Curriculum Vitae

March 28, 2021

PART I. BACKGROUND

Name

Bharadwaj, Hari M.

Present Rank and Title

Assistant Professor of Speech, Language, and Hearing Sciences
Assistant Professor of Biomedical Engineering

Year Current Rank Acquired

2016

Academic Record

2014	Ph.D.	Boston University	Biomedical Engineering
2008	M.S.	University of Michigan, Ann Arbor	Electrical Engineering: Systems
2008	M.S.	University of Michigan, Ann Arbor	Biomedical Engineering
2006	B.Tech.	Indian Institute of Technology (IIT), Madras	Electrical Engineering

PART II. GENERAL INFORMATION

Academic Appointments

2016 –	Assistant Professor, Department of Speech, Language, and Hearing Sciences, Purdue University, West Lafayette, IN
2016 –	Assistant Professor, Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN
2014 – 2016	Research Fellow, Departments of Neurology and Radiology, Harvard Medical School & Massachusetts General Hospital, Charlestown, MA
2014	Post-doctoral Associate, Center for Computational Neuroscience and Neural Technology, Boston University. Boston, MA
2009 – 2010	Research Analyst, Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA

Awards and Honors

2018 – 2019	Ruth and M. D. Steer outstanding teaching award for being voted the "Outstanding Audiology Graduate Instructor".
2018	American Speech, Language, and Hearing Association (ASHA) Early Career Research Contribution Award.
2017 – 2018	Ruth and M. D. Steer outstanding teaching award for being voted the "Outstanding Audiology Graduate Instructor".
2017	Purdue University Bronze Acorn "Seeds for Success" Research Excellence award.
2015 – 2016	Hearing Health Foundation Emerging Research Award.
2014	Best doctoral dissertation of the year award, Department of Biomedical Engineering, Boston University.
2014	Best student paper award for article , Boston University.
2014	Travel Award, Center for Computational Neuroscience and Neural Technology, Boston University.
2006 – 2008	Graduate Fellowship, Department of Biomedical Engineering, University of Michigan.
2004 – 2006	Undergraduate merit cum means scholarship, Indian Institute of Technology (IIT) Madras.

Memberships in academic, professional, and scholarly societies

2019 –	Member	Society for Neuroscience (SfN)
2018 –	Member	American Speech-Language-Hearing Association (ASHA)
2016 –	Member	Acoustical Society of America (ASA)
2010 –	Member	Association for Research in Otolaryngology (ARO)

Section A: DISCOVERY

Published Work

[Superscript numbers indicate co-author(s) mentored by the candidate: [1]undergraduate student, [2]graduate student, [3]postdoctoral scientist]

Refereed Research Articles

Bharadwaj H., & Shinn-Cunningham B. (2021). What's been hidden in hidden hearing loss. *Neuron.* 109(6):909-911.

Parida, S., **Bharadwaj, H.**, & Heinz, M. G. (2021). Spectrally specific temporal analyses of spike-train responses to complex sounds: A unifying framework. *PLoS computational biology*, 17(2), e1008155.

Ahmed, H., Wilbur, R. B., **Bharadwaj, H. M.**, & Siskind, J. M. (2021). Object Classification from Randomized EEG trials. *IEEE Proceedings on Computer Vision and Pattern Recognition.* In Press.

Li, R., Johansen, J. S., Ahmed, H., Ilyevsky, T. V., Wilbur, R. B., **Bharadwaj, H. M.**, & Siskind, J. M. (2020). The Perils and Pitfalls of Block Design for EEG Classification Experiments. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 43(1), 316-333.

Lu, H., Mehta, A. H., **Bharadwaj, H. M.**, Shinn-Cunningham, B. G., & Oxenham, A. J. (2020). Comment on 'Rapid acquisition of auditory subcortical steady state responses using multichannel recordings'. *Clinical Neurophysiology*, 131(8), 1833.

Bharadwaj, H. M., Mai[2], A. R., Choi, I., Simpson, J. M., Heinz, M. G., & Shinn-Cunningham, B. G. (2019). Non-Invasive Assays of Cochlear Synaptopathy – Candidates and Considerations. *Neuroscience*, 407, 53-66.

Wang, L., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. G. (2019). Assessing cochlear-place specific temporal coding using multi-band complex tones to measure envelope-following responses. *Neuroscience*, 407, 67-74.

Viswanathan, V., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. G. (2019). Electroencephalographic Signatures of the Neural Representation of Speech during Selective Attention. *eNeuro*, 6(5).

Mamashli, F., Khan, S., **Bharadwaj, H. M.**, Losh, A., Pawlyszyn, S. M., Hamalainen, M. S., & Kenet, T. (2018). Maturational trajectories of local and long-range functional connectivity in autism during face processing. *Human Brain Mapping*, 39(10), 4094-4104.

Khan, S., Hashmi, J. A., Mamashli, F., Michmizos, K.,**Bharadwaj, H. M.**, ... & Kenet, T. (2018). Maturation Trajectories of Cortical Resting-State Networks Depend on the Mediating Frequency Band. *NeuroImage*, 174, 57-68. doi: 10.1016/j.neuroimage.2018.02.018

Mamashli, F., Khan, S., **Bharadwaj, H. M.**, Michmizos, K., Ganesan, S., Garel, K. L. A., ... & Kenet, T. (2016). Auditory processing in noise is associated with complex patterns of disrupted functional connectivity in autism spectrum disorder. *Autism Research*. doi: 10.1002/aur.1714

Khan, S., Hashmi, J. A., Mamashli, F., **Bharadwaj, H. M.**, Ganesan, S., Michmizos, K., ... & Kenet, T. (2016). Altered Onset Response Dynamics in Somatosensory Processing in Autism Spectrum Disorder. *Frontiers in Neuroscience*. 10: 255. doi: 10.3389/fnins.2016.00255.

Mehraei, G., Hickox, A. E., **Bharadwaj, H. M.**, Goldberg, H., Verhulst, S., Liberman, M. C., & Shinn-Cunningham, B. G. (2016). Auditory Brainstem Response Latency in Noise as a Marker of Cochlear Synaptopathy. *The Journal of Neuroscience*, 36(13), 3755-3764. doi: 10.1523/JNEUROSCI.4460-15.2016.

Varghese, L., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. G. (2015). Evidence against attentional state modulating scalp-recorded auditory brainstem steady-state responses. *Brain research*, 1626, 146-164. doi: 10.1016/j.brainres.2015.06.038.

Verhulst, S., **Bharadwaj, H. M.**, Mehraei, G., Shera, C. A. & Shinn-Cunningham, B. G. (2015). Functional modeling of the human auditory brainstem response to broadband stimulation. *The Journal of the Acoustical Society of America*, 138: 1637-1659. doi: 10.1121/1.4928305.

Bharadwaj, H. M., Masud[1], S., Verhulst, S., Mehraei, G., & Shinn-Cunningham, B. G. (2015). Individual differences reveal correlates of hidden hearing deficits. *The Journal of Neuroscience*, 35(5): 2161-2172. doi: 10.1523/jneurosci.3915-14.2015.

Choi, I., **Bharadwaj, H. M.**, Bressler, S., Loui, P., Lee, K., & Shinn-Cunningham, B. G. (2014). Automatic processing of abstract musical tonality. *Frontiers in Human Neuroscience*, 8: 988. doi: 10.3389/fnhum.2014.00988.

Choi, I., Wang, L., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. G. (2014). Individual differences in attentional modulation of cortical responses correlate with selective attention performance. *Hearing research*, 314, 10-19. doi: 10.1016/j.heares.2014.04.008.

Bressler, S., Masud, S., **Bharadwaj H. M.**, and Shinn-Cunningham, B. G. (2014). Bottom-up influences of voice continuity in focusing selective auditory attention. *Psychological Research*, 78(3), 349-360. doi: 10.1007/s00426-014-0555-7.

Bharadwaj, H. M., Verhulst, S., Shaheen, L., Liberman, M. C., & Shinn-Cunningham, B. G. (2014). Cochlear Neuropathy and the Coding of Supra-threshold Sound. *Frontiers in Systems Neuroscience*, 8: 26. doi:10.3389/fnsys.2014.00026.

Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2014). Rapid acquisition of auditory subcortical steady-state responses using multichannel recordings. *Clinical Neurophysiology*, 125(9): 1878–1888. doi: 10.1016/j.clinph.2014.01.011.

Bharadwaj, H. M., Lee, A. K., & Shinn-Cunningham, B. G. (2014). Measuring Auditory Selective Attention using Frequency Tagging. *Frontiers in Integrative Neuroscience*, 8: 6. doi: 10.3389/fnint.2014.00006.

Zhu[2], L., **Bharadwaj, H. M.**, Xia, J., & Shinn-Cunningham, B. (2013). A comparison of spectral magnitude and phase-locking value analyses of the frequency-following response to complex tones. *The Journal of the Acoustical Society of America*, 134(1), 384-395.

Ruggles, D., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. G. (2012). Why middle-aged listeners have trouble hearing in everyday settings. *Current Biology*, 22(15), 1417-1422.

Kenet, T., Orekhova, E. V., **Bharadwaj, H. M.**, Shetty, N. R., Israeli, E., Lee, A. K. C. et al. (2012). Disconnectivity of the cortical ocular motor control network in autism spectrum disorders. *NeuroImage*, 61(4), 1226-1234.

Lee, A. K. C., Rajaram, S., Xia, J., **Bharadwaj, H. M.**, Larson, E., Hamalainen, M. S., & Shinn-Cunningham, B. G. (2012). Auditory selective attention reveals preparatory activity in different cortical regions for selection based on source location and source pitch. *Frontiers in Neuroscience*, 6: 190.

Ruggles, D., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. G. (2011). Normal hearing is not enough to guarantee robust encoding of suprathreshold features important in everyday communication. *Proceedings of the National Academy of Sciences of U.S.A*, 108(37), 15516-15521.

Book Chapters

Shinn-Cunningham, B. G., Varghese, L., Wang, L., & **Bharadwaj, H. M.** (2017). Individual differences in temporal perception, and their implications for everyday listening. In *Frequency Following Response: A Window into Human Communication, N Kraus, S Anderson, T White-Schwoch, RR Fay, and AN Popper (eds.)*, Springer Handbook of Auditory Research 61 (pp. 159-192). Springer Verlag.

[Invited Review Chapter. Description from Springer Website: The Springer Handbook of Auditory Research presents a series of synthetic reviews of fundamental topics dealing with auditory systems. Each volume is independent and authoritative; taken as a set, this series will be the definitive resource in the field.]

Shinn-Cunningham, B. G., Ruggles, D. R., & **Bharadwaj, H. M.** (2013). How Early Aging and Environment Interact in Everyday Listening: From Brainstem to Behavior Through Modeling. *Basic Aspects of Hearing: Physiology and Perception* (pp. 501-510). Springer New York.

[Description from Springer Website: The International Symposium on Hearing is a highly-prestigious, triennial event where world-class scientists present and discuss the most recent advances in the field of hearing research in animals and humans. Presented papers range from basic to applied research, and are of interest neuroscientists, otolaryngologists, psychologists, and artificial intelligence researchers. Basic Aspects of Hearing: Physiology and Perception includes the best papers from the 2012 International Symposium on Hearing. Over 50 chapters focus on the relationship between auditory physiology, psychoacoustics, and computational modeling.]

Preprints

Bharadwaj, H. M., Hustedt-Mai[2], A. R., Ginsberg, H. M., Dougherty[2], K. M., Muthaiah, V. P. K., Hagedorn[1], A., Simpson, J. M., Heinz, M. G. Cross-Species Experiments Reveal Widespread Cochlear Neural Damage in Normal Hearing. bioRxiv 2021.03.17.435900; doi: https://doi.org/10.1101/2021.03.17.435900

Viswanathan, V., **Bharadwaj, H. M.,**, Shinn-Cunningham, B. G., Heinz, M. G. Modulation Masking and Fine Structure Shape Neural Envelope Coding to Predict Speech Intelligibility across Diverse Listening Conditions. bioRxiv 2021.03.26.437273; doi: https://doi.org/10.1101/2021.03.26.437273

Conference Proceedings

Peng, E., Buss, E., Shen, Y., **Bharadwaj, H.**, Stecker, C., Beim, J., Bosen, A., Braza, M., Diedesch, A., Dorey, C., Dykstra, A., Freyman, R., Gallun, F., Goldsworthy, R., Gray, L., Hoover, E., Ihlefeld, A., Koelewijn, T., Kopun, J., Mesik, J., Richards, V., Shub, D., Venezia, J. (2021). Remote testing for psychological and physiological acoustics: Initial report of the ASA P&P Task Force on Remote Testing. Proceedings of Meetings on Acoustics. In Press.

Bharadwaj, H. M., Masud[1], S., & Shinn-Cunningham, B. G. (2013). The role of high-frequency cues for spatial hearing in rooms. Proceedings of Meetings on Acoustics 19:015049.

Verhulst, S., **Bharadwaj, H. M.**, Mehraei, G., & Shinn-Cunningham, B. G.(2013). Understanding hearing impairment through model predictions of brainstem responses. Proceedings of Meetings on Acoustics 19:050182.

Choi, I., Bressler, S., **Bharadwaj, H. M.**, & Shinn-Cunningham, B. (2013). Subcortical and cortical neural correlates of individual differences in temporal auditory acuity. Proceedings of Meetings on Acoustics 19:050125.

Rajaram, S., **Bharadwaj, H. M.**, Shinn-Cunningham, B. G., & Lee, A. K. C.(2011). Cortical functional connectivity inference using MEG. Noninvasive Functional Source Imaging of the

Brain and Heart & 8^{th} International Conference on Bioelectromagnetism (NFSI & ICBEM)77-80. IEEE.

Conference Presentations

[Superscript numbers indicate co-author(s) mentored by the candidate: [1]undergraduate student, [2]graduate student, [3]postdoctoral scientist]

Singh[2], R., & Bharadwaj, H. M. (2021). Two Timescales of Temporal Processing in Scene Analysis and Tracking of Dynamic Auditory Cues (Binaural, Spectral, and Amplitude). Mid-Winter Meeting of the Association for Research in Otolaryngology, Virtual, 20–24 February.

Borjigin[2], A., & Bharadwaj, H. M. (2021). Relationship Between Temporal Fine Structure Sensitivity and Speech Intelligibility Under Various Types of Noise Interference. Mid-Winter Meeting of the Association for Research in Otolaryngology, Virtual, 20–24 February.

Love[2], J., Shinn-Cunningham, B., & Bharadwaj, H. (2021). Alpha Lateralization During Orienting of Spatial Auditory Attention. Mid-Winter Meeting of the Association for Research in Otolaryngology, Virtual, 20–24 February.

Mok[2], B. A., Viswanathan, V., Borjigin[2], A., Singh[2], R., & Bharadwaj, H. (2020). Anonymous multipart web-based psychoacoustics: Infrastructure, hearing screening, and comparison with lab-based studies. The Journal of the Acoustical Society of America, 148(4), 2713-2714.

Love[2], J., Shinn-Cunningham, B., & Bharadwaj, H. (2020). Endogenous brain oscillations in the 10–20 Hz range during auditory spatial attention. The Journal of the Acoustical Society of America, 148(4), 2468-2468.

Kafi, H.[2], Mai, A. R.[2], Dougherty, K.[2], Hagedorn, A. N.[2], & Bharadwaj, H. M. (2020). *Neural Envelope Coding in Middle-aged Humans with Normal Audiograms.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Jose, 25–29 January.

Dougherty, K.[2], Mai, A. R.[2], Hagedorn, A. N.[2], & Bharadwaj, H. M. (2020). *Central Gain in the Human Auditory System: Investigations in "Normal Hearing" and in Tinnitus.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Jose, 25–29 January.

Borjigin, A.[2], & Bharadwaj, H. M. (2019). *Investigating the role of temporal fine structure in everyday hearing.* The Journal of the Acoustical Society of America, 145(3), 1872-1873.

Singh, R.*2, Bharadwaj, H. M. (2019). *Neural sensitivity to dynamic binaural cues: Human electroencephalogram and chinchilla single-unit responses.* The Journal of the Acoustical Society of America, 145(3), 1906-1906.

Mai, A.[2], Flesher, B.[2], Dougherty, K.[2], Hagedorn, A.[1], Simpson, J. M., Heinz, M. G., & Bharadwaj, H. M. (2019). *Physiological assays of suprathreshold hearing are consistent with widespread deafferentation of the human auditory periphery.* The Journal of the Acoustical Society of America, 145(3), 1663-1663.

Borjigin, A.[2], & Bharadwaj, H. M. (2019). *Individual differences in spatial hearing my arise from monaural factors.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 09–13 February.

Singh, R.[2], Sayles, M., & Bharadwaj, H. M. (2019). *Neural sensitivity to dynamic binaural cues: human EEG and chinchilla single-unit responses.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 09–13 February.

Dougherty, K.[2], Ginsberg, H., Mai, A. R.[2], Parida, S., Simpson, J. M., Heinz, M. G., & Bharadwaj, H. M. (2019). *Non-invasive assays of cochlear synaptopathy in humans and chinchillas.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 09–13 February.

Viswanathan, V., Bharadwaj, H. M., Shinn-Cunningham, B. G., & Heinz, M. G. (2019). *Human neurophysiological evaluation of envelope-based models of speech intelligibility.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 09–13 February.

Salloom, W., Bharadwaj, H. M., & Strickland, E. A. (2019). *Physiological and psychoacoustic measures of two different auditory efferent systems.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 09–13 February.

Bharadwaj, H. M., Flesher, B.[2], Mai, A.[2], Dougherty, K., Simpson, J. M., & Heinz, M. G. (2018). *Suprathreshold hearing in middle age and relationship to cochlear synaptopathy.* The Journal of the Acoustical Society of America, 144(3), 1899-1899.

Flesher, B. E.[2], Mai, A.[2], Dougherty, K.[2], Simpson, J. M., Heinz, M. G., & Bharadwaj, H. M. (2018). *Perceptual consequences of cochlear synaptopathy in middle age.* The Journal of the Acoustical Society of America, 143(3), 1750-1750.

Bharadwaj, H. M. (2018). *Individual differences in suprathreshold hearing and relationship to cochlear synaptopathy.* The Journal of the Acoustical Society of America, 143(3), 1780-1780.

Mai, A. R.[2], Flesher, B. E.[2], Simpson, J. M., Heinz, M. G., & Bharadwaj, H. M. (2018). *Effects of acoustic overexposure on the human auditory system – Measurements in a clinical setting.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 09–14 February.

Bharadwaj, H. M., Varghese, L. A., & Shinn-Cunningham, B. (2017). *Repeatability of non-invasive physiogical measures from the early auditory pathway.* The Journal of the Acoustical Society of America, 141(5), 3899-3899.

Bharadwaj, H. M., Simpson, J. M., & Heinz, M. G. (2017). *Resource sharing in a collaborative study on cochlear synaptopathy and suprathreshold hearing deficits.* The Journal of the Acoustical Society of America, 141(5), 3631-3631.

Bharadwaj, H. M., Varghese, L., Mehraei, G., Shera, C. A., & Shinn-Cunningham, B. G. (2016). *Individualized assessment of suprathreshold hearing and relationship to cochlear synaptopathy.* The Journal of the Acoustical Society of America, 140(4), 3153-3153.

Bharadwaj, H. M., Khan, S., Hamalainen, M., & Kenet, T. (2016). *Electrophysiological correlates of auditory object binding with application to autism spectrum disorders.* The Journal of the Acoustical Society of America, 140(4), 3045-3045.

Bharadwaj, H. M. (2016). *Generalized linear mixed models in hearing science.* The Journal of the Acoustical Society of America, 139(4), 2101-2101.

Shinn-Cunningham, B., Ruggles, D., Choi, I., Bharadwaj, H., Mehraei, G., & Dai, L. (2016). *How individual differences in sensory coding and attentional control impact understanding speech in noise.* The Journal of the Acoustical Society of America, 139(4), 2044-2044.

Bharadwaj, H. M., Varghese, L., Mehraei, G., Shera, C. A., & Shinn-Cunningham, B. G. (2016). *Evidence for auditory nerve contribution to individual differences in suprathreshold brainstem temporal coding.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 20–24 February.

Viswanathan, V., Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2016). *Neural signatures of speech-on-speech selective attention.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 20–24 February.

Gramfort, A., Engemann, D. A., Larson, E., Luessi, M., Brodbeck, C., Jas, M., Brooks, T., Strohmeier, D., Goj, R., van Vliet, M., Leggitt, A., Billinger, M., Bharadwaj, H. M., Parkkonen, L., & Hämäläinen, M. S. (2015). *Trends in MEG and EEG data processing using MNE.* Annual Conference of the Organization for Human Brain Mapping. Honolulu, Hawaii, 14–18 June.

Bharadwaj, H. M., Pardo, C.[1], Shera, C. A., & Shinn-Cunningham, B. G. (2015). *Olivocochlear efferent effects on neural temporal coding of sounds in humans.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 21–25 February.

Choi, I., Goldberg, H. R., Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2015). *Attentional modulation of cortical networks in a dynamic auditory scene.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 21–25 February.

Varghese, L. A., Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2015). *Attention (still) does not affect the brainstem FFR.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 21–25 February.

Masud, S.[1], Bharadwaj, H. M., & Shinn-Cunningham, B. (2014). *How high frequency envelopes influence spatial localization in rooms.* The Journal of the Acoustical Society of America, 135(4), 2282–2282.

Goldberg, H. R., Choi, I., Varghese, L. A., Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2014). *Auditory attention in a dynamic scene: Behavioral and electrophysiological correlates.* The Journal of the Acoustical Society of America, 135(4), 2415–2415.

Mehraei, G., Bharadwaj, H. M., Verhulst, S., & Shinn-Cunningham, B. G. (2014). *Effects of low spontaneous rate auditory nerve fiber loss on auditory brainstem wave-V latency.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 22–26 February.

Bharadwaj, H. M., Masud, S., Verhulst, S., Mehraei, G., & Shinn-Cunningham, B. G. (2014). *Cochlear neuropathy in "normal hearing" humans and the coding of supra-threshold sound.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 22–26 February.

Verhulst, S., Bharadwaj, H. M., Shera C. A., & Shinn-Cunningham, B. G. (2014). *A human auditory brainstem response model for broadband stimulation.* Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 22–26 February.

Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2013). *Rapid acquisition of auditory brainstem frequency following responses.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 16–20 February.

Swaminathan, J., Bharadwaj, H. M., Dai, L., & Shinn-Cunningham, B. G. (2013). *Envelope coding in humans measured with frequency following responses.* Mid-Winter Meeting of the Association for Research in Otolaryngology, Baltimore, 16-20 February.

Lee, A. K. C., Larson, E., Rajaram, S., Bharadwaj, H. M., & Shinn- Cunningham, B. G. (2012). *The cortical network controlling auditory spatial attention.* Biomag 18^{th} International Conference on Biomagnetism, Paris, France, 26–30 August.

Choi, I., Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2012). *Attentional modulation of EEG signals.* The Journal of the Acoustical Society of America, 131(4), 3513–3513.

Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2012). *Hijacking neural oscillations to reveal control of auditory attention*, Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, CA, 25–29 February.

Ruggles, D., Bharadwaj, H. M., & Shinn-Cunningham, B. G. (2012). *Sub-cortical envelope and fine structure cues: the interaction of age and individual differences for normal-hearing adults in complex environments.* The Journal of the Acoustical Society of America, 131(4), 3317–3317.

Rajaram, S., Bharadwaj, H. M., Shinn-Cunningham, B. G., & Lee, A. K. C. (2011). *Comparing coherence and phase-locking value measures of functional connectivity.* 8^th International Conference on Bioelectromagnetism, Banff, Canada, 13–16 May.

Kenet, T., Orekhova, E., Bharadwaj, H. M., Shetty, N. R., Lee, A. K. C., Vangel, M., Elam, M., Herbert, M., Hämäläinen, M. S., & Manoach, D. (2010). *A Study of Functional Connectivity During Preparation for Saccades in ASD.* International Society for Autism Research, Philadelphia, 20–22 May.

Kenet, T., Orekhova, E., Bharadwaj, H. M., Israeli, E. R., Shetty, N. R., Lee, A. K. C., Vangel, M., Elam, M., Herbert, M., Hämäläinen, M. S., & Manoach, D. (2009). *A MEG study of functional connectivity during preparation for saccades in ASD.* Society for Neuroscience Annual Meeting, Chicago, 17–21 October.

Bharadwaj, H. M., Peltier, S., Chun, J., Deldin, P. J. & Noll, D. C. (2008). *Simultaneous EEG-fMRI: Effect of choice of MRI pulse sequence.* Annual meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Toronto, 3–9 May.

Invited Talks

Plenary Talks at International Symposia

Individual Differences in Temporal Processing and Their Influence on Everyday Auditory Perception. Central Auditory Processing Disorder Global Conference. Audiology 2019 (AAA), Columbus, OH (Mar, 2019).

Does Cochlear Synaptopathy contribute to suprathreshold perceptual deficits in humans? Hearing Research Symposium at The ASHA Convention, Los Angeles, CA (Nov, 2017).

International

Web-based Psychoacoustics. Google COGHEAR: Workshop in Cognitive Hearing. Virtual (Aug, 2020).

Suprathreshold hearing in middle age and relationship to cochlear synaptopathy. 173^{rd} Meeting of the Acoustical Society of America, Victoria, BC, Canada (Nov, 2018).

Individual differences in suprathreshold hearing and relationship to cochlear synaptopathy. 172^{nd} Meeting of the Acoustical Society of America,Minneapolis, MN (May, 2018).

Individualized assays of suprathreshold hearing deficits - translational challenges. 41^{st} Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, CA (Feb, 2018).

Resource sharing in a collaborative study on cochlear synaptopathy and suprathreshold hearing deficits. 171^{st} Meeting of the Acoustical Society of America, Boston, MA (June, 2017).

Individualized assessment of suprathreshold hearing and relationship to cochlear synaptopathy. 172^{nd} Meeting of the Acoustical Society of America, Honolulu, HI (Oct, 2016).

Electrophysiological correlates of auditory object binding with application to autism spectrum disorders. 172^{nd} Meeting of the Acoustical Society of America, Honolulu, HI (Oct, 2016).

Using individual differences to study the mechanisms of suprathreshold hearing deficits. International Symposium on Auditory and Audiological Research (ISAAR 2015), Nyborg, Denmark (Aug, 2015).

Individual differences revealed by the challenges of listening in a complex, crowded scene. Special session: Comparitive perspectives on the Cocktail Party Problem, 167^{th} Meeting of the Acoustical Society of America (ASA), Providence, RI (May, 2014).

Bottom-Up and Top-Down Contributions to Individual Differences in Auditory Spatial Attention Task Performance. Young Investigator Symposium, 36^{th} Mid-Winter Meeting of the Association for Research in Otolaryngology (ARO), Baltimore, MD (Feb, 2013).

National

Cochlear Deafferentation and Central Gain in "Normal Hearing" Humans. Massacusetts Eye & Ear Infirmary SAP Seminar Series, Boston, MA (Mar, 2020).

Listening in the real world – Human auditory electrophysiology and clinical applications. Boston Children's Hospital, Boston, MA (Oct, 2015).

The cocktail-party problem – Human electrophysiology. University of Rochester (Dec, 2013).

Involvement in Graduate Research Program

Current Doctoral (PhD) Students

Varsha Mysore Athreya, SLHS, (Major Professor), 2020 – present.

Agudemu Borjigin, BME, (Major Professor), 2018 – present, Advanced to PhD Candidacy in May, 2020.

Ravinderjit Singh, BME Medical Scientist Training Program, (Major Professor), 2018 – present, Advanced to PhD Candidacy in January, 2021.

Homeira Kafi, BME, (Major Professor), 2019 – present.

Jordan Love, SLHS, (Advisory Committee Member; A. Francis, Major Professor), 2019 – present.

Emilee Madsen, BME, (Advisory Committee Member; J. Linnes, Major Professor), 2019 – present

William Salloom, PULSe Program, (Advisory Committee Member; E. Strickland, Major Professor), 2016 – present, Advanced to Candidacy in December, 2017.

Past Doctoral (PhD) Students

Satyabrata Parida, BME, (Advisory Committee Member; M. Heinz, Major Professor), Graduated 2020.

Chandan Suresh, SLHS, (Advisory Committee Member; A. Krishnan, Major Professor), Graduated 2018.

Current Clinical Doctoral (AuD) Students

Anna Hagedorn, SLHS, (Research Advisor), 2019 – present.

Kristen Wade, SLHS, (Research Advisor), 2018 – present, Capstone project completed in March, 2021.

Brittany Mok, SLHS, (Research Advisor), 2018 – present, Capstone project completed in March, 2021.

Kelsey Dougherty, SLHS, (Research Advisor), 2017 – present, Capstone project completed in March, 2020.

Past Clinical Doctoral (AuD) Students

Alexandra Mai, SLHS, (Research Advisor), Graduated 2020.

Brooke Flesher, SLHS, (Research Advisor), Graduated 2019.

Current MS Students (Theses)

Jason Ummel, BME, (Advisory Committee Member; J. Linner, Major Professor), 2019 – present.

Past MS Students (Theses)

Caitlin Heffner, BME, (Advisory Committee Member; M. Heinz, Major Professor), Thesis defense passed in Jan 2021, Expected May 2021 graduation.

Hannah Ginsberg, BME, (Advisory Committee Member; M. Heinz, Major Professor), Graduated 2020.

Involvement in Undergraduate Research Program

Past Undergraduate Students

Anna Hagedorn, SLHS (Research Advisor), Graduated 2019, Currently graduate student at Purdue University.

Hanna Malik, BIO, (Research Advisor), 2019 – 2020.

Amogh Shanbhag, ECE, (Research Advisor), 2019 – 2020.

Coralie Pardo, Mathematics, Amherst College, (Research Mentor), Graduated 2015. Currently in Medical School at Rush University.

Salwa Masud, Biomedical Engineering, Boston University, (Research Co-Mentor), Graduated 2014. Obtained PhD in 2019 from Harvard University.

Research Grants

Extramural

1. Agency/Title of Grant: Royal National Institute of Deaf People (RNiD) Flexi Grant/Mechanism-based Approach to Optimization of Noise Reduction in Hearing Aids: Influence of Individual Traits on Outcomes and Preference
2. Duration of Funding: 1 year (Aug 1, 2021 – July 31, 2022)
3. Total Amount of Award: $13,720
4. Your Role: Sponsor (PI: Subong Kim, is a postdoctoral scientist mentored by the candidate)

1. Agency/Title of Grant: NSF (Standard Grant 1840699)/NeurodataRR: Collaborative Research: Testing the relationship between musical training and enhanced neural coding and perception in noise
2. Duration of Funding: 3 years (Sep 15, 2018 – Aug 31, 2022)
3. Total Amount of Award: $125,000 (for Purdue Site)
4. Your Role: PI (for Purdue Site)

1. Agency/Title of Grant: NIH-NIDCD (R01-DC015989)/Individualized Assays of Suprathreshold Hearing Deficits
2. Duration of Funding: 5 years (Mar 1, 2017 – Feb 28, 2022)
3. Total Amount of Award: $1,881,505
4. Your Role: PI

1. Agency/Title of Grant: NIH-NIDCD (R01-DC008327)/Temporal Effects in Forward Masking, Suppression, and Simultaneous Masking
2. Duration of Award: 5 years (Apr 01, 2016 – Mar 30, 2021)
3. Total Amount of Award: $1,49,065
4. Your Role: Co-Investigator (PI: Strickland, Elizabeth)

1. Agency/Title of Grant: Hearing Health Foundation Emerging Research Grant/Subcortical and Cortical Contributions to Temporal Processing Deficits in Central Auditory Processing Disorders
2. Duration of Award: 1 year and 1 month (Jul 1, 2015 – Jul 30, 2016)
3. Total Amount of Award:$30,000
4. Your Role: PI

1. Agency/Title of Grant: Action on Hearing Loss F45 Flexi Grant/Cognitive Contributions to Individual Differences in Selective Attention: A Pilot Magnetoencephalography Study
2.Duration of Award: 4 months (Jul 1, 2015 – Jul 30, 2016)
3. Total Amount of Award:$7,400
4. Your Role: Co-PI (with Inyong Choi)

Intramural

1. Agency/Title of Grant: Purdue Institute for Integrative Neuroscience/Grand Challenges in Neuroscience Grant: Data-science Infrastructure for Precision Auditory Neuroscience
2. Duration: 1 year (March 01, 2020 – April 30, 2021)
3. Total Award Amount: $140,165
4. Your Role: Co-PI (Grant awarded to the hearing-science group at Purdue)

1. Agency/Title of Grant: Purdue Institute for Integrative Neuroscience/Connecting laboratory and clinical auditory neuroscience at Purdue: 2. Duration of Award: Seed grant for purchase of research equipment (Jun 03, 2016)
3. Total Award Amount: $9,630
4. Your Role: PI

Other Evidence of National and International Recognition

Conference Organization

Organizer and Chair (with Inyong Choi), Young Investigator Symposium on "Active Auditory Processing: Basic Mechanisms, Individual Differences and Clinical Applications", 39^{th} Mid-Winter Meeting of the Association for Research in Otolaryngology, San Diego, 20–24 February, 2016.

Editorial Service and Review for Professional Journals, Funding Agencies

2021	Grant review panel	Hearing Health Foundation, USA
2020	Grant review panel	Hearing Health Foundataion, USA
2019	Grant review panel	National Institutes of Health (Study Section: ZAT1 PJ05, NCCIH)
2019 –	Associate Editor	Journal of the Acoustical Society of America
2019	Grant review panel	Hearing Health Foundataion, USA
2018	Grant review panel	Hearing Health Foundataion, USA
2017	Grant review panel	Hearing Health Foundataion, USA
2016 – 2017	Guest Associate Editor	Frontiers in Neuroscience
2015	Grant review panel	Action on Hearing Loss, UK
2008 –	Adhoc Reviewer	The Journal of the Acoustical Society of America Journal of the Association for Research in Otolaryngology Ear and Hearing

The Journal of Neuroscience
Hearing Research
eLife
The Journal of Cognitive Neuroscience
Nature Scientific Reports
International Journal of Audiology
Frontiers in Neuroscience
Clinical Neurophysiology
Experimental Brain Research
Biomedical Signal Processing and Control
Neuroscience (Elsevier)

Consulting Activities

2019 –	Consultant, NIH P50 Clinical Research Center, "Cochlear Synaptopathy: Prevalence, Diagnosis and Functional Consequences", PI: Sharon Kujawa, Massachusetts Eye & Ear Infirmary.
2019 –	Consultant, Otonomy, Inc., San Diego, CA
2019	Advisory Board, Sirocco Therapeutics, San Diego, CA

Section B: LEARNING

Courses Taught in Past Three Years

SLHS 553	Implantable Devices (Fall 2017, Fall 2018, Spring 2019, Spring 2020, Spring 2021)
BME 595-MJ4 (now 511)	Biomedical Signal Processing (Fall 2017, Fall 2019)
SLHS 619	Seminars in Hearing Research (Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021)
BME 695/SLHS 619	Special Lectures in Neuroscience: Audition - from neural circuits to perception (Spring 2018, co-taught with M. Sayles and M. Heinz)

Directed and Independent Studies

BIOL 294	Undergraduate Research Experience (Spring 2020)
BME 296	Undergraduate Research Experience (Fall 2019)
BIOL 494	Undergraduate Research Experience (Summer 2020)
SLHS 498	Undergraduate Research Experience (Spring 2018, Fall 2018)
SLHS 690	Directed Study of Special Problems (Spring 2020, Fall 2020, Spring 2021)
SLHS 590	Directed Study of Special Problems (Spring 2018, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020)
SLHS 590	Audiology Graduate Research (Fall 2018, Fall 2019, Fall 2020)
SLHS 699	Research PhD Thesis (2020 – 2021)
BME 699	Research PhD Thesis (2018 – 2021)

Guest Lectures

Cochlear Synaptopathy – A truly neural form of sensorineural hearing loss. Advanced Medical Audiology (SLHS 619), Februrary 26, 2021.

Cochlear Synaptopathy – Subclinical Hearing Loss. Hearing Conservation (SLHS 570), March 24, 2020.

Cochlear Synaptopathy. Hearing Conservation (SLHS 570), February 26, 2020.

Cochlear Synaptopathy – A truly neural form of sensorineural hearing loss. Advanced Medical Audiology (SLHS 619), Februrary 07, 2020.

Hidden Hearing Loss. Advanced Medical Audiology (SLHS 619), Februrary 22, 2019.

Cochlear Synaptopathy aka Hidden Hearing Loss. Hearing Conservation (SLHS 570), February 20, 2018.

Exploring bottom-up sensation and top-down control using Magneto/Electroencephalography, Neural Systems (BIOL 562), March 03, 2017.

Cochlear Synaptopathy aka Hidden Hearing Loss. Hearing Conservation (SLHS 570), February 21, 2017.

Course/Teaching Evaluations

Course Number	**SLHS 553**			**BME 595-MJ4**	
Semester and Year	F/2017	F/2018	S/2019	F/2017	F/2019
Enrollment	9	10	7	12	17
Number of Respondents	7	3	7	12	14
The instructor displayed a clear understanding of course topics	4.8	4.8	5.0	5.0	5.0
I have learned a great deal in this course (or) I have gained knowledge in this particular field	4.3	5.0	5.0	4.7	4.8
Climate of the class was conducive to learning	4.9	5.0	5.0	NA	NA
My instructor shows respect for diverse groups of people (or) treats all students with respect	4.6	4.8	5.0	5.0	5.0
My instructor stimulates interest in this topic	NA	NA	NA	4.8	4.8
Instructor provides reasonable feedback that corresponds with course learning objectives	NA	NA	NA	4.6	4.5
Overall, I would rate this course as*	4.2	4.8	5.0	4.6	4.7
Overall, I would rate this instructor as*	4.3	4.8	5.0	4.8	4.8

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree
Scale*: 1=Very Poor, 2 = Poor, 3 = Fair, 4 = Good, 5 = Excellent
Note: Evaluations are median (Grp med) scores for each item

Section C: ENGAGEMENT

University, School, and Departmental Administrative Service

College of Health and Human Sciences, Purdue University

2020 – 2021 Research Advisory Committee

College of Engineering, Purdue University

2019 – 2020 Engineering Academic Career Club (EACC) Mentoring Circle

Department of Speech, Language, & Hearing Sciences, Purdue University

2019 – 2020 Search Committee: Tenure-track faculty position in Hearing Science/Audiology
2019 – Audiology Curriculum Committee
2018 – Seminars in Hearing Research Organizer
2018 – 2019 Search Committee: Tenure-track faculty position in Speech Physiology
2017 – Graduate Committee and Ph.D. Admissions
2017 – 2018 Au.D. Admissions Committee
2016 – 2017 Brown Bag Seminar Organizer
2016 – 2017 Library Committee

Weldon School of Biomedical Engineering, Purdue University

2020 – Ph.D. Qualifying Procedures (PQP) Committee
2019 – 2020 Graduate Committee
2016 – 2019 Graduate Admissions Committee

Service for Professional Societies

2020 – Psychological and Physiological Acoustics Taskforce on Remote Testing, Acoustical Society of America
2017 – 2020 Elected Member of the Technical Committee on Psychological and Physiological Acoustics, Acoustical Society of America