

CURRICULUM VITAE
The Johns Hopkins University School of Medicine



Amanda M. Lauer

08/28/2024

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2025-present Professor, Department of Otolaryngology-Head and Neck Surgery, Center for Hearing and Balance, David M. Rubenstein Center for Hearing Research, Johns Hopkins University SOM

2020-present Secondary appointment, Department of Neuroscience, Johns Hopkins University SOM

2024-present Secondary appointment, Department of Functional Anatomy and Evolution, Johns Hopkins University SOM

2024-present Vice Director for Faculty Affairs (formerly Academic Affairs), Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University SOM

2024-present George T. Nager Endowed Professorship, Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University SOM

Personal Data

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Baltimore, MD 21205
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Education and Training

Undergraduate

1999 B.S., Psychology, St. Joseph's University/Philadelphia

Doctoral/graduate

2000 M.S., Psychology, St. Joseph's University/Philadelphia, concentration in Biopsychology

2006 Ph.D., Psychology, University of Maryland/College Park, concentration in Integrative Neuroscience, Primary mentor: Robert J. Dooling, Secondary: Marjorie Leek

Postdoctoral

2006-2010 Postdoctoral Fellow, Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University/Baltimore, Primary Mentor: Bradford May, Secondary: Howard Francis

2010-2011 Postdoctoral Fellow, Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University/Baltimore, Primary Mentor: David Ryugo

Professional Experience

2011-2013 Instructor, Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University SOM

2013-2018 Assistant Professor, Department of Otolaryngology-Head and Neck Surgery, Center for Hearing and Balance, David M. Rubenstein Center for Hearing Research, Johns Hopkins University SOM

2019-2025 Associate Professor, Department of Otolaryngology-Head and Neck Surgery, Center for Hearing and Balance, David M. Rubenstein Center for Hearing Research, Johns Hopkins University SOM

2020-present Secondary faculty, Department of Neuroscience, Johns Hopkins University SOM

2024-present Secondary faculty, Department of Functional Anatomy and Evolution, Johns Hopkins University SOM
 2024-present Vice Director for Academic Affairs, Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University SOM

PUBLICATIONS

Original Research (my trainees designated with underline)

1. Lohr BL, **Lauer AM***, Newman MR, Dooling RJ (2004). Hearing in the red-billed firefinch (*Lagonosticta senegala*) and the Spanish timbrado canary (*Serinus canaria*): The influence of natural and artificial selection on auditory abilities and vocal structure. *Bioacoustics* 14:83-98. *Role: performed hearing tests.
2. **Lauer AM**, Dooling RJ, Leek MR, Lentz JJ (2006). Phase effects in masking by harmonic complexes in three species of birds. *J Acoust Soc America* 119:1251-1259.
3. **Lauer AM**, Dooling RJ (2007). Evidence of hyperacusis in canaries with permanent hereditary high-frequency hearing loss. *Sem Hear* 28:319-326.
4. **Lauer AM**, Dooling RJ, Leek MR, Poling KP. (2008). Detection and discrimination of simple and complex sounds by Belgian Waterslager canaries. *J Acoust Soc America* 122:3615-3627.
5. **Lauer AM**, Dooling RJ, Leek MR (2009). Psychophysical evidence for damage to the active processing mechanism in the Belgian Waterslager canary. *J Comp Physiol A: Sens, Neur, Behav Physiol* 195:193-202.
6. **Lauer AM**, May BJ, Hao ZJ, Watson, J (2009). Analysis of environmental sound levels in modern rodent housing rooms. *Lab Anim* 38:154-159.
7. **Lauer AM**, Molis M, Leek MR (2009). Discrimination of time-reversed harmonic complexes by normal-hearing and hearing-impaired listeners. *J Assoc Res Otolaryngol* 10:609-619.
8. May BJ, **Lauer AM***, Roos MJ (2011). Impairments of the medial olivocochlear system (MOCS) increase the risk of noise-induced auditory neuropathy in laboratory mice. *Otol Neurotol* 32:1568-1578. *Role: performed auditory phenotyping experiments, data analysis.
9. Yang Y, Aitoubah J, **Lauer AM***, Nuriya M, Takamiya K, Jia Z, May BJ, Huganir RL, Wang L (2011). GluA4 is indispensable for driving ultra-fast neurotransmission across a high-fidelity central synapse. *J Physiol* 2011;589: 4209-4227. *Role: responsible for auditory phenotyping experiment, data analysis and interpretation.
10. **Lauer AM**, May BJ (2011). The medial olivocochlear system attenuates the developmental impact of early noise exposure. *J Assoc Res Otolaryngol* 12:329-343.
11. **Lauer AM**, May B (2011). Acoustic basis of directional acuity in laboratory mice. *J Assoc Res Otolaryngol* 12:633-645.
12. **Lauer AM**, El-Sharkawy AM, Kraitchman DL, Edelstein WA (2012). MRI acoustic noise can harm experimental and companion animals. *J Mag Res Imaging* 36:743-747.
13. **Lauer AM**, Fuchs PA, Ryugo DK, Francis HW (2012). Efferent synapses return to inner hair cells in the aging cochlea. *Neurobiol Aging* 33:2892-2902.
14. Lina IA, **Lauer AM** (2013). Rapid measurement of auditory filter shape in mice using the auditory brainstem response and notched noise. *Hear Res* 298:73-79.
15. Schettino A, **Lauer AM** (2013). The efficiency of design-based stereology in estimating spiral ganglion populations in mice. *Hear Res* 304:153-158.
16. **Lauer AM**, Connelly CJ, Graham H, Ryugo DK (2013). Morphological characterization of bushy cells and their inputs in the laboratory mouse (*Mus musculus*) anteroventral cochlear nucleus. *PLoS ONE* 8(8):e73308. doi:10.1371/journal.pone.0073308.
17. Hiebler S, Masuda T, Moser T, Liu A, Faust P, Chowdhury N, **Lauer A***, Bennett J, Watkins P, Zack D, Braverman N, Raymond G, Steinberg S (2014). The Pex1-G844D mouse: A model for mild human Zellweger spectrum disorder. *Mol Gen Metab* 111:522-532. *Role: responsible for auditory phenotyping experiment, data interpretation.
18. McGuire BM, Fiorillo B, Ryugo DK, **Lauer AM** (2015). Auditory nerve synapses persist in ventral cochlear nucleus long after loss of acoustic input in mice with early-onset progressive hearing loss. *Brain Res* 1605:22-30.

19. Sun DQ, Lehar M, Swarthout L, Dai C, **Lauer AM***, Carey JP, Mitchell DE, Cullen KE, Della Santina CC. (2015). Histopathologic changes of the inner ear in Rhesus monkeys after intratympanic gentamycin injection and vestibular prosthesis electrode array implantation. *J Assoc Res Otolaryngol* 16:373-87. *Role: assistance with microscopy/analysis.

20. Ngodup T, Goetz JA, McGuire BC, Sun W, **Lauer AM***, Xu-Friedman MA (2015). Activity-dependent, homeostatic regulation of neurotransmitter release from auditory nerve fibers. *Proc Nat Acad Sci USA* 112(20):6479-6484. *Role: joint senior author.

21. **Lauer AM** (2017). Minimal effects of age and exposure to a noisy environment in alpha9 nicotinic receptor knockout mice. *Front Neurosci* 11:304.

22. Cunningham C, Wu Z, Jafari A, Zhao B, Schrode K, Harkins-Perry S, **Lauer A***, Mueller U (2017). The murine catecholamine methyltransferase mTOMT is essential for mechanotransduction by cochlear hair cells. *eLife* 6:e24318. *Role: responsible for auditory phenotyping experiments, data interpretation.

23. Clause A, **Lauer AM***, Kandler K (2017). Mice lacking the alpha9 subunit of the nicotinic acetylcholine receptor exhibit deficits in frequency difference limens and sound localization. *Front Cell Neurosci* 11:167. *Role: joint senior author.

24. **Lauer AM**, Schrode K (2017). Sex bias in basic and preclinical noise-induced hearing loss research. *Noise Health* 9:207-212.

25. **Lauer AM**, Larkin G, Jones A, May BJ (2018). Behavioral animal model of the emotional response to tinnitus and hearing loss. *J Assoc Res Otolaryngol*; 19:67-81.

26. Villavisanis, DF, Schrode, KM, **Lauer AM** (2018). Sex bias in basic and preclinical age-related hearing loss research. *Biol Sex Diff*; 9:23.

27. Schrode, KM, Muniak, M, Kim, Y, **Lauer AM** (2018). Central compensation in auditory brainstem after damaging noise exposure. *eNeuro* 5(4) e0250-18.2018 1-19.

28. Rodríguez, G, Chakraborty, D, Schrode, K. M., Saha, R, Uribe, I, **Lauer, AM***, Lee, HK (2018). Cross-modal reinstatement of thalamocortical plasticity accelerates ocular dominance plasticity in adult mice. *Cell Reports*, 24:3433-3440. *Role: responsible for auditory phenotyping experiment, data interpretation.

29. Villavisanis DF, Berson E, **Lauer AM***, Cosetti MK, Schrode KM (2020). Sex differences in hearing loss: Perspectives from non-clinical research to clinical outcomes. *Otol Neurotol*, 41: 290-298. *Role: contributed to project conception, oversight, writing manuscript.

30. Wu, JS, Yi E, Manca M, Javaid H, **Lauer, AM***, Glowatzki, E (2020). Sound exposure dynamically induces dopamine synthesis in cholinergic LOC efferents for feedback to auditory nerve fibers. *eLife*, 9:p.e52419. *Role: oversight of auditory phenotyping and noise exposure experiments; contributed to conception of project, data interpretation.

31. Cunningham C, Qiu X, Wu Z, Zhao B, Peng G, Kim Y, **Lauer A***, Mueller U (2020). TMIE defines pore and gating properties of the mechanotransduction channel of mammalian cochlear hair cells. *Neuron*, 107:126-143. *Role: responsible for auditory phenotyping experiments.

32. Kobrina K, Schrode KM, Screven LA, Javaid H, Weinberg MM, Brown G, Board R, Villavisanis DE, Dent MI, **Lauer AM** (2020). Linking anatomical and physiological markers of auditory system degeneration with behavioral hearing assessments in a mouse (*Mus musculus*) model of age-related hearing loss. *Neurobiol Aging*, 96:87-103.

33. Pyott SJ, Mvan Tuinen M, Screven LA, Schrode KM, Bai, Barone CM, Price SD, Lysakowski A, Sanderfor M, Kumar S, Santos-Sacchi J, **Lauer AM***, Park TJ (2020). Functional, morphological, and evolutionary characterization of hearing in subterranean, eusocial African mole rats. *Curr Biol*, 30:4329-4341. *Role: responsible for auditory phenotyping experiments and conception of project, data interpretation. Featured in Science Daily: <https://www.sciencedaily.com/releases/2020/09/200903145006.htm>

34. Andresen NS, Coreas S, Villavisanis D, **Lauer AM** (2021). Comparison of age-related pigmentary changes in the auditory and vestibular systems within mouse and human temporal bones. *Front Neurosci*, 15:570.

35. Lang X, Qui X, Dionne G, Cunningham CL, Pucak ML, Peng G, Kim Y, **Lauer A***, Mueller U (2021). CIB1 and CIB3 are auxiliary subunits of the mechanotransduction of hair cells. *Neuron*, 109:2131-2149.e15. *Role: responsible for auditory phenotyping experiments.

36. Vicencio-Jimenez S, Weinberg M, Bucci G, **Lauer A** (2021). Olivocochlear changes with aging predominantly affect the medial olivocochlear system. *Front Neurosci*. 1085.

37. Weinberg MM, **Retta, NA, Schröde KM, Screven LA, Peterson JL**, Moss. CF, Sterbing S, **Lauer AM** (2021). Deafness in an auditory specialist, the big brown bat (*Eptesicus fuscus*). *Hear Res*, 412, 108377.

38. **Andresen NS**, Kehoe Winslow M, Gregg L, Seal SM, Lehar M, Ward BK, **Lauer AM** (2022). Insights into presbycusis from the first temporal bone laboratory within the United States. *Otol Neurotol*, 43(3):400-408.

39. **Kim Y, Schröde KM, Engel J, Vicencio-Jimenez S, Rodriguez G, Lee H, Lauer AM** (2022). Auditory behavior in adult-blinded mice. *J Assoc Res Otolaryngol*, 23, 225-239.

40. **Burke K, Screven LA, Kobrina A, Charlton PE, Schröde K, Villavisanis DF, Dent ML, Lauer AM** (2022). Effects of noise exposure and aging on behavioral tone detection in quiet and noise by mice. *eNeuro*, 9 (3) ENEURO.0391-21.2022

41. **Capshaw G, Vicencio-Jimenez S, Screven LA, Burke K, Weinberg M, Lauer AM** (2022). Physiological evidence for delayed age-related hearing loss in two long-lived rodent species (*Peromyscus leucopus* and *P. californicus*). *J Assoc Res Otolaryngol*, 23, 617-631.

42. **Schröde KM, Dent MD, Lauer AM** (2022). Sources of variability in auditory brainstem response thresholds in a mouse model of noise-induced hearing loss. *J. Acoust. Soc. Am.* 152, 3576-3582.

43. Krishnan PS, **Lauer AM***, Ward BK, Seal, SM, Nieman CL, **Andresen NS** (2023). Sex and race representation in temporal bone histopathology studies in the United States. *Ear Hear*, 2:10-97. *Role: overall project guidance.

44. Shen L, **Andresen NS**, Chari DA, Pogson JM, **Lauer AM***, Rabbitt RD, Carey JP, Santos F, Ward BK (2023). Otolith membrane herniation, not semicircular canal duct dilation, is associated with decreased caloric responses in Ménière's Disease. *J Assoc Res Otolaryngol*. 24, 95–106. *Role: involved in histology data collection and analysis.

45. Zhang Y, Hiel H, Vincent PF, Wood MB, Elgooyhen AB, Chien W, **Lauer A***, Fuchs PA (2023). Engineering olivocochlear inhibition to reduce acoustic trauma. *Mol. Therapy-Methods & Clin. Devel.* 29, 17-31. *Role: involved in execution and interpretation of experiments.

46. Akbar AF, **Sayyid ZN**, Roberts DC, Hua J, Paez A, Cao D, **Lauer AM***, Ward BK (2023). Acoustic noise levels in high-field magnetic resonance imaging scanners. *Oto Open* 7: e79 <https://doi.org/10.1002/oto2.79> *Role: involved in design, execution, and interpretation of experiments.

47. **Burke K, Burke M, Lauer AM** (2023). Auditory brainstem response analysis program. *MethodsX*. 11:102414.

48. Kalinowsky AJ, Luperchio TR, **Schröde KM**, Harris JR, Zhang L, DeLeon VB, Fahrner JA, **Lauer AM**, Bjornsson HT, (2024). KMT2D deficiency causes sensorineural hearing loss in mice and humans. *Genes*, 15(1), p.48.

49. Charlton PE, **Burke K, Kobrina A, Lauer AM***, Dent ML* (2024). The perception of ultrasonic vocalizations by laboratory mice following intense noise exposures. *J Acoust Soc Am*. 155(2), 867-878. *co-senior authors

50. Jain A, **Perdomo D**, Nagururu N, Li JA, Ward BK, **Lauer AM**, Creighton FX (2024). SVpath: A deep learning tool for analysis of stria vascularis from histology slides. *J Assoc Res Otolaryngol*, 25, 1-8.

51. **Mondul JA, Burke K**, Morley B, **Lauer AM** (2024). Alpha9alpha10 knockout mice show altered physiological and behavioral responses to signals in masking noise. *J Acoust Soc Am* 155, 3183-3194.

52. **Capshaw G, Diebold CA, Sterbing SJ, Lauer AM,*** Moss CF (2024). Echolocating bats show species-specific variation in susceptibility to acoustic forward masking. *J Acoust Soc Am*, 156(1), 511-523. Selected for journal cover. *co-senior authors

53. **Burke K, Screven LA, Vicencio-Jimenez S, Lauer AM** (2024). Auditory brainstem response audiometry in a tauopathy mouse model of human Alzheimer's Disease. *JASA-Express Letters*, 4(7).

54. **Postolache M, Graham CJC, Burke K, Lauer AM***, Xu-Friedman M (2024). Effects of age on responses of principal cells of the mouse anteroventral cochlear nucleus in quiet and noise. *eNeuro*, 11(8). *co-senior authors

55. **Capshaw G, Diebold CA, Adams DM, Rayner J, Wilkinson GS, Moss CF, Lauer AM** (2024). Resistance to age-related hearing loss in the echolocating big brown bat (*Eptesicus fuscus*). *Proceedings Royal Society of London B: Biological Sciences*. 291, 20241560. Featured in Science news and Nature news

56. **Andresen NS, Hiel H, Graham CJ, Balhi Y, Carey JP, Lauer AM, Ward BK** (2024). Harvest of vestibular end-organs under physiologic conditions during labyrinthectomy. *JOVE*, (213), e67523.

57. Wong NF, Brongo SE, Forero EA, Sun S, Cook CJ, **Lauer AM**, Müller U, Xu-Friedman MA (2025). Convergence of type 1 spiral ganglion neuron subtypes onto principal neurons of the anteroventral cochlear nucleus. *J Neurosci.*, 45(6).

58. Castagna VC, Boero LE, Di Guilmi MN, Di Meo CC, Ballester JA, Fuchs PA, Lauer AM, Elgoyhen AB, Gomez-Casati ME (2025). Strengthening Medial Olivocochlear Feedback Reduces the Developmental Impact of Early Noise Exposure. *J Neurosci*.

59. Reijntjes DO, Burke K, Paul S, Mueller U, Glowatzki E, **Lauer AM** (2025). Increased vulnerability to noise exposure of low spontaneous rate type 1C spiral ganglion neuron synapses with inner hair cells (Pre-Print). *bioRxiv*, 2025-05.

60. Erra A, Chen J, Miller CM, Chrysostomou E, Barret S, Kassim YM, Friedman RA, **Lauer A**, Ceriani F, Marcotti W, Carroll C, , Manor U (2025). An Open-Source Deep Learning-Based GUI Toolbox For Automated Auditory Brainstem Response Analyses (ABRA). *bioRxiv*, pp.2024-06.

61. Santi A, Moore S, Fogelson KA, Wang A, Lawlor J, Amato J, Burke K, **Lauer AM**, Kuchibhotla KV (2025). Revealing hidden knowledge in amnestic mice. *bioRxiv*, pp.2025-01.

Case Reports

1. Ahmad SA, Zawitoski H, Hiel H, **Lauer A**, Kaufman A, Ward BK (2025). A case of calcification discovered within the membranous labyrinth during resection of an acoustic neuroma. *Otol Neurotol*, 10-97.
2. Balhi Y, Nauen D, **Lauer AM**, Ward BK (2025). Labyrinthine sequestrum: Otopathologic description of a rare condition in a case from the temporal bone histopathology archives. *Otol Neurotol*, 10-97.

Review Articles

1. **Lauer AM**, Behrens D, Klump G (2017) Acoustic startle modification as a tool for evaluating auditory function in the mouse: progress, pitfalls, and potential. *Neurobiol Biobehav Rev*, 77:194-208.
2. **Lauer AM**, Dent ML, Sun W, Xu-Friedman MA (2019). Effects of nontraumatic noise and conductive hearing loss on auditory system function. *Neurosci*, 407:182-191. (invited)
3. **Lauer AM***, Vicencio-Jimenez S, Delano PH (2022). Olivocochlear efferent effects on perception and behavior. *Hear Res*, 419, 108207. *Role: senior PI and lead author (invited)
4. Buffstein R, Amoroso V, Andziak B, Avdieiev S, Azpuruia J, Barker AJ, Benett NC, Brieño-Enríquez MA, Bronner GN, Coen C, Delaney MA, Dengler-Crish CM, Edrey YH, Faulkes CG, Frankel D, Friedlander G, Gibney PA, Gorbunova V, Hine C, Homes MH, Jarvis JUM, Kawamura Y, Kutsukake N, Kenyon C, Khaled WT, Kikusui T, Kissil J, Lagestee S, Larson J, **Lauer A***, Lavrenchenko LA, Lee A, Levitt JB, Lewin GR, Lewis Hardell KN, Lin, TD, Mason MJ, McCloskey D, McMahon M, Miura K, Mogi K, Narayan V, O'Connor TP, Okanoya K, O'Rain MJ, Park TJ, Place NJ, Podshivalova K, Pamenter ME, Pyott SJ, Reznick J, Ruby JG, Salmon AB, Santos-Sacchi J, Sarko DK, Seluanov A, Shepard A, Smith M, Storey KB, Tian X, Vice EN, Viltard M, Watarai A, Wywial E, Yamakawa M, Zemlemerova ED, Zions M, St. John Smith E (2022). The naked truth: a comprehensive clarification and classification of current 'myths' in naked mole-rat biology. *Biol Rev*, 97, 115-140. *Role: contributing author re. hearing capabilities of naked mole rats.
5. Cooper LN, Ansari MY, Capshaw G, Galazyuk A, **Lauer AM**, Moss CF, Sears KE, Stewart M, Teeling EC, Wilkinson GS, Wilson RC. (2024). Bats as instructive animal models for studying longevity and aging. *Annals of the New York Academy of Sciences*, 1541, 10-23.

Book Chapters

1. Dooling RJ, Dent ML, **Lauer AM**, Ryals BM (2008) Functional recovery following hair cell regeneration in birds. In Salvi, R., Popper, A. N., and Fay, R. R. (eds.) *Springer Handbook of Auditory Research: Regeneration and Repair in the Auditory System*. Springer: New York, 117-140.
2. **Lauer AM**, Engel Jr. JH, Schrode K (2018) Rodent sound localization and spatial hearing. In Dent, M. L., Fay, R. R., Popper, A. N. (eds). *Rodent Bioacoustics*, Springer:NY, 107-130.
3. Fuchs PA, **Lauer AM** (2019) Efferent inhibition of the cochlea. In Petit, C., Richardson, G. (eds). *Function and Dysfunction in the Cochlea*. Cold Spring Harbor Perspectives in Medicine, Cold Spring Harbor Press. doi: 10.1101/cshperspect.a033530.
4. Kim Y, Schrode KM, **Lauer AM** (2022). Auditory brainstem response (ABR) measurements in small mammals. In Groves, AK (ed.). *Developmental, Physiological and Functional Neurobiology of the Inner Ear*. Neuromethods. 176, 357-374 Springer.

5. Pyott S, Manor U, **Lauer AM** (in press). Cochlear transduction and the molecular basis of cochlear pathology. In Francis HW et al. (eds). Cummings Otolaryngology: Head and Neck Surgery 8th edition, Vol 4/Otology section.

FUNDING

EXTRAMURAL Funding

Research Extramural Funding

Current

12/01/2025- 11/30/2030	Resilience and susceptibility to anthropogenic noise Award number pending NSF Neurobiology in Changing Ecosystems program Total Direct Costs: \$1,326,657 PI: Moss Co-Investigator, 2% effort
7/1/2022- 6/30/2027	Type II afferents and cochlear damage R01 DC016559 NIH/NIDCD PI: Glowatzki, E Total Direct Costs: \$2,381,605 Co-Investigator, 1-10% effort (varies by year)
9/16/2022- 7/31/2027	Johns Hopkins human temporal bone resource U24 DC020850* NIH/NIDCD PIs: Lauer, Carey (MPI, corresponding PI: Lauer) Total Direct Costs (parent award): \$2,619,176 Bioethics of archival human temporal bone collections supplement TDC: \$195,995 Diversity supplement TDC: \$150,249 Principal Investigator, 10-15% effort (varies by year) *This award is one of five to US institutions forming a Human Temporal Bone Research Network (JHU, MEEI, U. Minnesota, UCLA, Stanford)
4/01/2023- 3/31/2026	Behavioral and physiological measurements of hearing in mouse models of Alzheimer's Disease R03 AG081747 (NCE) NIH/NIA Total Direct Costs: \$200,000 (subaward \$100,000) Common Fund supplement Total Direct Costs: \$128,902 (subaward \$50,000) PIs: Lauer, Dent (MPI) Principal Investigator, 10-20% effort (varies by year)
4/01/2025- 3/31/2030	Cholinergic modulation of cochlear plasticity R01 DC001508 (NCE; renewal scored 2 nd percentile Oct 2024, Pending) NIH/NIDCD PI: Lauer, Amanda Total Direct Costs: \$3,494,958 Principal Investigator, 20% effort
8/1/2023- 7/31/2026	Rational design of magnetic nanoparticles for drug delivery K08 DC020780 (subaward) NIH/NIDCD PI: Sun, Daniel (Lauer is subsite PI) Total Direct Costs (subaward): \$96,589 Co- Principal Investigator, 1% effort (no salary support; PI moved to another university, but part of project is being performed at JHU)

4/1/2024-
3/31/2029 Cellular mechanisms of auditory processing deficits in a mouse model of Fetal Alcohol Spectrum Disorders
R01 AA031026
NIH/NIAAA
Total Direct Costs: \$2,000 (consultant fees)
PI: Ragunathan, Padmashri
Consultant, auditory phenotyping, 0% effort

Pending

n/a

Previous (as faculty)

1/1/2011- Consequences of hereditary hearing loss in the auditory brainstem
12/31/2011 No identification number assigned
 American Hearing Research Foundation
Total Direct Costs: \$20,000
Principal Investigator, 50% effort

3/30/2014- Collection of brain specimens from cognitively phenotyped mice with hearing loss
12/31/2014 Action on Hearing Loss Flexi Grant
Total Direct Costs: \$6,214
Principal Investigator, 0% effort (grant did not allow PI salary)

12/1/2012- Perceptual and central auditory consequences of noise-induced hearing loss
11/30/2015 R03 DC0012352
 NIH/NIDCD
Total Direct Costs: \$306,000 (incl. diversity supplement)
Principal Investigator, 65% effort

1/1/2013- Behavioral animal model of the emotional response to tinnitus
12/31/2016 No identification number assigned
 Tinnitus Research Consortium
Total Direct Costs: \$300,000
PI: May
Co- Principal Investigator, 25% effort

12/1/2015- Optimizing hearing with top-down brain control of the ear
11/30/2016 No identification number assigned
 Capita Foundation
Total Direct Costs: \$10,000
Principal Investigator 0% effort (grant did not allow PI salary)

7/1/2016- Role of serotonin in tinnitus
6/30/2018 No identification number given
 Gift from Liquin Zheng
Total Direct Costs: \$128,000
Principal Investigator, 30% effort

2/1/2017- Role of stress, anxiety and serotonergic signaling in tinnitus
12/31/2020 No identification number assigned
 Action on Hearing Loss
Total Direct Costs: \$170,400
Principal Investigator, 0% effort (grant does not allow PI salary)

4/1/2018- Genetics of Fuchs Corneal Dystrophy
3/31/2022 R01 EY016835

NIH/NEI	
Total Direct Costs: \$1,250,000 (Lauer lab share \$90,809)	
PIs: Riazzudin, Gottsch	
Co-Investigator, 2% effort Years 1-4, measuring hearing loss and underlying pathology in mutant mice	
1/1/2021- 12/31/2021	Optimization of hearing via direct brain control of the auditory nerve No identification number assigned John J. Mitchell Trust Total Direct Costs: \$15,000 Co- Principal Investigator with Glowatzki, 0% effort (grant does not fund PI salary)
3/1/2017- 2/28/2023	Activity-dependent regulation of auditory nerve synapses in the cochlear nucleus R01 DC015508 NIH/NIDCD Total Direct Costs: \$1,250,000 (sub-award \$94,197) PI: Xu-Friedman (University at Buffalo) Co-Investigator, 5% effort, measuring anatomical consequences of abnormal auditory input
5/1/2018- 4/30/2024	Age differences in perceptual consequences of noise exposure R01 DC016641 (NCE) NIH/NIDCD PIs: Dent, Lauer (MPI) Total Direct Costs (parent award): \$1,330,057 Admin. Supplement for Alzheimer's Disease research Total Direct Costs (2020): \$186,265 Admin. Supplement for slide scanner purchase Total Direct Costs: (2021): \$224,411 Principal Investigator, 15-25% effort (varied by year)
9/1/2018- 8/30/2024	Afferent synaptic transmission in the mammalian cochlea R01 DC006476 (NCE; renewal planed August 2025) NIH/NIDCD Total Direct Costs: \$2,279,756 PI: Glowatzki Co-Investigator, 5-10% effort (varied by year)
9/01/2023- 8/31/2025	Cholinergic modulation of cochlear plasticity R01 DC001508 NIH/NIDCD PI: Lauer, Amanda Total Direct Costs: \$350,485 Principal Investigator, Co-Principal Investigator 15% effort (took over as PI 04/2024)
7/1/2018- 06/30/2025	Role of olivocochlear efferents in age-related hearing dysfunction R01 DC017620 (2 nd NCE) NIH/NIDCD Total Direct Costs (original award): \$1,481,670 Admin. Supplement for Alzheimer's Disease research Total Direct Costs (2019): \$93,937 Principal Investigator, 10-30% effort

Educational Extramural Funding

Current

9/1/2023- 7/30/2028	STEMM opportunities for college students with Hearing loss to Engage in Auditory Research (STEMM-HEAR) R25 DC020698-01A1 NIH/NIDCD PI: Rananather, T
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Total Direct Costs: \$1,044,039
 Co-Program Director, 5% effort

7/1/2024-
 6/30/2029
 Research training in otolaryngology program
 R25 DC021243 (recommended for funding June 2023; start date delayed 1 yr to finish existing T32)
 NIH/NIDCD
 PI: Carey, J; Lauer, A (MPI; corresponding PI: Carey)
 Total Direct Costs: \$1,873,891
 Co-Program Director, 2.75% effort

Previous

7/1/2020-
 6/30/2024
 Research training in otolaryngology
 T32 DC000027 (transitioning to an R25 mechanism)
 NIH/NIDCD
 PI: Carey, John
 Total Direct Costs: \$1,253,568
 Program Co-Director, 2.5% effort (PI and co-I salary not funded by grant)

INTRAMURAL Funding

Current

10/1/2024-
 6/30/2026
 Expanding Animal Models of Age-Related Hearing Loss: Cellular Resistance Mechanisms and Cognitive
 Sequalae
 Rubenstein Fund for Hearing Research, Department of Otolaryngology-HNS
 PIs: Lauer, Mueller
 Total Direct Costs: \$226,000 (Lauer lab share; Mueller lab receives equal amount)
 Principal Investigator, 5% effort

Pending

Previous

7/1/2015-
 12/31/2016
 Probing top-down cerebellar control of hearing
 Johns Hopkins Catalyst Award
 PI: Lauer
 Total Direct Costs: \$75,000
 Principal Investigator, 30% effort

7/1/2015-
 6/30/2017
 Role of Cerebellum in Hearing
 Rubenstein Fund for Hearing Research, Department of Otolaryngology-HNS
 PIs: du Lac, Lauer
 Total Direct Costs: \$225,000
 Principal Investigator, 30% effort

7/1/2017-
 6/30/2018
 Effects of cross-modal sensory plasticity induced in adulthood on hearing
 Project 9
 Rubenstein Fund for Hearing Research, Department of Otolaryngology-HNS
 PIs: Lee, Lauer
 Total Direct Costs: \$100,000
 Principal Investigator, 15% effort

7/1/2018-
 6/30/2019
 Electrophysiological diagnostic and prognostic assessments for concussion
 Johns Hopkins Discovery Award
 Total Direct Costs: \$99,826
 PIs: Scholl, Lauer, Koliatsos
 Principal Investigator, 10% effort

7/1/2017- 6/30/2020	Hearing susceptibility and resistance to noise Project 10 Rubenstein Fund for Hearing Research, Department of Otolaryngology-HNS PIs: Moss, Sterbing-D'Angelo, Lauer Total Direct Costs: \$208,000 Principal Investigator, 10% effort
3/1/2022- 2/28/2023	Development of a searchable database for human temporal bone otopathology education and research Johns Hopkins Institute for Data Intensive Engineering and Science Total Direct Costs: \$25,000 Principle Investigator, 0% effort (did not fund PI salary)

EDUCATIONAL ACTIVITIES

Teaching

Classroom instruction

JHMI/Regional

2011- present	Lecturer, graduate/postdoctoral, Structure and Function of the Auditory and Vestibular Systems (EN.580.626), co-director in 2020 , Center for Hearing and Balance, Johns Hopkins University School of Medicine, Baltimore, MD <ul style="list-style-type: none"> ○ November 2011: Efferent Effects on Hearing ○ September 2014: Masking and Frequency Selectivity ○ October 2014: Loudness, Intensity, and Pitch ○ October 2015: Physiology of Hearing Loss ○ November 2015: Rodent Auditory Phenotyping ○ August 2017: Introduction to the Auditory System ○ September 2017: Efferent Effects on Hearing; Anatomy and Perception in Hearing Loss ○ September 2018: Intro. to the Auditory System; Physiology of Hearing Loss; Cochlear Nucleus ○ September 2019: Physiology of Hearing Loss ○ September 2020: Intro. to the Auditory System; Physiology of Hearing Loss; Cochlear Nucleus ○ September 2021: Physiology of Hearing Loss Journal Club Discussion; Cochlear Nucleus ○ September 2022: Assessing Hearing Loss in Humans and Animal Models; Current Topics in Hearing Loss Journal Club Discussion ○ September 2023: Assessing Hearing Loss in Humans and Animal Models; Current Topics in Hearing Loss Journal Club Discussion ○ September 2024: Assessing Hearing Loss in Humans and Animal Models; Current Topics in Hearing Loss Journal Club Discussion ○ September 2025: Assessing Hearing Loss in Humans and Animal Models; Current Topics in Hearing Loss Journal Club Discussion
2013-2015	Guest lecturer, undergraduate, The Auditory System (AS.080.320.001; course director D. Boatman), Johns Hopkins University, Baltimore, MD <ul style="list-style-type: none"> ○ March 2013 Efferent Effects on Hearing ○ March 2014 Central Auditory Consequences of Hearing Loss ○ March 2015 Efferent Effects on Hearing ○ March 2015 Efferent Effects on Hearing
2014-2024	Research ethics training coordinator and instructor, graduate/postdoctoral/resident/faculty, Center for Hearing and Balance, Johns Hopkins University School of Medicine, Baltimore, MD <ul style="list-style-type: none"> ○ August 2014 Record-keeping, Data Falsification, Fabrication, Competing Interests ○ January 2016 Mentoring and Managing Conflicts of Interest ○ January 2017 Ethics of the Patient H.M. Data Controversy ○ January 2018 Rigor and Reproducibility, Ethics of the Power Pose Research Controversy ○ June-August 2021 Predatory publishing and paper mills, preprints, paper quality vs quantity, reproducibility, statistical power, bias, research misconduct

- January 2023 Research Misconduct Case Study; April 2023 Peer Review; Publication Hype (co-coordinated with Gene Fridman); November 2023 Responding to fraud allegations as a co-author
- April 2024 Neuralink implant study

2017-2018 Auditory system lab instructor, graduate, Neurocognition II (ME.440.812), Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD

- January 2017 Auditory Brainstem response and acoustic startle
- January 2018 Auditory Brainstem response and acoustic startle

2019 Auditory Brainstem Response and Acoustic Startle Lab, Genes to Society Nervous System and Special Senses Research Laboratory Experiences, first year medical students, Johns Hopkins University School of Medicine

2020 Discussion panel member, Rigor, Reproducibility, and Responsibility in Science course (ME:440.819), Trends in Authorship and Publishing, graduate, Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD

2021-2024 Guest lecturer (introduction to NRSA, grant component review, mock study section), Grant Writing Skills (ME440.823), graduate, Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD

International

2016-2023 Course faculty, **co-director Nov 2018-2023**, undergraduate, Neurobiology of Hearing, University of Salamanca Study Abroad (JHU course AS.080.362 and University of Connecticut course MEDS 5377), Salamanca, Spain

- Lectures: Auditory Nerve; Cochlear Nucleus; Olivocochlear Efferent Effects on Hearing; Hearing Loss, Tinnitus, and Hyperacusis; Otopathology & Perceptual effects of Hearing Loss
- This 5-week study abroad course is organized in collaboration with faculty from UCONN and Univ. of Salamanca to include students from multiple US and European universities. We organize US- and Europe-based experts in auditory science to deliver lectures 2 hours/day, four days/week, manage teaching assistants, and handle student issues that come up during their time away from home. Part of the course duties include organizing networking activities between visiting course faculty, Univ. of Salamanca faculty, TAs, and students. (course cancelled 2020, 2021 due to COVID19)

CME instruction

Note: several items listed under Invited Talks qualified for CME credits

JHMI/Regional (others listed under Invited Talks)

June 2017 Lecturer, medical professionals, Effects of hearing loss on the auditory brainstem, Dept. of Otolaryngology-HNS Faculty Research Symposium, Johns Hopkins University School of Medicine, Baltimore, MD.

2019-2021 Organizer and facilitator, medical professionals, annual Research Integrity Training, Dept. of Otolaryngology-HNS, Johns Hopkins University School of Medicine, Baltimore, MD.

- Case studies discussions
- Record keeping and data management
- Data sharing and management

National (listed under Invited Talks)

International (listed under Invited Talks)

Workshops /seminars

JHMI/Regional

2012, 2016-2021 Instructor, faculty/graduate/postdoctoral, Center for Hearing and Balance Seminar Series, Auditory Phenotyping seminars, Johns Hopkins University School of Medicine, Baltimore, MD.

- January 2012 Auditory Phenotyping
- November 2016 Rodent Behavior
- December 2016 Auditory Brainstem Response
- September 2021 Auditory Phenotyping

2011-2013 Course faculty, Rodent Pathobiology Phenotyping course (ME.680.712), Johns Hopkins University School of Medicine, Baltimore, MD.

- July 2011 Auditory Brainstem Response
- July 2012 Auditory Brainstem Response
- July 2013 Auditory Brainstem Response (lecture given by postdoctoral fellows in later years)

2015-2019 Coordinator/Instructor, graduate/postdoctoral, Center for Hearing and Balance Seminar Series Professional Development Seminars, Johns Hopkins University School of Medicine, Baltimore, MD.

- October 2015 Ph.D. Career Panel--academia, organizer and participant
- May 2015 Ph.D. Career Panel--government and industry, organizer
- November 2015 Networking
- April 2018 Applying for grants
- April 2019 Authorship

2019 Coordinator/Instructor, faculty/postdoctoral, Early Career Grant Review and Summary Statements workshop, Dept. of Otolaryngology-HNS, Johns Hopkins University School of Medicine, Baltimore, MD.

2020 Instructor, Crafting Compelling K and F Award Proposals, Office of Postdoctoral Affairs, Johns Hopkins University School of Medicine, Baltimore, MD.

2020-present Curriculum Development/Coordinator/Instructor, postdoctoral*, Resident Research Professional Development didactics & discussions (rotating topics based on participant feedback), Johns Hopkins University School of Medicine, Baltimore, MD.

*medical student researchers, early career faculty, fellows, and postdoctoral fellows invited to participate starting in 2023

National

2012-2018 Workshop faculty, faculty/graduate/postdoctoral (*international attendees*), Mouse as an Instrument for Ear Research (now Modeling Hearing and Balance Disorders in Mice: the HEAR@JAX Workshop), The Jackson Laboratory, Bar Harbor, ME, **Organizing Committee**, 2013-2018

- September 2012 Behavioral Auditory and Vestibular Phenotyping Lab
- August 2014 Behavioral Auditory and Vestibular Phenotyping Lab
- September 2016 Behavioral and Physiological Auditory and Vestibular Phenotyping Lab
- September 2018 Introduction to Sound and Sound Perception, Introduction to the Central Auditory System, Effects of Hearing Loss on the Brainstem lectures

2013-2024 Auditory Brainstem Response Lab Instructor (course faculty), graduate/postdoctoral (*international attendees*), Biology of the Inner Ear course, Marine Biological Laboratory, Woods Hole, MA (occurs every other year; course canceled in 2021 because of COVID19)

International

July 2018 Instructor, Audiology Workshop on Hearing Disorders and Evaluation, Dept. of Communicative Disorders and Sciences, University at Buffalo, State University of New York, Buffalo, NY (held in US, but *all international participants*—China).

Jan 2025 Webinar panelist, Neural Adaptation in Changing Ecosystems—An Overview (pt 1 of digital learning series), Society for Neuroscience& Kavli Foundation, virtual w/ international attendees.

Educational Program Building / Leadership

2019-present **Co-Director** of Otolaryngology T32/R25 Resident Research Training Program, Dept. of Otolaryngology-HNS; served as Co-I for T32 renewal in 2019 and Co-PI transition to R25 mechanism in 2024; <https://www.hopkinsmedicine.org/otolaryngology/education/residency/r25-research>

- T32 to R25 Planning Committee
- Resident Research Training Program Steering Committee

2018-present Advisor, STEMM opportunities for college students with Hearing loss to Engage in Auditory Research (STEMM-HEAR) program to increase research opportunities for students with hearing loss (Directors: Ratnanather, & AG Bell Foundation); **Co-PD** of R25 funded as of 9/1/2023 (PI: Ratnanather)

Mentoring

Pre-doctoral Advisees /Mentees

Medical Students

2014-2015 Jordan Swift, Prashant Kumar Singh (VISMED); LiYang Tang, JHU medical student

2020 Dillan Villavisanis, OHNS research elective (virtual), Icahn School of Medicine class of 2023, Plastic Surgery resident, UPENN

2022-2023 Dianela Perdomo,* summer research fellow and research elective, Johns Hopkins University School of Medicine; Shared publication #50

2022-2023 Diane Jung,* gap year research fellow, Johns Hopkins University School of Medicine class of 2024; Otolaryngology resident, Univ. Miami; Shared publication #58

2023 Nazrawit Retta, summer research, Virginia Commonwealth University School of Medicine class of 2026

2023 Maria Camila Hurtado,* JH MSTAR summer research program, Arizona State University School of Medicine class of 2026; recipient of 2024 Assoc. for Research in Otolaryngology Midwinter Meeting Travel Award

2025 Andrew Tran,** JH MSTAR summer research program, Thomas F. Frist, Jr. College of Medicine class of 2028

2025-2026 Abigail Montalmant, R25 medical student (visiting JHU), CUNY SOM

2025-2026 Nathan Jacob, R25 medical student (visiting JHU), UCF SOM

*co-mentored with Bryan Ward, MD

** co-mentored with John Carey, MD

Graduate students

Primary

2019-2020 Research Advisor for Abhijit Roy, Masters degree student in Acoustical Studies, Johns Hopkins University Peabody Institute Class of 2020

2019-2020 Preceptor for Jamie Peterson, Masters degree thesis, Johns Hopkins University, Art as Applied to Medicine Class of 2020, Professional Medical and Biological Illustrator at Osso VR; Awards and publications: Vesalius Trust Research Grant; Shared publication #37

2021 Research rotation advisor for Andrew Du, PhD Student in Neuroscience, Johns Hopkins University

Secondary

July 2019 Kali Burke, visiting PhD student from University at Buffalo Cognitive Psychology program, training in anatomical specimen preparation, microscopy, and quantitative analysis; see additional under postdocs

2021 Margaret Postolache, visiting PhD student from University at Buffalo Neuroscience program, training in anatomical specimen preparation of auditory brainstem, microscopy, and quantitative analysis; ; shared publication #54

Undergraduate students (selected; mentored over 30 students)

2008-2009 Anna Chambers, B.S. in Neuroscience Johns Hopkins University, PhD Harvard University, researcher at University of Oslo

2011-2013 Joan Lina, B.S. in Biomedical Engineering from Johns Hopkins University, MD from University of Maryland, residency in Otolaryngology-HNS at Johns Hopkins University School of Medicine, now laryngology fellow at Vanderbilt SOM; Received the 2011 Fellowship for Unbiased Stereology; Shared publication #14

2011-2013 Heather Graham, B.A. and M.A. from University of Maryland Baltimore County, Designer at Asymmetrik; Shared publication #16

2013 Benjamin Fiorillo (Summer Internship Program), B.S. in Biology from Bowdoin College, MD from Tufts University School of Medicine class of 2019, Anesthesiology residency & fellowship at Emory University; Shared publication #18

2011-2014 Amy Schettino, B.S. in Neuroscience from Johns Hopkins University, MD from Yale University class of 2019, Otolaryngology residency at the University of Pennsylvania; Awards and Publications: Provost's Undergraduate Research Award; Shared publication #15

2014 Seal-bin Han, B.S. in Electrical Engineering from Johns Hopkins University, entrepreneur; at Hook Holdings Founder & CEO; Awards: Provost's Undergraduate Research Award for Summer 2014

2015-2016 James Engel B.S. from Loyola University, M.S. in Molecular Biology from Johns Hopkins Bloomberg School of Public Health, Jacobs School of Medicine and Biological Sciences starting July 2025; Shared publications: # 39, book chapter #1

2016 Hamad Javaid, B.S. in Biology from University of Maryland Baltimore County, M.S. student in Public Health, George Washington University, Logistics Specialist at Parraid, LLC; Shared publication #30

2016-2018 Dillan Villavisanis, Johns Hopkins University student in Anthropology class of 2018, Hodson Scholar, Icahn School of Medicine class of 2022, now Resident in Plastic Surgery at UPENN; Summer Training and Research Award for Summer 2017; Association for Research in Otolaryngology Travel Award 2018; Science Talk Travel Award 2018; Acoustical Society of America Robert Young Research Award 2018; Acoustical Society of America James E. West Fellowship 2018; Hispanic Scholarship Fund scholarship 2018; 2nd place Best Student Presentation Award, Acoustical Society of America Washington, DC Chapter, 2018; Shared publications #24, 29, 32, 34, 40

2018, 2019 Garrett Brown (JHU Summer Internship Program and STEMM-HEAR), Biology, University of Florida class of 2020 (premed), now medical student at Donald and Barbara Zucker SOM at Hofstra/Northwell class of 2025; Received tuition scholarship to Hofstra/Northwell Shared publication #32

2018-2019 Naasir Albright, Stevenson University Biology honors project, class of 2019, now laboratory assistant at Q² Solutions and graduate student North Carolina Central University

2018-2021 Lauren (Brewster) McCray, Johns Hopkins University student in Molecular Microbiology class of 2021; medical student at Baylor College of Medicine class of 2025, now Clinical Research Fellow in Otolaryngology at MUSC; Received Provost's Undergraduate Research Award for Summer 2020

2018-2019 Nazrawit Retta, Johns Hopkins University student in Neuroscience class of 2019 and visiting summer student at JHUSOM 2023 and 2024, now medical student at Virginia Commonwealth University class of 2026; Summer Training and Research Award for Summer 2018; Teach for America 2019-2020; Shared publication #37

2019 Lydia Gutema, Johns Hopkins University student in Biology class of 2019; research technologist, Johns Hopkins University; Emory University Biochemistry, Cell, and Developmental Biology PhD program

2019-2021 Sarah Coreas, Johns Hopkins University student in Molecular and Cellular Biology class of 2021; Northeast Ohio Audiology Consortium (Univ. Akron) graduate program & Julie S. Kelly Memorial Scholarship; Shared publication #34

2019-2021 Sabrina Rainsbury, Johns Hopkins University student in Spanish class of 2021, now medical student at UCLA Geffen SOM (full scholarship)

2021	Talia (Raikin) Feingold, Behavioral Biology, Johns Hopkins University student class of 2021; Univ. of Pennsylvania School of Veterinary Medicine class of 2025
2021	Madhusudan Duwadi (NJIT BME student), JHU Careers in Science and Medicine Summer Internship Program; now Boston University BME PhD student
2021	Carter Swaby, Johns Hopkins University student Chemistry & Biomolecular Engineering; 2021 JHU Life Design Grant; now JHU XDBio PhD student
2021-2023	Bohan Zhang, Johns Hopkins University student in Neuroscience class of 2023, now medical student at UC Irvine SOM; JHU PURA grant, Acoustical Society of America Robert Young Research Award
2021-2023	Amaan Siddiqui, Johns Hopkins University student in Medical Anthropology, Acoustical Society of America Robert Young Research Award (2023); clinical research coordinator, Univ. Chicago Oncology
2022-2023	Elisa Rodriguez, Johns Hopkins University student in Neuroscience class of 2023, now medical student at Uniformed Services University; departmental honors; teacher, St. Brendan High School
2022-2024	Alice Li, Johns Hopkins University student in Neuroscience and Physics class of 2024, Dartmouth SOM class of 2028; Acoustical Society of America Robert Young Research Award (2023); JHU PURA grant; Shared publication #50, 58
2024-present	Suhani Aggarwal, Johns Hopkins University student in Neuroscience class of 2027, JHU Woodrow Wilson Fellowship
2024-present	Rabab Shaban, Johns Hopkins University student in Neuroscience class of 2026; JUMP medical tutorial student

High School Students

2007	Ziwei Judy Hao, River Hill High School student, Finance Manager at Omada Health; Shared publication #6
2017-2019	Omobolade Odedoyin, Johns Hopkins Summer Jobs Program and Baltimore Ingenuity Project, Johns Hopkins University Neuroscience class of 2023 (Baltimore Scholar), currently GEMS Scholar & Rubenstein Fellow in Data Science at JHU; United States Army Award of Merit for Outstanding STEM project; National Society for Black Engineers Baltimore Metropolitan Professionals Chapter Distinguished Project Award
2018	Erin Young, Johns Hopkins Internship in Brain Sciences and Project Lead the Way; Catawba College class of 2023
2020-2021	Precious Conteh and Lillia Berninzoni, Baltimore Ingenuity Project, Polytechnic High School class of 2022; P. Conteh now at Univ. Maryland College Park, L. Berninzoni now at Univ. Vermont

Post-doctoral Advisees /Mentees

2014-2018	Katrina Schrode, Ph.D. (University of Minnesota), postdoctoral fellow, now Research Assistant Professor in Dept. of Psychiatry at Charles Drew Univ. of Medicine & Science; T32 NRSA , 2014-2017; Association for Research in Otolaryngology Travel Award 2016; Johns Hopkins Postdoctoral Association 2nd Place Presentation Award, 2016; Shared publications: journal articles #22, 24, 27, 28, 29, 32, 33, 37, 40, 42, 48; book chapters #2, 4
2016-2018	Ye-hyun Kim, Ph.D. (University of Virginia), postdoctoral fellow, now researcher at Akouos Therapeutics, Boston, MA; Association for Research in Otolaryngology Travel Award 2018; Shared publications: #27, 31, 35, 39, book chapter #4
2018-2021	Laurel Screven, Ph.D. (University at Buffalo), postdoctoral fellow and part time assistant in the JHU Office of Postdoctoral Affairs, now Scientific Project Manager, NIA; T32 NRSA, 2018-2020; Shared publications: #32, 33, 37, 40, 41, 53
2019-present	Sergio Vicencio-Jimenez, Ph.D. (University of Chile), postdoctoral fellow; 2022 Postdoctoral Research Accelerator Award, JHUSOM; Shared publications #36, 39, 41, 53, invited review #3
2020-2022	Nicholas Andresen, M.D. (University of Iowa), JHU OHNS resident; T32 NRSA; NIH Loan Repayment Program recipient; Association for Research in Otolaryngology Travel Award and Poster Blitz finalist

	2021; Dory U. Petit Foundation Resident Award for presentation at the 2021 American Academy of Otolaryngology-Head and Neck Surgery Annual Meeting, History and Archives Forum, Los Angeles, CA (\$5,000); Shared publications #34, 38, 43, 44, 56, 58
2020-2024	Kali Burke, Ph.D. (University at Buffalo), postdoctoral fellow, Scientist at Uniformed Services University; T32 NRSA, 2020-2021; F32 NRSA 2022-2024; 2023 ASA Young Investigator Travel Award; Appointed to the panel of postdoctoral reviewers for the Royal National Institute for Deaf people (formerly Action on Hearing Loss) Flexi Grants Spring 2021; Student-Postdoc Association for Research in Otolaryngology (sp-ARO) Steering Committee May 2021; Shared publications #40, 41, 47, 49, 51, 53, 54
Jan 2021	Anastasiya Koprina, Ph.D. (University at Buffalo), visiting postdoctoral fellow, from Northern Arizona University, now Research Psychologist for the US Air Force, Fort Sam Houston, San Antonio, TX; Company of Biologists Travel Fellowship to visit our lab for training in rodent auditory system histology techniques; Shared publications #32, 40, 49
2021-present	Grace Capshaw, Ph.D. (University of Maryland), postdoctoral fellow, co-mentored with Cynthia Moss; NIDCD Diversity Scholar; T32 NRSA, 2021-2023; Shared publications #41, 52, 55
2022-2025	Jane Mondul, Aud., Ph.D. (Vanderbilt University), postdoctoral fellow, co-mentored with Elisabeth Glowatzki; now Assistant Professor in Communication Sciences and Disorders at Purdue Univ.; T32 NRSA 2023-2024; Shared publication #51
2023-2025	Yassine Balhi, M.D. (University of Algiers), postdoctoral fellow, co-mentored with Bryan Ward; now neurotology fellow in Montreal; Shared publication #56, Case reports #1 and 2
2024-2025	Eleftheria Slika, M.D. (Aristotle University of Thessaloniki Medical School), postdoctoral fellow; now surgery resident at SUNY Downstate

Faculty Advisees /Mentees

2018-2020	Daria Gaykalova, Assistant Professor, Dept. of Otolaryngology-HNS, Johns Hopkins University School of Medicine
2024-presnt	Jenny Chen, Assistant Professor Dept. of Otolaryngology-HNS, Johns Hopkins University School of Medicine (secondary)
2024-present	Philippe Vincent, Assistant Professor Dept. of Otolaryngology-HNS, Johns Hopkins University School of Medicine (secondary)
2023-2025	Alex Chern, M.D. (Vanderbilt University School of Medicine), clinical fellow, secondary research mentor
2024-present	George Siyuan Liu, M.D. (Stanford University School of Medicine), clinical fellow, secondary research mentor
2024-present	Zahra Sayyid, M.D. (Stanford University School of Medicine), otolaryngology resident, neurotology fellow, research mentor; shared publication #46

Thesis committees & qualifying exams

Johns Hopkins

2015-2019	Travis Babola, The Metabotropic Purinergic Receptor P2ry1 Mediates ATP-dependent Burst Firing in the Developing Cochlea, JHU Neuroscience, committee member (Advisor: Bergles)
2016-2019	Richard Sima, Cerebellar Modulation of Auditory Processing in the Inferior Colliculus, JHU Neuroscience, committee member (Advisor: du Lac)
2017-2020	Nathanial Nowak, Function of Cochlear Type II Afferents, JHU Neuroscience, committee member (Advisor: Fuchs)
2021	Hsin-Yi Hung, Neuroscience Department Board Orals, alternate committee member
2012-2025	Kate Maximov, Neuroscience Department Board Orals, thesis committee member (advisor: Kanold)
2021	Celia Fernandez Brillet, Biomedical Engineering Department Board Orals, committee member (advisor: Della Santina)

2021-2024	Allison Kalinowsky, Human Genetics, Johns Hopkins University (advisors: Bjornsson, Harris)
2022-present	Sherry Shen, Biomedical Engineering Department Board Orals, thesis committee member (advisor: Wang)
2024-present	Hrishikesh Mandal, Biomedical Engineering Department Board Orals, thesis committee member (advisor: Wang)
2024	Clarice Diebold, Psychological and Brain Sciences, thesis committee chair (advisor: Moss)
2024	Jonah Mittlestadt, Neuroscience Department Board Orals, chair (advisor: Ulrich Mueller)
2025-present	Keegan Eveland, Psychological and Brain Sciences, thesis committee member (advisor: Moss)
2025-present	Rochinele Dongmo, Neuroscience, thesis committee member (advisor: Doetzlhofer)

Outside Institutions

2018	Catherine Barone, Anatomical Organization and Maturation of the Naked Mole Rat Inner Ear, University of Illinois-Chicago Neuroscience, committee member (advisor: Park)
2020	Michelle Frank, Development of the Olivocochlear System, Dept. of Neurobiology, Harvard University, Committee Member (advisor: Goodrich)
2024	Zimdahl, Jack, Investigating the Relationship Between Anxiety and Tinnitus Development in a Rodent Model, University of Western Australia, thesis examiner (advisor: Mulders)

Other

July 2018-2024	Summer Student Mentor, R25 NS107167, Johns Hopkins Neuroscience Scholar Program (PIs: Amanda Brown, Tilak Ratnathar) to increase present research opportunities for URM students and students with hearing loss, JHU SOM <ul style="list-style-type: none"> ○ 2019-2020: Ryleigh Board, Campbellsville University, KY; U. Louisville Audiology class of 2027; Shared publication #32 ○ 2020-present: Alexandra Wong, Johns Hopkins University, Anders Tjellstrom Scholarship, A.G. Bell Foundation 2021; Coelho Center Heumann-Armstrong Education Award; Rhodes Scholar ○ 2022-2024: Elennyel Correa, Southwestern College; 3rd place Presentation Award-2023 JH Neuroscience Scholars Symposium; 2024 Assoc. for Research in Otolaryngology Midwinter Meeting Scholar Award; NIH Undergraduate Scholars Program award
Jan 2022	Kugee Vallee Postdoc Mentoring Panel member, JHU SOM
Nov 2022	Panelist, 25 th Annual Neuroscience at Storrs Career Panel, University of Connecticut, Storrs, CT
June 2023	Summer Student Mentor, T35 AG026758, Medical Student Training in Aging Research (MSTAR) program, JHU SOM
Oct 2024	Mentor, NIDCD Diversity Scholars Workshop, Bethesda, MD
Summer 2025	Mentor, JHU Amgen Scholars summer program, Taiel Lucille University of Central Florida student
Summer 2025	Mentor, JHU CSM-SIP summer program, Stacy Vasquez, Juniata College (former SARE participant)

Note: Additional mentoring activities listed under professional society service

RESEARCH ACTIVITIES

Research Focus

The focus areas of my research are: 1) understanding how the brain contributes to auditory dysfunction and plasticity via olivocochlear auditory efferent feedback pathways, 2) understanding how auditory dysfunction relates to peripheral and brainstem changes across the lifespan, 3) comparative otopathology investigations in traditional animal models, wild species, and human temporal bones. My lab has demonstrated olivocochlear efferent plasticity with age and noise exposure, shown that age-related degeneration of the olivocochlear efferent system is linked with hearing in noise deficits, and shown that disruption of olivocochlear feedback early in life causes abnormal sound perception and processing. We are one of only a handful of labs investigating auditory efferent effects on hearing in noise behavior in animal models. My research has also

demonstrated plastic changes in the brain that compensate for some aspects of altered peripheral input from hearing loss and noise, as well as cognitive-emotional sequelae of noise-induced hearing loss and aging. Finally, I have throughout my career investigated comparative animal models of hearing loss in birds and mammals, including humans. To this end, we have established a human and animal temporal bone research resource for cross-species histopathological and transcriptomic investigations.

My lab emphasizes an inclusive team science approach, with members from across the career spectrum in both basic science and clinical disciplines. We collaborate with many colleagues at Johns Hopkins, the University at Buffalo, and elsewhere to expand the array of techniques used to address our research questions and to enrich the intellectual context in which our work is performed. We maintain close ties with clinician-scientists and engineers working in hearing and balance research, as well as with medical illustrators and investigators who apply an evolutionary lens to the field of hearing and balance research. Thus, our research intersects with a broad range of disciplines and perspectives.

Key areas of accomplishment:

- Plasticity and degeneration in top-down efferent brain-to-ear circuits that protect against, compensate for, and contribute to hearing dysfunction across the lifespan
- Perceptual dysfunction and subcortical plasticity in response to and compensation for acquired hearing loss, including noise-induced, age-related, and hereditary causes
- Comparative auditory processing and pathology of the auditory system in birds, mole rats, bats, rodents, and humans

Research Program Building / Leadership

2018-present	Director of Auditory Phenotyping Core , procuring resources and staff for shared small animal auditory screening service; development and implementation of hearing screening techniques; consultation with internal and external laboratories; experience with rodents, lagomorphs, bats, & nonhuman primates
2020, 2021	Organizer, JHU OHNS Resident-Faculty Research Fair <ul style="list-style-type: none"> ○ Coordinated and moderated a ‘presentation blitz’ style symposium to introduce residents to research opportunities in the department and connect them with faculty mentors
2021-present	Co-Founder/Co-Coordinator , Working Group on Temporal Bone Research, Johns Hopkins University Department of Otolaryngology-HNS (with participation from UMB faculty)
2022-2024	Co-Founder/Coordinator , Johns Hopkins University Department of Otolaryngology-HNS Seed Grant Initiative
2019-2023	Founder and Chair , Early Career Grant Strategy Committee, Dept. of Otolaryngology-HNS <ul style="list-style-type: none"> ○ The objectives of this committee are to 1) increase the efficiency and effectiveness of the process of seeking early career funding, and 2) increase support for early career researchers and ameliorate career burnout. I coordinate and lead committee activities including grant pre-review, informational and skill-building sessions, coaching, and distribution of funding opportunities and resources; 100% success rate for faculty K-level award funding (n=6).

Research Demonstration Activities (to external audience, on or off campus)

Lab Demos	Auditory brainstem response, distortion product otoacoustic emissions, and acoustic startle response experimental technique demonstrations and consultations with scientists from NIA, The Jackson Laboratory; consulting & assistance to scientists in the US, Israel, Europe, South America, India
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Media/Outreach

2015	Science 360 photo of the day (electron microscope image of auditory nerve synapse in mouse brainstem)
2017	“Stress, anxiety, and tinnitus” feature in the Action on Hearing Loss annual Hearing Progress update
2018	“Has Hearing Research Gone Batty?” JHU Development Office video. https://youtu.be/ueLf_dzMZnY
2018	“An Entirely Novel Way to Diagnose Concussion” feature in the JHU Dept. of Otolaryngology-HNS newsletter
2021	How hearing loss affects the brain. North York Rotary Club, York, PA.
2021	Auditory system basics and the effects of abnormal auditory input to the brain. Project R3 Speaker Series, Ingenuity Project, Polytechnic High School, Baltimore, MD.

2024 Bat resistance to age-related hearing loss work featured in Science news and Nature news:
<https://www.science.org/content/article/superpowered-bats-keep-their-hearing-they-age>
<https://www.nature.com/articles/d41586-024-03575-z>

ORGANIZATIONAL ACTIVITIES

[Institutional Administrative Appointments](#)

Departmental

2015-2021; Department of Otolaryngology-HNS Diversity Committee; Diversity Forum facilitator (2020);
 2023-present Subcommittee for Student/trainee outreach (2020); ad hoc member 2023-present

2019-present Department of Otolaryngology-HNS Residency Interview Committee

2022-2023 Department of Otolaryngology-HNS Faculty Satisfaction Response Survey Committee

2023-2024 Department of Otolaryngology-HNS Medical Student Research Award Review Committee

2023-present Department of Otolaryngology-HNS Professionalism Committee, **Co-Chair** 2023-2024

2024 **Chair**, Department of Otolaryngology-HNS Mentoring Committee

2024-present **Vice Director for Academic Affairs**, Department of Otolaryngology-HNS

2024-present Department of Otolaryngology-HNS Promotions Committee

2024 Otolaryngology-HNS Resident and Fellow Research Day judge

Cross-departmental

2014-2018 **Coordinator**, Center for Hearing and Balance Seminar Series (multi-department)

2020-2023 Center for Hearing and Balance T32 Executive Committee, Johns Hopkins University School of Medicine; trainee application review 2024

2021-2023 Department of Neuroscience Training Program Steering Committee

School of Medicine

2011 Emerging Women's Leadership Program, Office of Women in Science and Medicine

2013-2016 Office of Women in Science and Medicine Advisory Board

2015 Poster Judge, Johns Hopkins Postdoctoral Association Retreat

2015 Youth Mentoring and Support Task Force, Johns Hopkins University School of Medicine

2016 Dean's Basic Investigation Task Force, Johns Hopkins University School of Medicine

2017-2018 Johns Hopkins Summer Internship Program Admissions Committee, Basic Science Institute

2017-2019 Johns Hopkins Summer Internship Program Admissions Committee, Health Careers Opportunity Program

2017, 2018 Johns Hopkins Medical Student Research Symposium Abstract Judge

2021 Office of Postdoctoral Affairs Research Accelerator Award reviewer

2023 Johns Hopkins Medical Student Research Symposium Poster Judge

2025-present Faculty Affairs and Development Board

Cross-divisional

2020 Reviewer, Provost's Undergraduate Research Awards

2024 Institute for Data Intensive Engineering and Science Seed Grant reviewer

2025 Member, Institute for Data Intensive Engineering and Science

2025 Whiting School of Engineering Materials Characterization and Processing (MCP) Internal Steering Committee

2024-present Member, Animal Care and Use Committee

2025-present Materials Characterization and Processing (MCP) Internal Steering Committee

- Aug-Sept 2025 Associate Director of Microscopy Hiring Committee

Editorial Activities

2019 Journal of Neurophysiology Special Topic Creator: Auditory and Vestibular Efferents

2021 Guest Reviewing Editor, eLife

Editorial Board Appointments

2021-2024 **Associate Editor**, Journal of the Association for Research in Otolaryngology

2022-present **Associate Editor**, Journal of the Acoustical Society of America

Journal peer review activities

2005-present Reviewer for journals:

Behavioral Brain Research; Brain Research; Ear and Hearing, eLife, eNeuro, Experimental Neurology; Frontiers in Neuroscience series; Frontiers in Cell and Developmental Biology; Frontiers in Ecology and Evolution; Functional Ecology; Genes, Brain, & Behaviour; iScience; Journal of the Acoustical Society of America; Journal of the Association for Research in Otolaryngology; Journal of Clinical Investigation; Journal of Comparative Physiology A; Journal of Neurophysiology; Journal of Neuroscience; Hearing Research; Nature; Nature Communications; Neurobiology of Aging; Neurobiology of Disease; Neuroscience; Otology & Neurotology; Proceedings of the Royal Society B: Biological Sciences; Public Library of Science ONE; Public Library of Science Biology; Public Library of Science Genetics; Scientific Reports

Other peer review activities

2012, 2013 Annual Biomedical Research Conference for Minority Students Abstract Reviewer

2019 Book proposal reviewer, Columbia University Press

Advisory Committees, Review Groups, Study Sections

National

2013, 2015, 2018 Department of Veterans Affairs research grant peer review panels

2014, 2016, 2017, 2018 Department of Defense Medical Research grant peer review panels

2015 National Institute on Deafness and Other Communication Disorders (NIDCD) Workshop
“Synaptopathy and noise-induced hearing loss: Animal studies and implications for human hearing”

2016-2017 Scientific Advisor, Hyperacusis Research Foundation

2017 NIDCD Special Emphasis Panel Noise-Induced Cochlear Synaptopathy, Basic Studies Informing Potential Therapies (R01)

2018-2023 **Standing Member, Chair (July 2021-June 2023)**, NIDCD/NIH Communications Disorders Review Committee

2020-2022 **T32 External Review Committee** Center for Hearing Research, Boys Town National Research Hospital (Program Director: Monita Chatterjee, Ph.D.)

2020-2023 Hearing Health Foundation grant review committee

2020	NSF CAREER grant review panel
2020	ad hoc reviewer, NIH HIV Comorbidities & Clinical Studies (HCCS) Study Section (R01)
2020, 2021	NIA/NIH Auditory System special emphasis panels (P01)
2020-2025	Research Advisory Board , Consultant, American Otological Society
2021-present	External Advisory Committee , Translational Hearing Center (NIGMS CoBRE-funded, PD: Peter Steyger) at Creighton University, Boys Town National Research Hospital, and Univ. Nebraska Medical Center, Omaha, NE
2021	NIDCD Strategic Plan Idea Generation participant
2024	NIDCD NRSA Fellowship Special Emphasis Panel
2024	Alternate Chair, NIDCD Special Emphasis Panel, Research Opportunities for New and At-Risk Investigators to promote Workforce Diversity (R01)
2025	Chair, NIDCD Special Emphasis Panel, Research Opportunities for New Investigators to Promote Workforce Diversity (R01)

International

2014, 2016, 2017, 2020, 2023	ad hoc grant reviewer, Action on Hearing Loss/Royal National Institute for Deaf People (UK)
2018	ad hoc grant reviewer, Medical Research Council (UK)
2019	ad hoc grant reviewer, ZonMw (Netherlands Organization for Health Research and Development)
2020	ad hoc grant reviewer, La Fondation pour l'Audition (France)
2024-2026	Auditory Efferent Systems Working Group sponsored by the Hanse-Wissenschaftskolleg (HWK) in Delmenhorst, Germany

Professional Societies

1997-2000	Psi Chi, Psychology Honor Society, Member
2001-2006	Sigma Xi, Scientific Research Honor Society, Member
2001-2004	International Society for Neuroethology, Member
2001-Present	Acoustical Society of America, Member and Fellow <ul style="list-style-type: none"> ○ Acoustical Society of America, Washington, DC chapter (2003-2006,) Secretary (2005) ○ Acoustical Society of America S3/SC1/ Working Group 5 on Noise and Vibration in Animal Laboratory Facilities (2010) ○ Best Student Presentation Judge (2017) ○ Participant, Acoustical Society of America Students Meet Members for Lunch mentoring program (2017-2018) ○ Invited Mentor, Acoustical Society of America Acoustic Outreach to Budding Scientists program (2018) ○ Psychological and Physiological Acoustics Technical Initiative Chair, proposed initiative and secured \$6500 in funding from ASA, Recruitment of Junior Faculty Investigators in Basic and Clinical Physiology (2018) ○ Publications Policy Committee (2023-2024) ○ Women in Acoustics Committee (2023-2024) ○ Animal Bioacoustics Technical Committee, Psychological & Physiological Technical Committee, (2023-2026)
2001-Present	Association for Research in Otolaryngology, Member <ul style="list-style-type: none"> ○ Animal Research Committee (2013-2016) ○ Diversity Committee (2016-2019) ○ Panel participant, Navigating the Grant Landscape as a Trainee, San Diego, CA (2018)

- Panel participant, Women in Science Roundtable, Baltimore, MD and San Jose, CA (2019, 2020)
- Association for Research in Otolaryngology Student Poster Blitz judge, San Jose, CA, virtual (2020, 2021)
- Student-Postdoc Association for Research in Otolaryngology (spARO) Mentorship Program mentor (2021-2022)
- Finance Committee (2021-2026), **Chair** 2023-2026
- Communications Committee (2023-2024)

2009-Present Society for Neuroscience, Member

- Panelist, Advances and Perspectives in Auditory Neuroscience (APAN; satellite meeting) professional development workshop: research funding (2021)

2024-present International Otopathology Society, Member

Session Chair

National

2013 Institutional Animal Care and Use Committee (IACUC) Conference, PRIM&R, Session Co-chair: Are Mice the Models We Think They Are? Consequences of Environmental Stress, Baltimore, MD.

2015 Association for Research in Otolaryngology Midwinter Meeting, Organizer and Co-chair, New perspectives on sound exposure and subcortical processing: From environmental effects to damaging sounds, Baltimore, MD.

2016 Association for Research in Otolaryngology Midwinter Meeting, Session Co-chair: Brainstem I Podium Session, San Diego, CA.

2017 Joint Acoustical Society of America and European Acoustics Association Meeting, Organizer and Co-chair, Avian Bioacoustics: Honoring Robert J. Dooling, Boston, MA.

2018 Association for Research in Otolaryngology Midwinter Meeting, Organizer and Co-chair, Auditory and Vestibular Efferents Symposium., Baltimore, MD.

International

2018 Joint Acoustical Society of America and Canadian Acoustical Society Meeting, Organizer and Co-chair, Acoustics Outreach: Linking Physiology and Behavior for Future Collaborations, Victoria, BC, Canada.

2023 Joint Acoustical Society of America and WESTPAC, PRUAC Meeting, Organizer and Co-chair, Comparative Models of Hearing Loss, Sydney, Australia.

RECOGNITION

Awards, Honors

2000 Graduate Psychology Award, St. Joseph's University, given to top Masters Degree student

2001 Second Place Award, Graduate Research Interaction Day, University of Maryland, student presentation

2002 Student Travel Award, Meeting of the Association for Research in Otolaryngology

2003 Mentored Student Research Travel Award, American Auditory Society

2002-2005 Ruth L. Kirschstein Individual Predoctoral National Research Service Award (F31), predoctoral fellowship, NIH/NIDCD

2007-2008 Ruth L. Kirschstein Institutional Postdoctoral National Research Service Award (T32), postdoctoral fellowship, NIH/NIDCD

2008-2010 Ruth L. Kirschstein Individual Postdoctoral National Research Service Award (F32), postdoctoral fellowship, NIH/NIDCD

2017 Diversity & Inclusion Program Recognition for Service in Mentorship, Department of Otolaryngology, Johns Hopkins University School of Medicine

2023	Faculty Mentoring Award, Department of Otolaryngology, Johns Hopkins University, School of Medicine
2023	Elected Fellow , Acoustical Society of America
2024	Career Impact Award, Johns Hopkins Doctoral Life Design Studio

Invited Talks

JHMI/Regional

Jan 2008	Unintentional investigations of the effects of environmental noise on mouse models of hearing loss. Dept. of Hearing and Speech, University of Maryland, College Park, MD.
May 2009	Mouse model of central auditory processing disorder. Center for Hearing and Balance Seminar Series, Johns Hopkins University, Baltimore, MD.
June 2011	Mouse model of an auditory neuropathy spectrum disorder. Dept. of Otolaryngology-HNS Grand Rounds, Johns Hopkins University SOM, Baltimore, MD.
January 2014	Central auditory nerve synapse survival in early-onset progressive sensorineural hearing loss. Dept. of Otolaryngology-HNS Grand Rounds SOM, Johns Hopkins University, Baltimore, MD.
June 2012	Efferent synapses return to aging inner hair cells. Dept. of Otolaryngology-HNS Grand Rounds, Johns Hopkins University, Baltimore, MD. Dept. of Otolaryngology-HNS Resident Research Symposium, Johns Hopkins University SOM, Baltimore, MD.
June 2017	Effects of hearing loss on the auditory brainstem. Dept. of Otolaryngology-HNS Faculty Research Symposium, Johns Hopkins University SOM, Baltimore, MD.
Oct 2017	Effects of hearing loss and noise on the auditory brainstem. University of Maryland and Center for the Evolutionary Biology of Hearing Auditory and Vestibular Translational Research Day, Baltimore, MD.
Nov 2017	Hearing loss susceptibility and resistance to noise in bats (with C. Moss, S. Sterbing). David M. Rubenstein Fund for Hearing Research Symposium. Johns Hopkins University SOM, Baltimore, MD.
Nov 2017	Effects of crossmodal sensory plasticity induced in adulthood on hearing (with H. Lee). David M. Rubenstein Fund for Hearing Research Symposium. Johns Hopkins University SOM, Baltimore, MD.
Oct 2018	Hearing loss susceptibility and resistance to noise in bats (with C. Moss, S. Sterbing). David M. Rubenstein Fund for Hearing Research Symposium. Johns Hopkins University SOM, Baltimore, MD.
Sept 2021	Age- and noise-dependent plasticity in auditory efferents. Dept. of Neuroscience Retreat, Johns Hopkins University SOM, Baltimore, MD.
Dec 2021	Bats as a paradoxical model for deafness and noise resistance. David M. Rubenstein Center for Hearing Research Symposium. Johns Hopkins University SOM, Baltimore, MD.
Oct 2022	Development of a searchable database for human temporal bone and otopathology research. Institute for Data Intensive Engineering and Science Symposium. Johns Hopkins University, Baltimore, MD.
March 2023	Development of a resource for human temporal bone otopathology research and education. Towson, University, Towson, MD. CME credit offered.
March 2024	Auditory efferent olivocochlear effects on hearing across the lifespan. Dept. of Otolaryngology-HNS Grand Rounds, Johns Hopkins University SOM, Baltimore, MD. CME credit offered.
April 2024	Auditory efferent olivocochlear effects on hearing across the lifespan. Audiology Grand Rounds, Johns Hopkins University SOM, Baltimore, MD.
April 2024	Auditory efferent plasticity and loss with age. Fuchshrift, in honor of Dr. Paul Fuchs' retirement, Dept. of Otolaryngology-HNS Grand Rounds, Johns Hopkins University SOM, Baltimore, MD.
Sept 2024	The role of the brain-to-ear auditory efferent system in hearing across the lifespan. William Hodos Neuroscience and Cognitive Science (NACS) Seminar, University of Maryland, College Park, Maryland.
Dec 2024	The role of the brain-to-ear auditory efferent system in hearing. Functional Anatomy & Evolution Day, Johns Hopkins University SOM, Baltimore, MD.

Jan 2025	Development of a Human Temporal Bone Otopathology Resource in the Baltimore Area, Pathology Grand Rounds, Johns Hopkins University School of Medicine, Baltimore, MD.
<i>National</i> (*denotes international speakers and attendees in US location)	
June 2012	How the brain makes sense of the world of sound: Central auditory system basics and the effects of abnormal auditory input to the brain. Hearing Loss Association of America, Providence, RI.
Jan 2013	Increased susceptibility to temporal processing deficits with efferent auditory system impairment. Communicative Disorders Dept., University at Buffalo, Buffalo, NY.
June 2014	New insights into the role of the olivocochlear efferent system in hearing and hearing loss. Dept. of Otolaryngology-HNS, University of Pittsburgh, Pittsburgh, PA.
Feb 2015	Consequences of chronic and acute sound exposure on behavior and auditory brainstem responses. Association for Research in Otolaryngology, Baltimore, MD.*
June 2016	Perceptual perseveration in a passerine with permanent papillar impairment. Acoustical Society of America Session in Honor of Robert J. Dooling, Boston, MA.*
Sept 2016	Central auditory system and hearing loss: From ear to brain and back. Jackson Laboratory, Bar Harbor, ME.*
Oct 2016	Central auditory system and hearing loss: From ear to brain and back. Psychology Dept., University at Buffalo, Buffalo, NY.
May 2018	Auditory and nonauditory consequences of asymmetric hearing loss in animal models, Acoustical Society of America Session on Consequences of Asymmetrical Hearing, Minneapolis, MN.*
Feb 2019	Efferents in aging and inner ear pathology. Association for Research in Otolaryngology Midwinter Meeting, Baltimore, MD.*
March 2020	Activity dependent changes in afferent and efferent auditory pathways. Dept. of Otolaryngology-HNS, Wayne State University, Detroit, MI.
March 2020	Role of serotonin in suprathreshold and extra-auditory effects after noise exposure. Kresge Hearing Institute, University of Michigan, Ann Arbor, MI.
March 2021	Activity dependent changes in afferent and efferent auditory pathways. Speech, Hearing, and Language Sciences Colloquium—PhD student invitee, Indiana University, Bloomington, IN.
August 2021	Age- and noise-dependent plasticity of auditory efferent pathways. Auditory Processing Meeting—Efferent Mini-meeting.
April 2022	Role of olivocochlear efferents in hearing across the lifespan. Depts. of Pathology & Otolaryngology, Medical University of South Carolina, Charleston, SC.
June 2022	Role of olivocochlear efferents in hearing across the lifespan. 4 th Annual Bellucci Symposium on Hearing Research, Translational Hearing Center, Creighton University, Omaha, NE.*
Sept 2022	Role of olivocochlear efferents in hearing across the lifespan. Electronic Auditory Research Seminars.*
Nov 2022	Role of auditory brain-to-ear efferents in hearing across the lifespan (Keynote). 25 th Annual Neuroscience at Storrs symposium, University of Connecticut, Storrs, CT.
Dec 2022	Role of olivocochlear efferents in hearing across the lifespan. House Institute Grand Rounds, Los Angeles, CA. CME credit offered. Recorded and posted on House Inst. YouTube channel for asynchronous viewing, https://www.youtube.com/watch?v=GEBshXMIj3o
Sept 2023	Role of olivocochlear efferents in hearing across the lifespan. Dept. of Otolaryngology, Ohio State University.
Oct 2023	Demystifying grants: Sessions I and II, AAO-HNSF Meeting, Nashville, TN.
Feb 2024	Auditory olivocochlear efferent feedback system changes with aging and noise exposure (Keynote). American Auditory Society, Scottsdale, AZ.*
March 2024	Auditory efferent olivocochlear effects on hearing across the lifespan, Dept. of Communication Sciences and Disorders, Univ. Pittsburgh, Pittsburgh, PA.

March 2025 Auditory efferent olivocochlear effects on hearing across the lifespan. Hearing Research Group, Neurobiology, Northeast Ohio College of Medicine, Rootstown, OH.

International

Aug 2014 New insights into the role of the olivocochlear efferent system in hearing and hearing loss. Dept. of Zoophysiologie, University of Oldenburg, Oldenburg, Germany.

Nov 2018 Challenges and opportunities in bridging behavior, physiology, and anatomy in translational hearing research. Joint Acoustical Society of America and Canadian Acoustical Society Meeting, Victoria, BC, Canada.

April 2019 Activity-dependent changes in auditory afferent and efferent pathways. IHEAR, University of Buenos Aires, Buenos Aires, Argentina.

April 2019 Changes in afferent and efferent auditory pathways with noise and age. Depts. of Neuroscience and Otolaryngology, University of Chile, Santiago, Chile.

March 2021 Activity dependent changes in afferent and efferent auditory pathways. Hearing Research groups, University of Groningen, Netherlands and University of Oldenburg, Germany (joint seminar).

April 2021 Activity dependent changes in afferent and efferent auditory pathways. Hearing Research group, The Garvan Institute, Sydney, Australia.

October 2021 Sex-linked differences in age-related and noise-induced hearing loss, Swiss Hearing Day.

June 2023 Role of the olivocochlear system in hearing across the lifespan. The Roots of Auditory Neuroscience in Spain: From Past to Future, symposium in tribute to Miguel Merchan, Salamanca, Spain.

Dec 2023 The enduring importance of comparative animal models for understanding hearing loss. Joint Acoustical Society of America and WESTPAC, PRUAC Meeting, Comparative Models of Hearing Loss, Sydney, Australia.

Dec 2023 The biology of hearing and hearing loss: New insights from naked mole rats into mechanisms and adaptive responses (presenting author; co-author with Sonja Pyott). Joint Acoustical Society of America and WESTPAC, PRUAC Meeting, Comparative Models of Hearing Loss, Sydney, Australia.

Dec 2023 Olivocochlear efferent system degeneration plasticity with aging and noise exposure. Joint Acoustical Society of America and WESTPAC, PRUAC Meeting, Comparative Models of Hearing Loss, Sydney, Australia.

Oct 2024 The role of the auditory efferent system in susceptibility to hearing loss. Southern Denmark University, Odense, Denmark.

Nov 2024 The role of the brain-to-ear auditory efferent system in hearing across the lifespan. Hanse-Wissenschaftskolleg (Institute for Advanced Study), Delmenhorst, Germany.