporting speech comprehension. *Journal of Neuroscience* 31:12638–12643.  
doi:10.1523/jneurosci.2559-11.2011
- Rogalski Y, Peelle JE, Reilly J (2011) Effects of perceptual and contextual enrichment on visual confrontation naming in adult aging. *Journal of Speech, Language, and Hearing Research* 54:1349–1360. doi:10.1044/1092-4388(2011/10-0178)
- Reilly J, Peelle JE, Antonucci SM, Grossman M (2011) Anomia as a marker of distinctive semantic memory impairments in Alzheimer's Disease and Semantic Dementia. *Neuropsychology* 25:413–426.  
doi:10.1037/a0022738
- Reilly J, Rodriguez AD, Peelle JE, Grossman M (2011) Frontal lobe damage impairs process and content in semantic memory: Evidence from category-specific effects in progressive non-fluent aphasia. *Cortex* 47:645–658. doi:10.1016/j.cortex.2010.05.005
- Peelle JE, Eason RJ\*, Schmitter S, Schwarzbauer C, Davis MH (2010) Evaluating an acoustically quiet EPI sequence for use in fMRI studies of speech and auditory processing. *NeuroImage* 52:1410–1419.  
doi:10.1016/j.neuroimage.2010.05.015
- Peelle JE, Johnsrude IS, Davis MH (2010) Hierarchical processing for speech in human auditory cortex and beyond. *Frontiers in Human Neuroscience* 4:51. doi:10.3389/fnhum.2010.00051
- Peelle JE, Troiani V, Wingfield A, Grossman M (2010) Neural processing during older adults' comprehension of spoken sentences: Age differences in resource allocation and connectivity. *Cerebral Cortex* 20:773–782. doi:10.1093/cercor/bhp142
- Troiani V, Peelle JE, McMillan C, Clark R, Grossman M (2009) Magnitude and parity as complementary attributes of quantifier statements. *Neuropsychologia* 47:2684–2685.  
doi:10.1016/j.neuropsychologia.2009.04.025
- Peelle JE, Troiani V, Grossman M (2009) Interaction between process and content in semantic memory: An fMRI study of noun feature knowledge. *Neuropsychologia* 47:995–1003.  
doi:10.1016/j.neuropsychologia.2008.10.027
- Troiani V, Peelle JE, Clark R, Grossman M (2009) Is it logical to count on quantifiers? Dissociable neural networks underlying quantity-based and logical quantifiers. *Neuropsychologia* 47:104–111.  
doi:10.1016/j.neuropsychologia.2008.08.015
- Peelle JE, Troiani V, Gee J, Moore P, McMillan C, Vesely L, Grossman M (2008) Sentence comprehension and voxel-based morphometry in progressive nonfluent aphasia, semantic dementia, and non-aphasic frontotemporal dementia. *Journal of Neurolinguistics* 21:418–432.  
doi:10.1016/j.jneuroling.2008.01.004

- Golomb JD\*, Peelle JE, Addis KM, Kahana MJ, Wingfield A (2008) Effects of adult aging on utilization of temporal and semantic associations during free and serial recall. *Memory and Cognition* 36:947–956. doi:10.3758/MC.36.5.947
- Reilly J, Peelle JE (2008) Effects of semantic impairment on language processing in semantic dementia. *Seminars in Speech and Language* 29:32–43.
- Peelle JE, Grossman M (2008) Language processing in frontotemporal dementia: A brief review. *Language and Linguistics Compass* 2:18–35. doi:10.1111/j.1749-818X.2007.00047.x
- Peelle JE, Cooke A, Moore P, Vesely L, Grossman M (2007) Syntactic and thematic components of sentence processing in progressive nonfluent aphasia and nonaphasic frontotemporal dementia. *Journal of Neurolinguistics* 20:482–494. doi:10.1016/j.jneuroling.2007.04.002
- Golomb JD\*, Peelle JE, Wingfield A (2007) Effects of stimulus variability and adult aging on adaptation to time-compressed speech. *Journal of the Acoustical Society of America* 121:1701–1708. doi:10.1121/1.2436635
- Fallon M, Peelle JE, Wingfield A (2006) Spoken sentence processing in young and older adults modulated by task demands: Evidence from self-paced listening. *Journal of Gerontology: Psychological Sciences* 61:P10–P17.
- Wingfield A, McCoy SL, Peelle JE, Tun PA, Cox C (2006) Effects of adult aging and hearing loss on comprehension of rapid speech varying in syntactic complexity. *Journal of the American Academy of Audiology* 17:487–497. doi:10.3766/jaaa.17.7.4
- Peelle JE, Wingfield A (2005) Dissociations in perceptual learning revealed by adult age differences in adaptation to time-compressed speech. *Journal of Experimental Psychology: Human Perception and Performance* 31:1315–1330. doi:10.1037/0096-1523.31.6.1315
- Wingfield A, Tun PA, O’Kane G, Peelle JE (2004) Language comprehension in complex environments: Distraction by competing speech in young and older adult listeners. In *Advances in Psychology Research* 33. Nova Publishers: Hauppauge, NY.
- Peelle JE, McMillan C, Moore P, Grossman M, Wingfield A (2004) Dissociable patterns of brain activity during comprehension of rapid and syntactically complex speech: Evidence from fMRI. *Brain and Language* 91:315–325. doi:10.1037/0096-1523.31.6.1315
- Wingfield A, Peelle JE, Grossman M (2003) Speech rate and syntactic complexity as multiplicative factors in speech comprehension by young and older adults. *Aging, Neuropsychology, and Cognition* 10:310–322. doi:10.1076/anec.10.4.310.28974

## Other Publications

- Peelle JE (2016) A manuscript checklist for improving science. *The Winnower* 3:e145877.77781. doi:10.15200/winn.145877.77781
- Peelle JE (2016) Reviewing for open science. *The Winnower* 3:e145877.76807. doi:10.15200/winn.145877.76807
- Peelle JE (2016) Speaker gender balance at Society for the Neurobiology of Language conferences 2009–2015. *The Winnower* 3:e145573.38893. doi:10.15200/winn.145573.38893

## Editorials, Introductions, and Lightly-Reviewed Opinion Pieces

- Peelle JE (2018) Speech comprehension: Stimulating discussions at a cocktail party. *Current Biology* 28:R68–R70. doi:10.1016/j.cub.2017.12.005
- Peelle JE, Wingfield A (2016) Listening effort in age-related hearing loss. *The Hearing Journal* 69:10, 12. doi:10.1097/01.HJ.0000508368.12042.08
- Peelle JE (2016) Introduction to special issue on age, hearing, and speech comprehension. *Experimental Aging Research* 42:1–3. doi:10.1080/0361073X.2016.1108714
- Wingfield A, Peelle JE (2015) The effects of hearing loss on neural processing and plasticity. *Frontiers in Systems Neuroscience* 9:35. doi:10.3389/fnsys.2015.00035
- Wingfield A, Peelle JE (2012) How does hearing loss affect the brain? *Aging Health* 8:107–109. doi:10.2217/AHE.12.5

## Books (as editor)

*The Auditory Cognitive Neuroscience of Speech Perception* (Springer Handbook of Auditory Research) (In progress) (Holt and Peelle, eds; Popper, Fey, Coffin, series eds). Springer.

## Book Chapters and Sections

- Rogers CS, Peelle JE (Submitted) Interactions between audition and cognition in hearing loss and aging. In: *The Auditory Cognitive Neuroscience of Speech Perception* (Springer Handbook of Auditory Research). Springer. Preprint: <https://psyarxiv.com/d2bxw>
- Peelle JE (2020) Age-related sensory deficits and their consequences. In: *The Handbook of Cognitive Aging: A Life Course Perspective* (Thomas and Gutches, eds), pp. 179–199. Cambridge University Press. Preprint: <https://psyarxiv.com/3cptq>
- Peelle JE (2019) The neural basis for auditory and audiovisual speech perception. In: *The Routledge Handbook of Phonetics* (Katz and Assmann, eds), pp. 193–216. New York: Routledge. Preprint: <https://psyarxiv.com/39ej7>
- Peelle JE (2018) Language and aging. In: *The Oxford Handbook of Neurolinguistics* (de Zubicaray and Schiller, eds), pp. 295–316. Oxford: Oxford University Press. Preprint: <https://psyarxiv.com/xp29u>

## Invited Non-conference Talks

### INTERNATIONAL

MRC Cognition and Brain Sciences Unit, Cambridge, UK	2019
New Zealand Institute of Language, Brain & Behaviour, Christchurch, New Zealand	2017
Department of Experimental Psychology, Oxford University, Oxford, UK	2017
Brain & Mind Doctoral Program, University of Helsinki/Aalto Univ, Helsinki, Finland	2015
Australian Hearing Hub, Macquarie University, Sydney, Australia	2015
Division of Psychology and Language Sciences, University College London, UK	2015
Centre for Neural Circuits and Behaviour, Oxford University, Oxford, UK	2015
MRC Institute for Hearing Research, Nottingham, UK	2013
Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany	2012
Brain and Mind Institute, University of Western Ontario, London, Canada	2011



## NATIONAL

Core for Advanced Magnetic Resonance Imaging, Baylor College of Medicine	2019
Cochlear Center for Hearing and Public Health, Johns Hopkins University	2019
Department of Psychology, Brandeis University	2019
Department of Neurosurgery, University of Iowa	2018
Department of Pharmacology, Southern Illinois University School of Medicine	2017
Department of Communication Sciences and Disorders, Northeastern University	2017
Department of Psychological Sciences, University of Missouri	2016
Neuroscience and Cognitive Science Colloquium, University of Maryland	2016
Department of Speech, Language, and Hearing Sciences, Purdue University	2014
Beckman Institute, University of Illinois, Urbana Champaign	2013
Department of Psychology, Washington University in Saint Louis	2012
Department of Communicative Sciences and Disorders, Michigan State University	2012
Department of Otolaryngology, Washington University in Saint Louis	2012
Department of Communication Sciences & Disorders, University of South Carolina	2012
Department of Psychology and CNBC, Carnegie Mellon University	2012
Department of Psychology, University of Missouri–Saint Louis	2011
Department of Communicative Sciences and Disorders, NYU	2011

## LOCAL

Knight Alzheimer's Disease Research Center, Washington University	2020
Department of Otolaryngology, Washington University	2019
Saint Louis Children's Hospital/Washington University Audiology Grand Rounds	2019
Cognitive, Computational & Systems Neuroscience Retreat, Washington University	2017
Department of Psychological and Brain Sciences, Washington University	2016
Department of Otolaryngology, Washington University	2015
Department of Psychology, Washington University	2013
Saint Louis Children's Hospital/Washington University Audiology Grand Rounds	2013
University of Pennsylvania Center for Cognitive Neuroscience Talk Series	2011
Translational Research Center, University of Pennsylvania	2011
Department of Audiology, University of Pennsylvania	2011
MRC Cognition and Brain Sciences Unit, Cambridge, UK	2010
MRC Cognition and Brain Sciences Unit, Cambridge, UK	2009
University of Pennsylvania Brain and Language Series	2008
International Research Training Group Winterschool	2007
University of Pennsylvania Brain and Language Series	2006

## Conference and Workshop Talks

### INVITED

- Using optical neuroimaging to understand cognitive effort in listeners with cochlear implants. *Mid-winter Meeting of the Association for Research in Otolaryngology*, San Jose, CA, January 2020.
- Cognitive contributions to understanding acoustically challenging speech. *Aging and Speech Communication Conference*, Tampa, FL, November 2019.
- Measuring and overcoming cognitive challenge during speech comprehension. *Conference on Hearing and Cognition*, Knowles Hearing Center at Northwestern University, Evanston, IL, October 2019.

Neural systems supporting speech perception in listeners with cochlear implants. *Conference on Implantable Auditory Prostheses*, Lake Tahoe, CA, July 2019.

Cognitive contributions to understanding acoustically challenging speech. *IMPRS NeuroCom Summer School in Cognitive Neuroscience*, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, June 2019.

Cognitive contributions to understanding acoustically challenging speech. *Cognitive Hearing Science for Communication*, Linköping, Sweden, June 2019.

How entrained cortical oscillations affect spoken language processing. *CSHL Banbury Course "Genetics and the neurobiology of language"*, Cold Spring Harbor Laboratory, New York, July–August 2018.

The role of entrained cortical oscillations in understanding audiovisual speech. *ARC Centre of Excellence in Cognition and its Disorders–Kanazawa Institute of Technology MEG Workshop*, Macquarie University, Sydney, Australia, December 2017.

Interaction between cognitive and acoustic processing during speech comprehension. *Eleanor M. Safran Conference on Cognitive Neuroscience and Rehabilitation of Language Disorders*, Philadelphia, PA, September 2017.

Individual differences in neural systems supporting speech comprehension. *World Congress of Audiology*, Vancouver, Canada, September 2016. \* session organizer/chair

Echoes of the acoustic speech signal in spoken language comprehension. *Center for Hearing Research Annual Symposium*, UC Irvine, May 2016.

Aging, hearing acuity, and cascading effects of perceptual effort. *Annual Meeting of the American Auditory Society*, Scottsdale, AZ, March 2016.

Individual differences in auditory and cognitive factors during spoken language comprehension. *Annual Meeting of the Society for the Neurobiology of Language*, Chicago, IL, October 2015.

Hearing loss and the brain: Insights from neuroimaging. *Annual Meeting of the Gerontological Society of America*, Washington, DC, November 2014.

Individual differences in neural responses to diverse speech signals. *Language in Interaction Workshop on Language Evolution and Diversity*, Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands, October 2014.

Cognitive consequences of acoustic challenge. *Midwest Auditory Research Conference–Midwest Auditory Neuroscience Symposium*, Saint Louis, MO, July 2014.

Auditory and cognitive effects of reduced speech intelligibility. *Signal and Noise along the Auditory Pathway (SNAP)*, Leipzig, Germany, December 2013.

Age, hearing loss, and the neural systems that support sentence comprehension. *Aging and Speech Communication Conference*, Indiana University, Bloomington, Indiana, October 2013.

What age and hearing loss tell us about acoustic and cognitive factors in speech comprehension. *Central Midwest Tinnitus Symposium*, University of Illinois Urbana Champaign, October 2013.

Neural signatures of effort and intelligibility during speech comprehension. *International Conference on Cognitive Hearing Science for Communication*, Linköping, Sweden, June 2013.

Cortical responses to degraded speech are modulated by linguistic predictions. *International Congress on Acoustics (Joint with Acoustical Society of America and Canadian Acoustical Association)*, Montreal, Canada, June 2013.

## CONTRIBUTED

- Rogers CS, Jones M, McConkey S, Spehar B, Van Engen KJ, Sommers MS, Peelle JE. Age-related differences in auditory cortex activity during spoken word recognition. *OHBMs*, March 2020. <https://twitter.com/OHBMequinoX/status/1241103520880824323>
- Peelle JE, Jones M, Luor A, Zhu Z, Bajracharya A. Comparing approaches for motion mitigation in task-based fMRI. *OHBMs*, March 2020. <https://twitter.com/OHBMequinoX/status/1241160118223470597>
- Peelle JE. Age-related changes in speech perception and/or movement. *Annual Meeting of the International Society for Behavioural Neuroscience*, Anchorage, AL, June 2018.
- Peelle JE. Effects of age and hearing loss on neural processing of speech. *Annual Meeting of the International Society for Behavioural Neuroscience*, Kohala Coast, HI, June 2015.
- Peelle JE. Cognitive consequences of hearing loss (Symposium: The effects of hearing loss on neural processing, plasticity, and aging). *Annual Meeting of the Society for Neuroscience*, Washington, DC, November 2014. \* symposium organizer/co-chair
- Peelle JE. The effect of age and acoustic challenge on memory for narrative speech. *Age, Hearing, and Speech Comprehension: A Symposium in Honor of Art Wingfield*, Waltham, MA, July 2014.
- Peelle JE. Does acoustic challenge affect memory for narrative speech? *Annual Meeting of the International Society for Behavioural Neuroscience*, Amsterdam, The Netherlands, June 2014.
- Peelle JE. Neural signatures of listening effort during speech comprehension. *Annual Meeting of the International Society for Behavioural Neuroscience*, Montreal, Canada, June 2013.
- Peelle JE, Olafsen T, Davis MH, Wingfield A. Perceptual learning in speech comprehension governed by power law dynamics. *Annual Meeting of the Society for Neuroscience*, San Diego, CA, November 2010. \* nanosymposium organizer/chair
- Peelle JE, Troiani V, Wingfield A, Grossman M. Making up for lost sound: Hearing acuity modulates neural recruitment for speech comprehension in older adults. *Annual Meeting of the Society for Neuroscience*, Washington, DC, November 2008.
- Peelle JE, Reilly J, Anderson C, Moore P, Cross K, Kwok S, Vesely L, Grossman M. Naming in PNFA and SD: Knowledge and processing impairments lead to distinct naming errors. *Annual Meeting of the American Academy of Neurology*, Boston, MA, April 2007.
- Peelle JE. Age-related changes in speech comprehension: Effects of rate and syntax. *IGERT Student Research Symposium*, Pittsburgh, PA, June 2003.

## Poster Presentations (last ~2 years)

(\* indicates student/trainee author)

- Sherafati A\*, Hassanpour MS, Dwyer N, Eggebrecht AT, Culver JP, Firszt JB, Peelle JE. Neural mechanisms underlying speech perception in listeners with cochlear implants mapped using high-density diffuse optical tomography. *Midwinter Meeting of the Association for Research in Otolaryngology*, San Jose, CA, January 2020., San Jose CA, January 2020.
- Bajracharya A\*, Cusack R, Peelle JE. Using dimensionality reduction to study individual differences in brain activity during rich stimulation. *BrainModes*, Pokhara, Nepal, December 2019.
- Alberts K, Noud B\*, Peelle JE, Rogers CS. Does the structure of the lexicon change with age? An investigation using the Auditory Lexical Decision Task. *APCAM 2019*, Montréal, Canada, November 2019.

- McLaughlin DJ\*, Peelle JE. Listening effort discounting. *Aging and Speech Communication Conference*, Tampa, FL, November 2019.
- Heisey KL\*, Xie K, Peelle JE, Barbour DL. Conjoint estimation of age-related changes in cognitive and perceptual phenomena. *Annual Meeting of the Society for Neuroscience*, Chicago, IL, October 2019.
- Sherafati A\*, Eggebrecht AT, Hassanpour MS, Dwyer N, Firszt JB, Culver JP, Peelle JE. Dorsolateral prefrontal cortex supports speech perception in listeners with cochlear implants. *Annual Meeting of the Society for Neuroscience*, Chicago, IL, October 2019.
- Piccirillo JF, Wise S, Jones MS, Peelle JE, Kallogjeri D, Kukuljan S, Murphy S. Investigating the Neurobiology of Tinnitus DM102595. *Military Health System Research Symposium*.
- McClannahan K, Chiu Y, Sommers MS, Peelle JE. Test-retest reliability of audiometric assessment for adults with cognitive impairment. *Cognitive Hearing Science for Communication*, Linköping, Sweden, June 2019.
- Jones MS, Zhu Z\*, Peelle JE. Evaluation of motion scrubbing in task-based fMRI using open data. *Annual Meeting of the Organization for Human Brain Mapping*, Rome, Italy, June 2019.
- Martinez J\*, McClannahan K, Peelle JE. "5-minute hearing screening" in adults with and without Alzheimer's Disease. *Annual Meeting of the American Audiological Society*, Scottsdale, AZ, February 2019.
- Rogers CS, Noud B\*, Peelle JE. Does hearing impairment affect lexical competition? Interactive effects between word frequency, neighborhood density and hearing loss on auditory lexical decisions. *Annual Auditory Perception, Cognition, and Action Meeting*. New Orleans, LA, November 2018.
- Bajracharya A\*, Rogers CS, Jones MS, McConkey SM, Peelle JE. Evaluating the reliability of fMRI for single subject language mapping. *Annual Meeting of the Society for Neuroscience*, San Diego, CA, November 2018.
- Reid T\*, Bajracharya A\*, Peelle JE. Meta-analysis of neuroimaging literature to understand speech processing. *Annual Meeting of the Society for Neuroscience: Summer Scholar Poster Session*, San Diego, CA, November 2018.
- Rogers CS, Jones MS, McConkey SM, Spehar B, Runge N\*, Van Engen KJ, Sommers MS, Peelle JE. Aging diminishes auditory activation for single spoken words: evidence from fMRI. *Annual Meeting of the Society for the Neurobiology of Language*, Québec City, Canada, August 2018.
- Van Engen KJ, Dey A\*, Runge N\*, Sommers M, Spehar B, Peelle JE. The time course of word recognition in younger and older adults: Signal degradation and lexical challenge. *Annual Meeting of the Acoustical Society of America*, Minneapolis, MN, May 2018.
- Rogers CS, Jones M, McConkey S, Spehar B, Runge N, Van Engen KJ, Sommers M, Peelle JE. Cortical speech processing in young and older adults' perception of spoken words: evidence from fMRI. *Cognitive Aging Conference*, Atlanta, GA, May 2018.
- Sherafati A\*, Hassanpour MS, Eggebrecht AT, Culver JP, Firszt JB, Peelle JE. Optical neuroimaging of speech perception in listeners with cochlear implants. *ARO Midwinter Meeting*, San Diego, CA, February 2018.

# Teaching

## Mentoring and Supervising

### POSTDOCTORAL FELLOWS

Chad Rogers	2014–2016
Yune Sang Lee (with Murray Grossman)	2013–2016

### PHD STUDENTS

Aahana Bajracharya	2018–
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### OTOLARYNGOLOGY RESIDENTS

Pawina Jiramongkolchai (with Jay Piccirillo)	2017–2019
Lauren Tashima Roland (with Jay Piccirillo)	2013–2015

### AuD STUDENTS (CAPSTONE RESEARCH PROJECT)

Lauren Jacobs	2021
Helen Newport	2020
Amelia Mainardi	2020
Brianne Noud	2018
Jennifer Whittaker	2017
Margaret Koeritzer	2015
Laura Horowitz	2014

### UNDERGRADUATE HONORS STUDENTS

Abby Graegin (Cognitive Neuroscience)	2021
Cameron Perrin (Cognitive Neuroscience)	2021
Olivia Murray (Biology)	2020
Ari Zimmer (Cognitive Neuroscience)	2020
Tim Goblirsch (Psychology)	2019
Hayley Clocksin (Psychology)	2018
Rebecca Yang (Biology)	2017
Hunter Patterson (Biology)	2016
Celia Kaufer (Philosophy-Neuroscience-Psychology)	2015
Anna Mai (Linguistics)	2015
Kathleen Vogel (Philosophy-Neuroscience-Psychology)	2015
Caitlin Ward (Philosophy-Neuroscience-Psychology)	2014

### T35 AUDIOLOGY SUMMER TRAINEES

Jasmin Martinez	2018
Jonathan Hirst	2017
Brianne Noud	2016

### WASHINGTON UNIVERSITY PACS AUDIOLOGY SUMMER TRAINEES

Helen Newport	2019
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### T32 PREDOCTORAL RESEARCH TRAINEES (1 YEAR PLACEMENT)

Emily Miller	2020
Latoya Jeanpierre	2019

#### ENDURE NEUROSCIENCE PIPELINE SUMMER STUDENTS

Taylor Reid 2018

#### DOCTORAL DISSERTATION COMMITTEE MEMBER

Eric Failes (Psychological and Brain Sciences) 2020

Arefeh Sherafati (Physics) 2020

Adam Horin (Physical Therapy) 2020

Katherine Heisey (Biomedical Engineering) 2020

Lindsay Michalski (Psychological and Brain Sciences) 2019

Cynthia Flores (Psychological and Brain Sciences) 2019

Jihyun Cha (Psychological and Brain Sciences) 2019

Andrew Fishell (Neuroscience) 2019

Ashley Nielsen (Neuroscience) 2019

Elinor Harrison (Physical Therapy) 2018

John Morton (Psychological and Brain Sciences) 2016

Avanti Dey (Psychological and Brain Sciences) 2016

Nicholas Szrama (Biomedical Engineering) 2016

Mahlega (Samira) Hassanpour (Physics) 2015

#### OUTSIDE DOCTORAL DISSERTATION EXAMINER

Amanda Fullerton (Macquarie University) current

#### MASTERS THESIS COMMITTEE

Kevin Xie (Computer Science) 2020

Lauren Gaunt (Psychological and Brain Sciences) 2019

Drew McLaughlin (Psychological and Brain Sciences) 2019

Tommy Peng (Biomedical Engineering) 2017

#### OUTSIDE MASTERS THESIS EXAMINER

Amanda Fullerton (Macquarie University) 2016

#### NEUROSCIENCE PHD QUALIFYING EXAM COMMITTEE MEMBER

Dillan Newbold 2017

Ryan Raut 2017

Stephanie Schultz 2017

Olga Neyman 2016

Rachel Rahn 2016

Ben Seitzman 2015

Ashley Nielsen 2014

Josh Siegel 2014

#### UNDERGRADUATE STUDENTS

I generally have 6–10 undergraduate students in the lab: <http://peellelab.org/people>

## Lecturing

### UNDERGRADUATE

Psych 3604: Cognitive Neuroscience 2015–  
Psych 4450: Functional Neuroimaging Methods 2017–

## Guest Lecturing

### GRADUATE

Biol 5651: Neural Systems (“Language & Speech”) 2014–

## Other Lecturing and Teaching

NURS 900: Magnetic resonance imaging methods for cognitive neuroscience 2011  
University of Pennsylvania  
Functional and effective connectivity in fMRI (workshop) 2010, 2011  
Advanced SPM Course, Edinburgh, UK

## Service

### Leadership Positions

Scientific Advisory Committee, Aging and Speech Communication Conference 2019–  
Scientific Committee, Fondation pour l’Audition <http://www.fondationpourlaudition.org> 2017–  
Meeting liaison, Society for the Neurobiology of Language 2015–2017

### Conference and Workshop Organizing

Program committee member, Sensory impairment and cognitive decline 2017  
(NIH U13-funded; PI: Whitson)  
Program committee chair, Society for the Neurobiology of Language 2016  
Age, hearing, and speech comprehension (Symposium in honor of Art Wingfield) 2014  
<http://www.artwingfieldfest.com>

### Invited Committees and Advisory Panels

Cochlear Auditory Brainstem Implant think tank 2016  
NSF workshop: The role of speech science in developing robust processing applications 2015

### Institutional Service

Department liaison to the Institute of Clinical and Translational Sciences 2017–2020  
Washington University Imaging Interest Group organizer <http://peellelab.org/iig/> 2013–  
MRC CBU Scientific Computing Management committee 2009–2010  
MRC CBU departmental colloquia (Chaucer club) organizing committee 2009–2010

## Editorial Service

### ACTION EDITOR (OR EQUIVALENT)

<i>eLife</i>	2019–
<i>Neurobiology of Language</i>	2019–
<i>Language, Cognition and Neuroscience</i>	2016–2020
<i>NeuroImage</i>	2016–2019

### EDITORIAL BOARDS

<i>Frontiers in Brain Imaging Methods</i>	2012–2016
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### GUEST EDITING

<i>Experimental Aging Research</i> , “Age, hearing, and speech comprehension”	2015
<i>Frontiers in Systems Neuroscience</i> , “The effect of hearing loss on neural processing”	2013

<http://journal.frontiersin.org/ResearchTopic/1219>

## Occasional Reviewing: Journals

<i>Aging, Neuropsychology and Cognition</i>	<i>Journal of Cognitive Neuroscience</i>
<i>American Journal of Audiology</i>	<i>Journal of Memory and Language</i>
<i>American Journal of Neuroradiology</i>	<i>Journal of Neurolinguistics</i>
<i>Aphasiology</i>	<i>Journal of Neurophysiology</i>
<i>Attention, Perception, &amp; Psychophysics</i>	<i>Journal of Neuroscience</i>
<i>Behavior Research Methods</i>	<i>Language, Cognition and Neuroscience</i>
<i>Brain and Cognition</i>	<i>Language and Cognition</i>
<i>Brain and Language</i>	<i>Nature</i>
<i>Brain Research</i>	<i>Nature Communications</i>
<i>Canadian Journal of Experimental Psychology</i>	<i>Neurobiology of Aging</i>
<i>Cerebral Cortex</i>	<i>Neurobiology of Language</i>
<i>Cognition</i>	<i>NeuroImage</i>
<i>Cognitive and Behavioral Neurology</i>	<i>Neurophotonics</i>
<i>Cortex</i>	<i>Neuropsychiatric Disease and Treatment</i>
<i>Current Biology</i>	<i>Neuropsychologia</i>
<i>Ear and Hearing</i>	<i>Neuropsychology</i>
<i>eLife</i>	<i>Neuroscience</i>
<i>Frontiers in Aging Neuroscience</i>	<i>PeerJ</i>
<i>Frontiers in Human Neuroscience</i>	<i>Perception</i>
<i>Frontiers in Neurology</i>	<i>PLOS Biology</i>
<i>Frontiers in Psychology</i>	<i>PLOS ONE</i>
<i>Hearing Research</i>	<i>PNAS</i>
<i>Human Brain Mapping</i>	<i>Psychological Review</i>
<i>JAMA Neurology</i>	<i>Psychological Science</i>
<i>JAMA Otolaryngology—Head and Neck Surgery</i>	<i>Psychonomic Bulletin and Review</i>
<i>Journal of the Acoustical Society of America</i>	<i>Psychology and Aging</i>
<i>Journal of the Assoc. for Research in Otolaryngology</i>	<i>Quarterly Journal of Experimental Psychology</i>
<i>Journal of Clinical and Exp. Neuropsychology</i>	<i>Science</i>



**Occasional Reviewing: Research Grants**

Action on Hearing Loss  
Fondation pour l'Audition  
French National Research Agency (Agence Nationale de la Recherche)  
India Alliance (Wellcome Trust partnership)  
Israel Science Foundation  
NIH (ad hoc study section member)  
National Science Foundation  
Netherlands Organisation for Scientific Research  
Swiss National Science Foundation  
US-Israel Binational Science Foundation  
Wellcome Trust

**Professional Memberships**

Association for Women in Science  
Cognitive Neuroscience Society  
International Society for Behavioural Neuroscience  
Psychonomic Society  
Society for Functional Near Infrared Spectroscopy  
Society for the Neurobiology of Language  
Society for Neuroscience

**Other Professional Activities**

Contributor to <i>aa</i> neuroimaging analysis package <a href="http://www.automaticanalysis.org">http://www.automaticanalysis.org</a>	2009–
Conference abstract reviewing: Society for the Neurobiology of Language	2009–
Conference paper reviewing: Cognitive Science Society	2017
Conference abstract reviewing: Organization for Human Brain Mapping	2009–2012

**Public Engagement**

University of Pennsylvania Neuroscience Boot Camp discussion leader	2011, 2012
MRC CBU hands-on exhibit at Royal Society summer science festival	2010
Brandeis Adult Learning Institute lecture	2003
Brandeis University Memory and Cognition Lab annual open house	2001–2005