Curriculum Vitae

Michael G. Heinz **Jan 2025**

Contact

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Research Interests

Neural correlates of normal and impaired auditory perception, noise-induced hearing loss, precision auditory neuroscience, models of auditory signal processing and perception

Education

Ph.D.	2000	Massachusetts Institute of Technology Speech and Hearing Sciences, Division of Health Sciences and Technology Dissertation Title: "Quantifying the effects of the cochlear amplifier on temporal and average-rate information in the auditory nerve" Dissertation Advisor: Laurel H. Carney, Ph.D.
M.S.E	1994	Johns Hopkins University Electrical and Computer Engineering
Sc.B.	1992	Brown University Engineering (Electrical)

Professional Experience

Associate Head for Research	Dept. of Speech, Language, and Hearing Sci., Purdue Univ.	2023 – present
Professor	Dept. of Speech, Language, and Hearing Sci., Purdue Univ.	2015 – present
Professor	Weldon School of Biomedical Engineering, Purdue Univ.	2015 – present
Academic Visitor	Dept. of Psychology, University of Cambridge, England.	2013
Visiting Fellow	Wolfson College, University of Cambridge, England.	2013
Associate Professor	Dept. of Speech, Language, and Hearing Sci., Purdue Univ.	2011 – 2015
Associate Professor	Weldon School of Biomedical Engineering, Purdue Univ.	2011 – 2015
Assistant Professor	Dept. of Speech, Language, and Hearing Sci., Purdue Univ.	2005 – 2011
Assistant Professor	Weldon School of Biomedical Engineering, Purdue Univ.	2005 – 2011
Research Associate	Dept. of Biomedical Engineering, Johns Hopkins University	2004 – 2005
NIH Postdoctoral Fellow	Department of Biomedical Engineering, Johns Hopkins University, Supervisor: Eric D. Young, Ph.D.	2000 – 2004
Research Assistant	Hearing Research Center and Department of Biomedical Engineering, Boston University	1995 – 2000
NIH Predoctoral Fellow	Speech and Hearing Sciences Program, Division of Health Sciences and Technology, Harvard University – MIT	1995 – 1999
Research Assistant	Department of Electrical and Computer Engineering and Department of Otolaryngology, Johns Hopkins University	1992 – 1995

RESEARCH ACTIVITIES

Extramural sponsorship

Effects of sensorineural hearing loss on robust speech coding, NIH (NIDCD, R01-DC009838), 7/1/23-6/30/28. $ 2,234,179 TDC. Principal Investigator.

Cross-species characterization of peripheral and central effects of occupational and blast exposures: Towards a diagnostic and therapeutic testing framework, DoD (CDMRP, W81XWH-21-1-0829), 9/1/21-8/30/25. $245,640 TDC. Principal Investigator (Co-PIs: E. Bartlett, H. Bharadwaj).

Open Source Hearing Assessment System for Open Science, NIH (NIDCD, R44-DC021123), 1/1/24-12/31/27. $729,719 TDC at Purdue. PI for Purdue subaward (PI: Odile Clavier, Creare LLC).

Interdisciplinary Training in Auditory Neuroscience, NIH (NIDCD, T32-DC016853), 7/1/18-6/30/28. $766,645TDC. Co-Director (w/ E. Bartlett).

Understanding the physiological roles of MOC efferent pathways for hearing in noise, NIH Post-doctoral Fellowship (NIDCD, F32-DC022782), 1/1/25-12/31/27, $ 224,868 TDC, Sponsor (PI: A. Farhadi)

Individualized Profiles of Sensorineural Hearing Loss from Non-Invasive Biomarkers of Peripheral Pathology, NIH Post-doctoral Fellowship (NIDCD, F32-DC021345), 9/1/23-8/30/25, $186,480 TDC, Sponsor (PI: S. Hauser, AuD; Co-Sponsor: H. Bharadwaj)

Place and Time Processing of Pitch in the Context of Cochlear Dysfunction, NIH Pre-doctoral Fellowship (NIDCD, F30-DC020916), 1/1/23-12/31/25, $155,256 TDC, Sponsor (PI: A. Sivaprakasam; Co-Sponsors: H. Bharadwaj, Rick Nelson)

Intramural sponsorship

Data-Driven Cross-Species Auditory Neuroscience for Accessible Mechanistic Precision Audiology, Office of Research and Provost's Office, 1/1/24-12/31/25. $500,000 TDC, Purdue Life and Health Science Summit, Principal Investigator (Co-Is: A. Grama, J. Simpson, E. Bartlett, J. Alexander, M. Shader).

Previous extramural sponsorship

Individualized assays of supra-threshold hearing deficits, NIH (NIDCD, R01-DC015989), 3/1/17-6/30/24. $1,250,000 TDC. Co-PI (PI: Hari Bharadwaj).

Effects of sensorineural hearing loss on robust speech coding, NIH (NIDCD, R01-DC009838), 12/1/14-6/30/21. $1,062,500 TDC. Principal Investigator.

Neurophysiological Mechanisms of Speech Intelligibility in Noise – A Quantitative Framework, NIH Pre-doctoral Fellowship (NIDCD, F31-DC017381), 9/1/18-8/31/21, $133,572 TDC, Sponsor (PI: V. Viswanathan; Co-Sponsor: B. Shinn-Cunningham)

Temporal effects in simultaneous masking, forward masking and suppression, NIH (NIDCD, R01-DC008327), 4/1/16-3/31/21. $1,062,500 TDC, Co-Investigator (PI: E. Strickland).

Effects of noise-induced hearing loss on brainstem coding of sounds in freely-moving awake-behaving chinchillas, Purdue EVPRP NIH-targeted funding opportunities initiative – new R01 program, 12/1/17-11/30/18. $30,000, Principal Investigator (Co-PI: P. Irazoqui, Co-Investigator: M. Sayles).

Physiological evaluation of the signal-to-noise envelope power ratio with sensorineural hearing loss: Implications for speech intelligibility, International Project Grant from Action on Hearing Loss (UK), 3/15/15-3/14/18. £156,375 ($237,395) TDC. Principal Investigator.

Behavioral testing for hidden hearing loss in chinchillas: Towards human diagnostics, Grant-in-aid from American Hearing Research Foundation, 1/1/14-12/31/14. $20,000 TDC. Co-PI (with Ann Hickox).

Effects of sensorineural hearing loss on robust speech coding, NIH (NIDCD, R01-DC009838), 9/18/09-11/31/14. $1,467,103 TDC. Principal Investigator.

Temporal effects in simultaneous masking, forward masking and suppression, NIH (NIDCD, R01-DC008327), 3/1/08-2/28/15. $1,250,000 TDC ($206,963 to M. Heinz), Co-Investigator (PI: E. Strickland).

Effects of noise-induced and metabolic hearing losses on temporal coding in noise, NIH Post-doctoral Fellowship (NIDCD, F32-DC012236), 1/1/12-8/31/13, $99,724 TDC, Sponsor (PI: K. Henry; Co-Sponsor: A. Smith)

Effects of hearing aid amplification on robust speech coding, NIH Pre-doctoral Fellowship (NIDCD, F31-DC010966), 1/1/10-12/31/11, $82,352 TDC, Sponsor (PI: J. Boley; Co-Sponsor: D. Fekete)

The effects of noise-induced hearing loss on across-fiber temporal coding in the auditory nerve, Grant-in-aid from National Organization for Hearing Research Foundation, 1/30/09-1/29/10. $20,000 TDC. Principal Investigator.

Effects of sensorineural loss on robust speech coding, NIH (NIDCD, R03-DC007348), 12/13/04-11/30/09. $150,000 TDC. Principal Investigator.

The effects of selective hair-cell damage on temporal envelope coding in the auditory nerve, Grant-in-aid from American Hearing Research Foundation, 1/1/08-12/31/08. $20,000 TDC. Principal Investigator.

Cross-frequency coincidence detection as a neural mechanism for enhanced spectral coding, Grant-in-aid from National Organization for Hearing Research Foundation, 1/16/04-1/15/05. $15,000 TDC. Principal Investigator.

Level encoding in the auditory nerve and cochlear nucleus of hearing-impaired cats, Individual National Research Service Award for Postdoctoral Fellowship from NIH (NIDCD, F32-DC05521), 2/1/02-1/31/04. $73,740 TDC. Principal Investigator.

Previous intramural sponsorship

Data-science infrastructure for precision auditory neuroscience, Purdue Institute for Integrative Neuroscience, 7/1/20-6/30/23. $140,165 TDC, Grand Challenges in Neuroscience Grant, Co-Principal Investigator (Co-PIs: H. Bharadwaj, M. Adibuzzaman).

Shared multi-user microscope for SLHS research, Purdue Office of the Provost, 7/1/16-6/30/17. $108,762, Major Scientific Equipment Program. (w/ Sayles, Sivasankar, Halum).

Connecting laboratory and clinical auditory neuroscience at Purdue: Non-invasive assays of cochlear synaptopathy, Purdue Institute for Integrative Neuroscience, 7/1/16-6/30/17. $9,630, Seed Funding Program. (w/ Bharadwaj, Simpson)

Neural Coding of Envelope and Fine Structure in Noise Degraded Speech, Purdue Research Foundation, 6/1/09-5/31/10. $16,750 TDC, Graduate Student Research Grant (Jayaganesh Swaminathan).

Peer-reviewed scientific articles (h-index=33, Citations: 4081, Google Scholar Jan 26, 2025)

1. Viswanathan, V., Heinz, M. G., and Shinn-Cunningham, B. G. (2024). "Impact of reduced spectral resolution on temporal-coherence–based source segregation," J. Acoust. Soc. Am., 156, 3862–3876.
2. F. Deloche, S. Parida, A. Sivaprakasam, M.G. Heinz. (2024). "Estimation of cochlear frequency selectivity using a convolution model of forward-masked compound action potentials," J. Assoc. Res. Otolaryngol., 25, 35-51.
3. Ginsberg, H. M., Singh, R., Bharadwaj, H. M., and Heinz, M. G. (2023). "A multi-channel EEG mini-cap can improve reliability for recording auditory brainstem responses in chinchillas," J. Neurosci. Methods, 398, 109954.
4. Viswanathan, V., Bharadwaj, H. M., Heinz, M. G., and Shinn-Cunningham, B. G. (2023). "Induced alpha and beta electroencephalographic rhythms covary with single-trial speech intelligibility in competition," Sci Rep, 13, 10216.
5. Parida, S., and Heinz, M. G. (2022). "Underlying neural mechanisms of degraded speech intelligibility following noise-induced hearing loss: The importance of distorted tonotopy," Hear. Res., 426, 108586.
6. Bharadwaj, H. M., Hustedt-Mai, A. R., Ginsberg, H. M., Dougherty, K. M., Muthaiah, V. P. K., Hagedorn, A., Simpson, J. M., Heinz, M. G. (2022). "Cross-species experiments reveal widespread cochlear neural damage in normal hearing," Commun Biol, 5, 733.
7. Parida, S., and Heinz, M. G. (2022). "Distorted tonotopy severely degrades neural representations of connected speech in noise following acoustic trauma," J. Neurosci., 42, 1477–1490.
8. Viswanathan, V., Shinn-Cunningham, B. G., and Heinz, M. G. (2022). "Speech categorization reveals the role of early-stage temporal-coherence processing in auditory scene analysis," J. Neurosci., 42, 240-254.
9. Settibhaktini, H., Heinz, M.G., and Chintanpalli, A. (2021). "Modeling the effects of age and hearing loss on concurrent vowel scores," J. Acoust. Soc. Am., 150, 3581-3592.

10. Viswanathan, V., Shinn-Cunningham, B. G., and Heinz, M. G. (2021). "Temporal fine structure influences voicing confusions for consonant identification in multi-talker babble," J. Acoust. Soc. Am., 150, 2664–2676.
11. Viswanathan, V., Bharadwaj, H. M., Shinn-Cunningham, B. G., and Heinz, M. G. (2021). "Modulation masking and fine structure shape neural envelope coding to predict speech intelligibility across diverse listening conditions," J. Acoust. Soc. Am., 150, 2230–2244.
12. Parida, S., Bharadwaj, H., and Heinz, M.G. (2021). "Spectrally specific temporal analyses of spike-train responses to complex sounds: A unifying framework," PloS Comput Biol, 17, e1008155.
13. Parida, S. and Heinz, M.G. (2020). "Noninvasive measures of distorted tonotopic speech coding following noise-induced hearing loss," J. Assoc. Res. Otolaryngol, 22, 51–66.
14. Trevino, M., Lobarinas, E., Maulden, A., and Heinz, M. G. (2019). "The chinchilla animal model for hearing science and noise-induced hearing loss," J. Acoust. Soc. Am., 146, 3710-3732.
15. Henry, K.S., Sayles, M., Hickox, A.E., and Heinz, M.G. (2019). "Divergent auditory nerve encoding deficits between two common etiologies of sensorineural hearing loss," J. Neurosci., 39, 6879-6887.
16. Bharadwaj, H.M., Mai, A.R., Simpson, J.M., Choi, I., Heinz, M.G., Shinn-Cunningham, B.G., (2019). "Non-invasive assays of cochlear synaptopathy – Candidates and considerations," Neurosci., 407, 53-66.
17. Verschooten, E., Shamma, S., Oxenham, A.J., Moore, B.C.J., Joris, P.X., Heinz, M.G., Plack, C.J., (2019). "The upper frequency limit for the use of phase locking to code temporal fine structure in humans: A compilation of viewpoints," Hear. Res., 377, 109–121.
18. Smith, S.S., Chintanpalli, A., Heinz, M.G., Sumner, C.J. (2018). "Revisiting models of concurrent vowel identification: The critical case of no pitch differences," Acta Acustica united with Acustica, 104, 922-925
19. Moore, B. C. J., Heinz, M. G., Braida, L. D., and Léger, A. C. (2018). "Effects of age on sensitivity to interaural time differences in envelope and fine structure, individually and in combination," J. Acoust. Soc. Am., 143, 1287–1296.
20. Prendergast, G., Millman, R.E., Guest, H., Munro, K.J., Kluk, K., Dewey, R.S., Hall, D.A., Heinz, M.G., Plack, C.J. (2017). "Effects of noise exposure on young adults with normal audiograms II: Behavioral measures," Hear. Res., 356, 74-86.
21. Hickox, A.E., Larsen, E., Heinz, M.G., Shinobu, L., and Whitton, J.P., (2017). "Translational issues in cochlear synaptopathy," Hear. Res., 349, 164-171.
22. Prendergast, G., Guest, H., Munro, K.J., Kluk, K., Léger, A., Hall, D.A., Heinz, M.G., Plack, C.J. (2017). "Effects of noise exposure on young adults with normal audiograms I: Electrophysiology," Hear. Res., 344, 68-81.
23. Rallapalli, V.H., and Heinz, M.G. (2016). "Neural spike-train analyses of the speech-based envelope power spectrum model: Application to predicting individual differences with sensorineural hearing loss," Trends Hear., 20, 1-14.
24. Henry, K.S., Kale, S., and Heinz, M.G. (2016). "Distorted tonotopic coding of temporal envelope and fine structure with noise-induced hearing loss," J. Neurosci., 36, 2227-2237.
25. Sayles, M., Walls, M.K., and Heinz, M.G. (2016). "Suppression measured from chinchilla auditory-nerve-fiber responses following noise-induced hearing loss: Adaptive-tracking and systems-identification approaches," Adv. Exp. Med. Biol., 894, 285-295.
26. Gehlhausen, J.R., Park, S.J., Hickox, A.E., Shew, M., Staser, K., Rhodes, S.D., Menon, K., Lajiness, J.D., Mwanthi, M., Yang, X., Yuan, J., Territo, P., Hutchins, G., Nalepa, G., Yang, F.C., Conway, S.J., Heinz, M.G., Stemmer-Rachamimov, A., Yates, C.W., Clapp, D.W. (2015). "A murine model of neurofibromatosis type 2 that accurately phenocopies human schwannoma formation," Hum. Mol. Genet., 24, 1-8.
27. Moon, I.J., Won, J.H., Park, M.H., Ives, D.T., Nie, K., Heinz, M.G., Lorenzi, C., and Rubinstein J.T. (2014). "Optimal combination of neural temporal envelope and fine structure cues to explain speech identification in background noise," J. Neurosci., 34, 12145-12154.

28. Kale, S., Micheyl, C. and Heinz, M.G. (2014). "Implications of within-fiber temporal coding for perceptual studies of F0-discrimination and discrimination of harmonic and inharmonic tone complexes," J. Assoc. Res. Otolaryngol., 15, 465-482.
29. Henry, K.S., Kale, S., and Heinz, M.G. (2014). "Noise-induced hearing loss increases the temporal precision of complex envelope coding by auditory-nerve fibers," Front. Syst. Neurosci., 8, 20.
30. Smalt, C., Heinz, M.G., and Strickland, E. A. (2014). "Modeling the time-varying and level dependent effects of the medial olivocochlear reflex in auditory-nerve responses," J. Assoc. Res. Otolaryngol., 15, 159-173.
31. Zhong, Z., Henry, K.S., and Heinz, M.G. (2014). "Sensorineural hearing loss amplifies neural coding of envelope information in the central auditory system of chinchillas," Hear. Res., 309, 55-62.
32. Chintanpalli, A., and Heinz, M.G. (2013). "The use of confusion patterns to evaluate the neural basis for concurrent vowel identification," J. Acoust. Soc. Am., 134, 2988-3000.
33. Kale, S., Micheyl, C., and Heinz, M.G. (2013). "Effects of sensorineural hearing loss on temporal coding of harmonic and inharmonic tone complexes in the auditory nerve," Adv. Exp. Med. Bio., 787, 109-118.
34. Henry, K.S., and Heinz, M.G. (2013). "Effects of sensorineural hearing loss on temporal coding of narrowband and broadband signals in the auditory periphery," Hear. Res., 303, 39-47 (Invited Review).
35. Henry, K.S., and Heinz, M.G. (2012). "Diminished temporal coding with sensorineural hearing loss emerges in background noise," Nat. Neurosci., 15, 1362-1364.
36. Swaminathan, J. and Heinz, M.G. (2012). "Psychophysiological analyses demonstrate the importance of neural envelope coding for speech perception in noise," J. Neurosci., 32, 1747-1756.
37. Chintanpalli, A., Jennings, S.G., Heinz, M.G., and Strickland, E. A. (2012). "Modeling the anti-masking effects of the olivocochlear reflex in auditory-nerve responses to tones in noise," J. Assoc. Res. Otolaryngol., 13: 219-235.
38. Kale, S. and Heinz, M.G. (2012). "Temporal modulation transfer functions measured from auditory-nerve responses following sensorineural hearing loss," Hear. Res., 286, 64-75.
39. Henry, K.S., Kale, S., Scheidt, R.E., and Heinz, M.G. (2011). "Auditory brainstem responses predict auditory nerve fiber thresholds and frequency selectivity in hearing impaired chinchillas," Hear. Res., 280, 236-244.
40. Bidelman, G.M. and Heinz, M.G. (2011). "Auditory-nerve responses predict pitch attributes related to musical consonance and dissonance for normal and impaired hearing," J. Acoust. Soc. Am., 130, 1488-1502.
41. Swaminathan, J. and Heinz, M.G. (2011). "Predicted effects of sensorineural hearing loss on across-fiber envelope coding in the auditory nerve," J. Acoust. Soc. Am., 129, 4001-4013.
42. Jennings, S.G., Heinz, M.G., and Strickland, E.A. (2011). "Evaluating adaptation and olivocochlear efferent feedback as potential explanations of psychophysical overshoot," J. Assoc. Res. Otolaryngology, 12, 345-360.
43. Kale, S. and Heinz, M.G. (2010). "Envelope coding in auditory nerve fibers following noise-induced hearing loss," J. Assoc. Res. Otolaryngology, 11, 657-673.
44. Scheidt, R.E., Kale, S. and Heinz, M.G. (2010). "Noise-induced hearing loss alters the temporal dynamics of auditory-nerve responses," Hear. Res., 269, 23-33.
45. Heinz, M.G. and Swaminathan, J. (2009). "Quantifying envelope and fine-structure coding in auditory nerve responses to chimaeric speech," J. Assoc. Res. Otolaryngology, 10, 407-423.
46. Jennings, S.G., Strickland, E.A., and Heinz, M.G. (2009). "Precursor effects on behavioral estimates of frequency selectivity and gain in forward masking," J. Acoust. Soc. Am., 125, 2172-2181.
47. Chintanpalli, A., and Heinz, M.G. (2007). "Effect of auditory-nerve response variability on estimates of tuning curves," J. Acoust. Soc. Am. 122, EL203-EL209.
48. Heinz, M.G., Issa, J.B., and Young, E.D. (2005). "Auditory-nerve rate responses are inconsistent with common hypotheses for the neural correlates of loudness recruitment," J. Assoc. Res. Otolaryngology 6, 91-105.
49. Heinz, M.G., and Young, E.D. (2004). "Response growth with sound level in auditory-nerve fibers after noise-induced hearing loss," J. Neurophysiol. 91, 784-795.

50. Colburn, H.S., Carney, L.H., and Heinz, M.G. (2003). "Quantifying the information in auditory-nerve responses for level discrimination," J. Assoc. Res. Otolaryngology 4, 294-311.
51. Heinz, M.G., Colburn, H.S., and Carney, L.H. (2002). "Quantifying the implications of nonlinear cochlear tuning for auditory-filter estimates," J. Acoust. Soc. Am. 111, 996-1011.
52. Carney, L.H., Heinz, M.G., Evilsizer, M.E., Gilkey, R.H., and Colburn, H.S. (2002). "Auditory phase opponency: A temporal model for masked detection at low frequencies," Acta Acustica united with Acustica 88, 334-347.
53. Formby, C., Heinz, M.G., and Aleksandrovsky, I.V. (2002). "Temporal integration of sinusoidal increments in the absence of absolute energy cues," J. Speech Lang. Hear. Res. 45, 1285-1296.
54. Heinz, M.G., Colburn, H.S., and Carney, L.H. (2001). "Rate and timing cues associated with the cochlear amplifier: Level discrimination based on monaural cross-frequency coincidence detection," J. Acoust. Soc. Am. 110, 2065-2084.
55. Heinz, M.G., Colburn, H.S., and Carney, L.H. (2001). "Evaluating auditory performance limits: I. One-parameter discrimination using a computational model for the auditory nerve," Neural Computation 13, 2273-2316.
56. Heinz, M.G., Colburn, H.S., and Carney, L.H. (2001). "Evaluating auditory performance limits: II. One-parameter discrimination with random-level variation," Neural Computation 13, 2317-2339.
57. Heinz, M.G., Zhang, X., Bruce, I.C., and Carney, L.H. (2001). "Auditory nerve model for predicting performance limits of normal and impaired listeners," Acoustic Research Letters Online 2, 91-96.
58. Zhang, X., Heinz, M.G., Bruce, I.C., and Carney, L.H. (2001). "A phenomenological model for the responses of auditory-nerve fibers: I. Nonlinear tuning with compression and suppression," J. Acoust. Soc. Am. 109, 648-670.
59. Heinz, M.G., and Formby, C. (1999). "Detection of time- and bandlimited increments and decrements in a random-level noise," J. Acoust. Soc. Am. 106, 313-326.
60. Heinz, M.G., Goldstein, M.H. Jr., and Formby, C. (1996). "Temporal gap detection thresholds in sinusoidal markers simulated with a multi-channel, multi-resolution model of the auditory periphery," Aud. Neurosci. 3, 35-56.
61. Formby, C., Heinz, M.G., Luna, C.E., and Shaheen, M.K. (1994). "Masked detection thresholds and temporal integration for noise band signals," J. Acoust. Soc. Am. 96, 102-114.

Inventions, patents, copyrights

1. "Auditory Model-Inspired Automatic Speech Recognition." M. Beltman, M. Kwon, T. Talavage, M.G. Heinz, J.M. Alexander, S. Bolton, Intel Corporation. Disclosed: February 5, 2014.

Non peer-reviewed articles

1. Contributor to Wikipedia Hearing Project: Notions of temporal envelope and temporal fine structure. Workshop at Ecole Normale Supérieure, Paris, France. Nov 29, 2017. Wikipedia Page: "*Temporal envelope and fine structure*" https://en.m.wikipedia.org/wiki/Temporal_envelope_and_fine_structure
2. Heinz, M.G. (2012). "Physiological correlates of perceptual deficits following sensorineural hearing loss," *Acoustics Today*, 8, 34-40.

Book chapters

1. Sayles, M., and Heinz, M.G. (2017). "Afferent coding and efferent control in the normal and impaired cochlea," In G. Manley, A. Gummer, R.R. Fay, A.N. Popper (Eds.), *Understanding the Cochlea [Springer Handbook of Auditory Research (SHAR)]*, Springer, New York, pp. 215-252.
2. Heinz, M.G. (2016). "Neural modelling to relate individual differences in physiological and perceptual responses with sensorineural hearing loss," In S. Santurette, T. Dau, J. C. Dalsgaard, L. Tranebjærg, and T. Andersen (Eds.), *Individual hearing loss – Characterization, modelling, compensation strategies*. Danavox Jubilee Foundation, Nyborg, Denmark, pp. 137-148.

3. Heinz, M.G. (2012). "Intensity coding throughout the auditory system." In K.L. Tremblay and R.F. Burkard (Eds.) *Translational Perspectives in Auditory Neuroscience: Normal Aspects of Hearing*, Plural Publishing, pp. 349-386.
4. Heinz, M.G. (2010). "Computational modeling of sensorineural hearing loss," In R. Meddis, E.A. Lopez-Poveda, R.R. Fay, A.N. Popper (Eds.), *Computational Models of the Auditory System [Springer Handbook of Auditory Research (SHAR)]*, Springer, New York, pp. 177-202.
5. Heinz, M.G., Swaminathan, J., Boley, J.D., and Kale, S. (2010). "Across-fiber coding of temporal fine-structure: Effects of noise-induced hearing loss on auditory-nerve responses," In: E.A. Lopez-Poveda, A.R. Palmer, and R. Meddis (Eds.), *The Neurophysiological Bases of Auditory Perception*, New York: Springer, pp. 621-630.
6. Florentine, M. and Heinz, M.G. (2009) "Audition: Loudness," In: E.B. Goldstein ed., *Encyclopedia of Perception*. Thousand Oaks, California: Sage Publications, pp. 145-151.
7. Heinz, M.G. (2007). "Spatiotemporal encoding of vowels in noise studied with the responses of individual auditory nerve fibers," In B. Kollmeier, G. Klump, V. Hohmann, U. Langemann, M. Mauermann, S. Uppenkamp and J. Verhey (Eds.), *Hearing – From Sensory Processing to Perception*. Heidelberg: Springer Verlag, pp 107-115.
8. Heinz, M.G., Scepanovic, D., Issa, J., Sachs, M.B., and Young, E.D. (2005). "Normal and impaired level encoding: Effects of noise-induced hearing loss on auditory-nerve responses," In D. Pressnitzer, A. de Cheveigné, S. McAdams, L. Collet (Eds.) *Auditory Signal Processing: Physiology, Psychoacoustics and Models*. New York: Springer. Pp. 40-49.

Conference proceedings

1. Deloche, F., Sivaprakasam, A., Heinz, M. G. (2022) "Characterization of Cochlear Compressive Nonlinearities Using Forward-Masked Compound Action Potentials." 19th International Symposium on Hearing. Lyon, France, 2022. [Preprint Available from Zenodo 6576993: https://zenodo.org/record/6576994].
2. Heinz, M.G., and Henry, K.S. (2013). "Modeling disrupted tonotopicity of temporal coding following sensorineural hearing loss," *Proceedings of Meetings on Acoustics*, 19, 050177.
3. Axe, D.R., and Heinz, M.G. (2013). "Effects of inner hair cell damage on temporal coding," *Proceedings of Meetings on Acoustics*, 19, 050101.
4. Henry, K.S., Snyder, S.F., and Heinz, M.G. (2013). "Correlations between noninvasive and direct physiological metrics of auditory function in chinchillas with noise-induced hearing loss," *Proceedings of Meetings on Acoustics*, 19, 050100.

Invited talks

1. Heinz, M.G. "Dissecting sensorineural hearing loss towards precision audiology," Hearing, Balance, and Chemical Senses program (HBCS) Seminar Series, Kresge Hearing Research Institute, University of Michigan, Feb 2024.
2. Heinz, M.G. "Dissecting sensorineural hearing loss towards precision audiology," Biomedical Engineering Seminar Series, University of Miami, October 2023.
3. Heinz, M.G. "The importance of distorted tonotopy in degraded speech intelligibility with noise-induced hearing loss: Potential contributions to individual differences," 14th International Workshop on Auditory Processing, Cody, Wyoming, August 2023.
4. Heinz, M.G. "Dissecting sensorineural hearing loss towards precision audiology," Biomedical Engineering Seminar Series, University of Rochester, April 2023.
5. Heinz, M.G. "The Diverse Pathologies Underlying Age-Related Hearing Loss," Academy Research Conference (ARC-2022) on Age-Related Hearing and Balance Decline (part of American Academy of Audiology, AAA), St. Louis MO, March 2022.
6. Heinz, M.G., and Parida, S. "Enhanced envelope coding following acoustic trauma degrades speech-in-noise coding," Conference on Sound Perception, Poznan, Poland (virtual), September 2021.

7. Heinz, M.G. “Physiological and behavioral assays of cochlear synaptopathy in chinchillas,” VA National Center for Rehabilitative Auditory Research (NCRAR) Seminar Series, Portland, OR, August 2019.
8. Heinz, M.G. “Relations between neurophysiological, anatomical, and perceptual effects of noise-induced hearing loss,” Otolaryngology and Hearing & Communication Neuroscience Seminar Series, University of Southern California, Los Angeles, CA, May 2019.
9. Parida, S. Heinz, M.G., “Effects of noise-induced hearing loss on speech-in-noise envelope coding: Inferences from single-unit and non-invasive measures in animals”, J. Acoust. Soc. Am. 145, 1716(A), Louisville, May 2019.
10. Viswanathan, V., Bharadwaj, H., Shinn-Cunningham, B., Heinz, M.G., “Evaluating human neural envelope coding as the basis of speech intelligibility in noise”, J. Acoust. Soc. Am. 145, 1717(A), Louisville, May 2019.
11. Heinz, M.G., “Physiological and behavioral assays of cochlear synaptopathy in chinchillas”, International Hearing Loss Conference, Niagara-on-the-Lake, Ontario, Canada, May 2019.
12. Heinz, M.G., “Does synaptopathy differentially impact different nerve-fiber populations?”, Synaptopathy Workshop, Boston University, Dec 2017.
13. Henry, K.S., and Heinz, M.G. “Differential effects of noise trauma and diminished endocochlear potential on neural temporal coding of complex sounds: Implications for speech perception,” J. Acoust. Soc. Am. 139, 2121(A), Salt Lake City, May 2016.
14. Heinz, M.G. “Neural modeling to relate individual differences in physiological and perceptual responses with sensorineural hearing loss,” International Symposium on Auditory and Audiological Research, Nyborg, Denmark, August 2015.
15. Heinz, M.G. “Envelope coding metrics derived from auditory-nerve spike trains: Implications for predicting speech intelligibility with hearing impairment,” Conference on Implantable Auditory Prostheses, Lake Tahoe, CA, July 2015.
16. Heinz, M.G. “Modeling effects of sensorineural hearing loss in auditory-nerve responses,” The Auditory Model Workshop, Oldenburg, Germany, June 2015.
17. Heinz, M.G. “Neurophysiological effects of noise-induced hearing loss,” in Special Session *Sixty-Fifth Anniversary of Noise and Health: Session in Honor of Karl Kryter,* Acoustical Society of America, Pittsburgh, PA, May 2015.
18. Heinz, M.G. and Sayles, M. “Effects of Noise-Induced Hearing Loss on Temporal Coding in the Auditory Nerve and Cochlear Nucleus,” in Special Session *New perspectives on sound exposure and subcortical processing: From environmental effects to damaging sounds,* Association for Research in Otolaryngology, Baltimore, MD, Feb 2015.
19. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” Centre for Applied Hearing Research, Technical University of Denmark, Copenhagen, Denmark, Sept. 2013.
20. Heinz, M.G. “Temporal fine structure: Moore than meets the ear,” *An Introduction to the Psychology of Hearing and Beyond*, St. Johns College, University of Cambridge, England, Sep 2013.
21. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” Ear Institute, University College London, London, England, July 2013.
22. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” Audiology and Deafness Research Group, University of Manchester, Manchester, England, July 2013.
23. Heinz, M.G. “Neural correlates of perceptual TFS deficits with cochlear hearing loss,” Laboratoire de Psychologie de la Perception, École Normale Supérieure, Paris, France, June 2013.
24. Heinz, M.G. “Modeling disrupted tonotopicity of temporal coding following sensorineural hearing loss,” J. Acoust. Soc. Am. 133, 3558(A), Montreal, June 2013.
25. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” MRC Institute of Hearing Research, Nottingham , England, April 2013.

26. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” University of Cambridge Hearing Group, Cambridge, England, Apr 2013.
27. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” Hearing Research Center, Boston University, Boston, MA, Jan 2013.
28. Heinz, M.G. “Effects of noise-induced hearing loss on spatiotemporal coding and tonotopicity in the auditory nerve,” Eaton Peabody Lab, Massachusetts Eye and Ear, Harvard Medical School, Boston, Jan 2013.
29. Heinz, M.G. “Effects of Sensorineural Hearing Loss on Temporal Coding in the Auditory Nerve,” *Ear Day*, Department of Communication Disorders and Sciences, Rush University Medical Center, Chicago, IL, Nov 2012.
30. Heinz, M.G. “Psychological and physiological acoustics: From sound to neurons to perception … to clinical and engineering applications,” J. Acoust. Soc. Am. 132, 1899(A), Kansas City, MO, Oct 2012.
31. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” Ear Club Seminar Series, Department of Psychology, University of California, Berkeley, CA, Oct. 2012.
32. Heinz, M.G. “Effects of sensorineural hearing loss on spatiotemporal coding and tonotopicity in the auditory nerve,” Starkey Hearing Research Center, Berkeley, CA, Oct. 2012.
33. Heinz, M.G. “Physiological effects of inner- and outer-hair-cell dysfunction,” 6th International Meeting on Advances in Audiology, University of Salamanca, Spain, June 2012.
34. Heinz, M.G. “Effects of efferent activation on physiological responses,” 6th International Meeting on Advances in Audiology, University of Salamanca, Spain, June 2012.
35. Heinz, M.G. “Physiological correlates of perceptual TFS deficits with sensorineural hearing loss,” Workshop on New Ideas in Hearing 2012: Hot topics in Audiology, École Normale Supérieure, Paris, France, Apr 2012.
36. Heinz, M.G. “Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss,” Seminars in Hearing and Communication Sciences, University of Washington and Virginia Merrill Bloedel Hearing Research Center, Seattle, WA, Jan 2012.
37. Heinz, M.G. and Swaminathan, J. “Psycho-physiological analyses of the perceptual salience of temporal envelope and fine structure cues for speech in noise,” Conference on Implantable Auditory Prostheses, Asilomar, CA, July 2011.
38. Heinz, M.G. “Effects of sensorineural hearing loss on temporal fine-structure and envelope coding in the auditory nerve,” Workshop on New Ideas in Hearing 2009: Auditory temporal processing in normal and impaired ears, École Normale Supérieure, Dept d’Etudes Cognitives, Paris, France, Dec 2009.
39. Heinz, M.G. “Effects of Sensorineural Hearing Loss on Robust Speech Coding,” Workshop on Speech Perception in Normal and Hearing-Impaired Ears, Beckman Institute, University of Illinois at Urbana-Champaign, Nov 2008.
40. Heinz, M.G. “Auditory Signal Processing: Quantifying envelope and fine-structure coding in auditory-nerve responses to chimaeric speech,” First International Symposium on Audible Acoustics in Medicine and Physiology, Purdue University, Sept 2008.
41. Heinz, M.G., and Swaminathan, J. “Neural cross-correlation metrics to quantify envelope and fine-structure coding in auditory-nerve responses,” J. Acoust. Soc. Am. 123, 3056(A), Paris, France, July 2008.
42. Heinz, M.G. “Integrating physiological and perceptual effects of sensorineural hearing loss,” Keynote Talk, Integrative Neuroscience Program Retreat, Purdue University, Apr 2008.
43. Heinz, M.G. “Quantifying envelope and fine structure coding in auditory-nerve responses to chimaeric speech,” Colloquium Talk, Auditory Sciences Research Group, Dept. of Otolaryngology – Head and Neck Surgery, The Ohio State University Medical Center, Dec 2007.
44. Heinz, M.G., and Young, E.D. “Auditory-nerve rate responses are inconsistent with common hypotheses for the neural correlates of loudness recruitment,” International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA, Aug 2004.

45. Heinz, M.G. “Normal and impaired level encoding in the auditory nerve,” Auditory Perception Group, University of Cambridge, England, Dec, 2002.

46. Heinz, M.G. “Quantifying the effects of the cochlear amplifier on temporal and average-rate information in the auditory nerve,” Conference on Perceptual Consequences of Cochlear Nonlinearity, Hanse Institute for Advanced Study, Delmenhorst, Germany, Aug 2001.

Other conference talks

1. Sivaprakasam, A., Schweinzger, I., Bharadwaj, H., Heinz, M. “Inner Hair Cell Damage and Cochlear Synaptopathy Differentially Impact Neural Envelope Coding of Modulations and Pitch,” presented at the 9th Midwest Auditory Research Conference, Ann Arbor, MI, 2022.

2. Deloche, F., Sivaprakasam, A., Heinz, M. G. (2022) “Characterization of Cochlear Compressive Nonlinearities Using Forward-Masked Compound Action Potentials.” Presented at the 19th International Symposium on Hearing. Lyon, France, 2022.

3. Falero, K., Heinz, M. and Sommer, A. (2022). “An Exploration of Hearing Health Behaviors in University Professors, Staff, and Students.” National Hearing Conservation Association (NHCA), Virtual Annual Convention.

4. Deloche, F., Parida, S., Sivaprakasam, A., and Heinz, M.G. (2022). “Estimation of Cochlear Frequency Selectivity Using a Convolution Model of Forward-Masked Compound Action Potentials,” Assoc. for Res. in Otolaryngology Abstracts, 45, Feb 2022, virtual.

5. Märcher-Rørsted, J., Hjortkjær, J., Encina-Llamas, G., Dau, T., and Heinz, M.G. (2022). “Interactions Between Peripheral and Central Measures of Temporal Coding in a Chinchilla Model of Noise-Induced Cochlear Synaptopathy,” Assoc. for Res. in Otolaryngology Abstracts, 45, Feb 2022, virtual.

6. Viswanathan, V., Shinn-Cunningham, B., and Heinz, M.G. (2022). “Speech Categorization Reveals the Role of Early-Stage Temporal-Coherence Processing in Auditory Scene Analysis,” Assoc. for Res. in Otolaryngology Abstracts, 45, Feb 2022, virtual.

7. Parida, S., and Heinz, M.G. (2021). “Representation of Voice Pitch in Discharge Patterns of Auditory-Nerve Fibers Following Noise-Induced Hearing Loss,” Assoc. for Res. in Otolaryngology Abstracts, 44, PD36.

8. Parida, S., and Heinz, M.G. (2020). “Degradation of speech-in-noise coding in auditory-nerve fibers following cochlear hearing loss: Insights from spectro-temporal and information-theoretic approaches,” Assoc. for Res. in Otolaryngology Abstracts, 43, 676-677.

9. Parida, S., Heinz, M.G. “Evidence for distorted tonotopy following noise-induced hearing loss using speech frequency following responses,” Midwest Auditory Research Conference, Springfield, IL, July 2019.

10. Mai, A., Flesher, B., Dougherty, K., Hagedorn, A., Simpson, J., Heinz, M.G., Bharadwaj, H., “Physiological assays of suprathreshold hearing are consistent with widespread de-afferentation of the cochlea”, J. Acoust. Soc. Am. 145, 1663(A), Louisville, May 2019.

11. Heinz, M.G. “Evaluating the perceptual effects of hidden hearing loss in a chinchilla model of cochlear synaptopathy,” American Speech-Language-Hearing Association Conference, Boston, MA, Nov. 2018.

12. Simpson, J.M. and Heinz, M.G. “Integrative grand rounds: An online design for off-campus students,” American Speech-Language-Hearing Association Conference, Boston, MA, Nov. 2018.

13. Maulden, A. and Heinz, M.G. “Comparison of psychometric and neurometric amplitude-modulation detection thresholds in normal-hearing chinchillas,” Sensorium Conference: An Annual Symposium of Sensory Biology and Ecology, West Lafayette, IN, Nov. 2018.

14. Sayles, M., Walls, M.K., and Heinz, M.G. “Suppression measured from chinchilla auditory-nerve-fiber responses following noise-induced hearing loss: Adaptive-tracking and systems-identification approaches,” 17th International Symposium on Hearing, Groningen, Netherlands, June 2015.

15. Sayles, M., and Heinz, M.G. “Amplitude-modulation detection and discrimination in the chinchilla ventral cochlear nucleus following noise-induced hearing loss,” British Society of Audiology meeting, Keele, England, Sept. 2014.

16. Heinz, M.G. "Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss," Joint Midwest Auditory Research Conference and Midwest Auditory Neuroscience Symposium, St. Louis, MO, July 2014.
17. Léger, A.C., Heinz, M.G., Braida, L.D., Moore, B.C.J. "Assessment of Temporal Processing in the Impaired Auditory System using Interaural Time Difference Sensitivity," British Society of Audiology meeting, Keele, England, Sept. 2013.
18. Kale, S., Micheyl, C., and Heinz, M.G. "Effects of sensorineural hearing loss on temporal coding of harmonic and inharmonic tone complexes in the auditory nerve," 16th International Symposium on Hearing, Cambridge, England, July 2012.
19. Heinz, M.G. and Kale, S. "Temporal fine-structure and envelope coding in auditory-nerve fibers following noise-induced hearing loss," International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA, Aug 2010.
20. Heinz, M.G., Swaminathan, J., Boley, J.D., and Kale, S. "Across-fiber coding of temporal fine-structure: Effects of noise-induced hearing loss on auditory-nerve responses," 15th International Symposium on Hearing, Salamanca, Spain, June 2009.
21. Heinz, M.G. "Spatiotemporal encoding of vowels in noise studied with the responses of individual auditory nerve fibers," 14th International Symposium on Hearing, Cloppenburg, Germany. Aug 2006.
22. Heinz, M.G., Scepanovic, D., Issa, J., Sachs, M.B., and Young, E.D. (2003) "Normal and impaired level encoding: Effects of noise-induced hearing loss on auditory-nerve responses," 13th International Symposium on Hearing, Dourdan, France, Aug 2003.
23. Heinz, M.G., Sachs, M.B., and Young, E.D. "Activity growth rates in auditory-nerve fibers following noise-induced hearing loss," International Hearing Aid Research Conference (IHCON), Lake Tahoe CA, Aug 2002.
24. Heinz, M.G., Carney, L.H., and Colburn, H.S. "Monaural, cross-frequency coincidence detection as a mechanism for decoding the perceptual cues provided by the cochlear amplifier," J. Acoust. Soc. Am. 105, 1023(A), Berlin, Germany, Mar 1999.
25. Heinz, M.G., Formby, C., and Mortimer, K.L. "Effects of rise/fall time on masked detection thresholds and temporal integration for noise band signals," J. Acoust. Soc. Am. 96, 3257-3258(A), Austin, TX, Nov1994.
26. Formby, C., Heinz, M.G., and Luna, C.E. "Prediction of masked detection thresholds for noise signals centered in a gated noise masker," J. Acoust. Soc. Am. 94, 1776(A), Denver, CO, Oct, 1993.

Seminars

1. "Effects of Noise-Induced Hearing Loss on the Neural Coding of Speech," Seminars for Neurotrauma and Diseases, Purdue University, Mar. 2022.
2. "Dissecting sensorineural hearing loss towards precision audiology," HHS Research Day – Career Research Achievement Award Talk, Purdue University, Nov. 2021.
3. "Physiological correlates of degraded temporal fine structure sensitivity with sensorineural hearing loss," Cognitive Psychology Colloquium Series, Purdue University, Nov. 2012.
4. "Insights from chimaeric speech for improving cochlear-implant stimulation strategies," Biomedical Engineering Society, Purdue University, April, 2010.
5. "Effects of sensorineural hearing loss on temporal fine-structure and envelope coding in the auditory nerve," Laboratoire Psychologie de la Perception, École Normale Supérieure, Paris, France, June 2009.
6. "Quantifying temporal envelope and fine structure coding in auditory-nerve responses to chimaeric speech," EcoLunch, Department of Biological Sciences, Purdue University, March, 2008.
7. "Effects of Sensorineural Hearing Loss on Robust Speech Coding," Department of Speech, Language, and Hearing Sciences, Purdue University, December, 2007.
8. "Quantifying envelope and fine structure coding in auditory-nerve responses to chimaeric speech," Ray W. Herrick Labs, Purdue University, November, 2007.

9. "The effects of sensorineural hearing loss on the neural encoding of sound level: Insights for better auditory prostheses and speech recognition systems?" Eta Kappa Nu (International Honor Society for Electrical Engineers), Purdue University, January, 2006.
10. "The effects of sensorineural hearing loss on the encoding of sound level in the auditory nerve," Weldon School of Biomedical Engineering, Purdue University, September, 2005.
11. "The effects of sensorineural hearing loss on the encoding of sound level in the auditory nerve," Purdue University, and others …, Spring 2005.
12. "The effects of sensorineural hearing loss on the encoding of sound level in the auditory nerve," Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, May 2003.
13. "Level encoding in the auditory nerve: The dynamic-range problem and comparisons between normal and impaired activity growth," Center for Hearing Science, Johns Hopkins University, February, 2002.
14. "A general modeling approach for predicting psychophysical performance limits from computational auditory-nerve models," Center for Hearing Science, Johns Hopkins University, December, 1999.
15. "Monaural, cross-frequency coincidence detection as a mechanism for decoding the perceptual cues provided by the cochlear amplifier," Hearing Research Center, Boston University, March, 1999.
16. "Temporal versus rate encoding schemes for auditory discrimination: Optimal decision theory analysis using a computational auditory-nerve model," Northeastern University, July, 1998.
17. "Periodicity versus place for frequency discrimination revisited: Optimal decision theory analysis of a modern computational auditory-nerve model," Eaton Peabody Laboratory, Massachusetts Eye and Ear Infirmary, January, 1998.
18. "The use of computational physiological models for understanding the discrimination abilities of human listeners," Hearing Research Center, Boston University, November, 1997.

Conference abstracts

1. Bharadwaj, H., Kafi, H., Parida, S., and Heinz, M.G. (2024). "Overzealous tail: Distorted tonotopy degrades suprathreshold sound coding in sensorineural hearing loss," Mechanics of Hearing preprints (June 2024).
2. Farhadi, A., Hauser, S., Sivaprakasam, A., and Heinz, M.G. (2024). "Simultaneous Recording of Otoacoustic Emissions and Envelope-Following Responses to Evaluate Efferent Influences on Neural Coding," Mechanics of Hearing preprints (June 2024).
3. Hauser, S., Sivaprakasam, A., Bharadwaj, H., and Heinz, M.G. (2024). "Precision Diagnostics for Complex Sensorineural Hearing Loss," Mechanics of Hearing preprints (June 2024).
4. Farhadi, A., Hauser, S., Sivaprakasam, A., and Heinz, M.G. (2024). "Evaluation of efferent influences on neural coding using preclinical models of sensorineural hearing loss.," The Journal of the Acoustical Society of America, 155, A40.
5. Patra, M., Mukesh, A., and Heinz, M. G. (2024). "Characterizing inner-hair-cell specific dysfunction from spike-train-derived transduction functions using a phenomenological auditory-nerve model," The Journal of the Acoustical Society of America, 155, A34.
6. Alexander, J., Heinz, M., Shader, M., Grama, A., Bartlett, E., and Simpson, J. (2024). Addressing Hearing Health Equity in Indiana Using Precision Audiology. Annual Convention of the Indiana Speech-Language-Hearing Association.
7. Farhadi, A., Patra, M., Sivaprakasam, A., and Heinz, M.G. (2024). "Investigating Potential Sources of Modulation Enhancement in Noise Through Physiologically Recorded and Model Neural Responses," Assoc. for Res. in Otolaryngology Abstracts, S27, p. 19. Feb 2024, poster.
8. Sivaprakasam, A., Bharadwaj, H., and Heinz, M.G. (2024). "Cross-Species Investigations of Place and Time Coding of Pitch Using Envelope-Following Responses," Assoc. for Res. in Otolaryngology Abstracts, S142, p. 93. Feb 2024, poster.

9. Athreya, V.M., Sivaprakasam, A., Ginsberg, H., Bharadwaj, H., and Heinz, M.G. (2024). "Pioneering Cortical Assays of Gap Detection to Explore Temporal Processing in Chinchilla Using a Multi-Channel Mini-EEG Cap," Assoc. for Res. in Otolaryngology Abstracts, SU34, p. 207. Feb 2024, poster.
10. Patra, M., Farhadi, A., Sivaprakasam, A., Axe, D., and Heinz, M.G. (2024). "Refinement of Inner Hair Cell (IHC) Dysfunction in a Phenomenological Auditory Nerve (AN) Model Using Physiological and Single-Unit Recordings Following Selective IHC Dysfunction," Assoc. for Res. in Otolaryngology Abstracts, SU151, p. 283. Feb 2024, poster.
11. Hauser, S., Bharadwaj, H., and Heinz, M. G. (2024). "Contributions to Otoacoustic Emission Amplitudes Beyond Outer Hair Cells: Effects of Sedation and Inner Hair Cell Dysfunction," Assoc. for Res. in Otolaryngology Abstracts, SU175, p. 299. Feb 2024, poster.
12. Viswanathan, V., Heinz, M.G., and Shinn-Cunningham, B. (2024) "Impact of Reduced Spectral Resolution on Temporal-Coherence-Based Source Segregation," Assoc. for Res. in Otolaryngology Abstracts, SU179, p. 301. Feb 2024, poster.
13. Hauser, S., Heinz, M. G., and Bharadwaj, H. (2023). "Cross-species characterization of joint otoacoustic emission profiles in sensorineural hearing loss," The Journal of the Acoustical Society of America, 153, A161. [1st place student award].
14. Patra, M., Sivaprakasam, A., Axe, D., and Heinz, M. G. (2023). "Testing phenomenological auditory-nerve model predictions for selective inner- and outer-hair-cell dysfunction," The Journal of the Acoustical Society of America, 153, A337.
15. Sivaprakasam, A., Athreya, V.M., Ginsberg, H., Bharadwaj, H., and Heinz, M. (2023). "A Chinchilla Mini-EEG Cap Improves Cross-Species Translation for Cortical and Subcortical Evoked Potentials," Assoc. for Res. in Otolaryngology Abstracts, SU188, Feb 2023, poster.
16. Sivaprakasam, A., Schweinzger, I., Bharadwaj, H., and Heinz, M. (2023). "Upper-Harmonic Deficits in Temporal Envelope Coding of Tone Complexes and Amplitude Modulations Differentiate Inner Hair Cell Damage From Synaptopathy," Assoc. for Res. in Otolaryngology Abstracts, SU126, Feb 2023, poster.
17. Viswanathan, V., Bharadwaj, H., Heinz, M., Shinn-Cunningham, B. (2023). "Induced Alpha and Beta Electroencephalographic Rhythms Covary With Single-Trial Speech Intelligibility in Competition," Assoc. for Res. in Otolaryngology Abstracts, SU14, Feb 2023, poster.
18. Deloche, F., Sivaprakasam, A., Heinz, M. (2023). "Effect of Suppressive Masking on the Dynamic Range of Auditory-Nerve Responses: Characterization with Forward-Masked Compound Action Potentials," Assoc. for Res. in Otolaryngology Abstracts, SA21, Feb 2023, poster.
19. Schweinzger, I., Sivaprakasam, A., and Heinz, M.G. (2022). "Differentiating Inner Hair Cell Dysfunction From Cochlear Synaptopathy Using Non-Invasive Measures of Temporal Envelope Coding in Chinchilla," Assoc. for Res. in Otolaryngology Abstracts, 45, Feb 2022, virtual poster.
20. Sivaprakasam, A., Bharadwaj, H., and Heinz, M. (2021) "The Role of Envelope and Temporal Fine Structure in Auditory Neural Coding of Timbre in Normal and Impaired Hearing," Society for Neuroscience Abstracts, P441.06.
21. Deloche, F., and Heinz, M.G. (2021). "Estimation of Cochlear Excitation Patterns Using a Model of Forward-Masked Compound Action Potentials," Assoc. for Res. in Otolaryngology Abstracts, 44, T11.
22. Viswanathan, V., Shinn-Cunningham, B., and Heinz, M.G. (2021). "Effects of Masker Modulation Spectra and Fine Structure on Consonant Confusions," Assoc. for Res. in Otolaryngology Abstracts, 44, T125.
23. Dougherty, K., Ginsberg, H., Mai, A., Parida, S., Simpson, J., Heinz, M.G., Bharadwaj, H. (2019). "Non-Invasive Assays of Cochlear Synaptopathy in Humans and Chinchillas," Assoc. for Res. in Otolaryngology Abstracts, 42, 382-383.
24. Viswanathan, V., Bharadwaj, H., Shinn-Cunningham, B., and Heinz, M.G. (2019). "Neurophysiological Validation of Envelope-based Models of Speech Intelligibility," Assoc. for Res. in Otolaryngology Abstracts, 42, 319.
25. Parida, S., and Heinz, M.G. (2019). "Effects of Noise-Induced Hearing Loss on Speech-In-Noise Envelope Coding," Assoc. for Res. in Otolaryngology Abstracts, 42, 382.

26. Smith, S.S, Chintanpalli, A., Wallace, M.N., Hockley, A., Heinz, M.G., and Sumner, C. J. (2018). "Classifying the neural code of concurrently presented vowels," Society for Neuroscience Abstracts. 766.06.

27. Parida, S., and Heinz, M.G. (2018). "Neurophysiological Evaluation of Speech Masking Release Based on the Envelope Power Spectrum Model," Assoc. for Res. in Otolaryngology Abstracts, 41, 387.

28. Mai, A., Simpson, J.M., Flesher, B. Heinz, M.G., and Bharadwaj, H.M. (2018). "Effects of acoustic overexposure on the human auditory system -- Measurements in a clinical setting," Assoc. for Res. in Otolaryngology Abstracts, 41, 17.

29. Axe, D.R., Muthaiah, V.P.K., and Heinz, M.G. (2018). "Both inner and outer hair-cell dysfunction degrade neural coding of perceptually relevant complex sounds," Assoc. for Res. in Otolaryngology Abstracts, 41, 383.

30. Maulden, A.C., Walls, M.K., Muthaiah, V.P.K., and Heinz, M.G. (2018). "The effects of cochlear synaptopathy on chinchilla amplitude-modulation detection thresholds," Assoc. for Res. in Otolaryngology Abstracts, 41, 254.

31. Smith, S., Chintanpalli, A., Heinz., M.G., and Sumner, C. (2018). "A model of concurrent vowel identification without segregation predicts perceptual errors," Assoc. for Res. in Otolaryngology Abstracts, 41, 127.

32. Muthaiah, V.P.K., Walls, M.K., and Heinz, M.G. (2017). "Effects of cochlear-synaptopathy inducing moderate noise exposure on auditory-nerve-fiber responses in chinchillas," J. Acoust. Soc. Am. 141, 3814(A), Boston, MA.

33. Maulden, A.C., Walls, M.K., and Heinz, M.G. (2017). "Psychometric amplitude-modulation detection thresholds in chinchillas before and after moderate noise exposure," J. Acoust. Soc. Am. 141, 3894(A), Boston, MA.

34. Bharadwaj, H.M., Simpson, J.M., and Heinz, M.G. (2017). "Resource sharing in a collaborative study on cochlear synaptopathy and suprathreshold-hearing deficits," J. Acoust. Soc. Am. 141, 3631(A), Boston, MA.

35. Simpson, J.M. and Heinz, M.G. (2017). "Integrative Audiology Grand Rounds: On online design for off-campus students," American Academy of Audiology Convention, Indianapolis, IN.

36. Maulden, A.C., Walls, M.K., Sayles, M., and Heinz, M.G. (2017). "Comparison of psychometric and neurometric amplitude-modulation detection thresholds in normal-hearing chinchillas," Assoc. for Res. in Otolaryngology Abstracts, 40, 118.

37. Parida, S., and Heinz, M.G. (2017). "Neurophysiological evaluation of the speech-based envelope power spectrum model," Assoc. for Res. in Otolaryngology Abstracts, 40, 336.

38. Axe, D.R., and Heinz, M.G. (2017). "Changes in temporal coding of frequency modulation following inner-hair-cell impairment," Assoc. for Res. in Otolaryngology Abstracts, 40, 13.

39. Prendergast, G., Munro, K., Kluk, K., Léger, A., Hall, D.A., Heinz, M.G., Plack, C.J. (2017). "Behavioral measures of hidden hearing loss in audiometrically normal young listeners," Assoc. for Res. in Otolaryngology Abstracts, 40, 424.

40. Hegland, E. Heinz, M.G., and Strickland, E. (2017). "Modeling suppression, gain, and age-related effects using an auditory-nerve model," Assoc. for Res. in Otolaryngology Abstracts, 40, 13.

41. Sayles, M., Fontaine, B., and Heinz, M.G. (2016). "Spectro-temporal tuning of suppressive nonlinearities measured from chinchilla auditory-nerve-fiber responses following noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts, 39, 27.

42. Prendergast, G., Guest, H., Hall, D., Kluk-de Kort, K. Léger, A., Hickox, A., Heinz, M. Munro, K., Plack, C. (2016). "An investigation of hidden hearing loss in young adults with normal hearing," Assoc. for Res. in Otolaryngology Abstracts, 39, 202.

43. Sayles, M., Henry, K.S., and Heinz, M.G. (2015). "Spectro-temporal dynamics of excitatory, suppressive, and inhibitory influences in the auditory nerve and ventral cochlear nucleus following sensorineural hearing loss," Society for Neuroscience Abstracts, 231.15.

44. Axe, D., and Heinz, M.G. (2015). "The Effects of Carboplatin Induced Ototoxicity on Temporal Coding in the Auditory Nerve," Assoc. for Res. in Otolaryngology Abstracts, 38, 76-77.

45. Sayles, M., and Heinz, M.G. (2015). "Effects of Noise-Induced Hearing Loss on Coding of Temporal Fine Structure and Envelope in the Chinchilla Ventral Cochlear Nucleus," Assoc. for Res. in Otolaryngology Abstracts, 38, 332.

46. Leger, A., Heinz, M.G., Braida, L.D., and Moore, B.C.J. (2015). "Sensitivity to interaural time differences in envelope and fine structure, individually and in combination," Assoc. for Res. in Otolaryngology Abstracts, 38, 444.

47. Hickox, A.E., Carbajal, S., Walls, M.K., Maulden, A.C., Verble, K.M., and Heinz, M.G. (2015). "Comparing Behavioral and Physiological Measures in Chinchillas Before and After Moderate Noise Exposure," Assoc. for Res. in Otolaryngology Abstracts, 38, 447.

48. Sayles, M., and Heinz, M.G. (2014). "Neurometric amplitude-modulation detection thresholds measured in the chinchilla ventral cochlear nucleus following sensorineural hearing loss," J. Acoust. Soc. Am. 135, 2412(A), Providence, RI.

49. Hickox, A.E., and Heinz, M.G. (2014). "Auditory nerve coding of concurrent fundamental frequencies following noise exposure," Assoc. for Res. in Otolaryngology Abstracts, 37, 162.

50. Henry, K.S., Hickox, A.E., Sayles, M., and Heinz, M.G. (2014). "Effects of furosemide-induced metabolic hearing loss on temporal coding of fine structure and envelope in auditory-nerve fibers," Assoc. for Res. in Otolaryngology Abstracts, 37, 166.

51. Remick, T., Axe, D.R., and Heinz, M.G. (2014). "The effect of carboplatin induced ototoxic hearing loss on evoked potentials in chinchillas," Assoc. for Res. in Otolaryngology Abstracts, 37, 457.

52. Sayles, M., and Heinz, M.G. (2014). "Monaural cross-frequency coincidence detection in noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts, 37, 466.

53. Henry, K.S., Kale, S., and Heinz, M.G. (2013). "Noise-induced hearing loss increases sensitivity to fast temporal modulations in the auditory nerve: evidence from Wiener kernel analysis," Assoc. for Res. in Otolaryngology Abstracts, 36, 441-442.

54. Smalt, C., Heinz, M.G., and Strickland, E.A. (2013). "Modeling the time-varying and level dependent effects of the olivocochlear reflex in auditory nerve responses," Assoc. for Res. in Otolaryngology Abstracts, 36, 536.

55. Moon, I.J., Won, J.H., Heinz, M.G., and Rubinstein, J. (2013). "Psychophysiological analyses of the effects of phase information on perceptual outcomes for normal-hearing listeners," Assoc. for Res. in Otolaryngology Abstracts, 36, 242.

56. Boley, J.D., and Heinz, M.G. (2012). "Impaired spatiotemporal coding of vowels may be exacerbated by noise," International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA.

57. Swaminathan, J., and Heinz, M.G. (2012). "Predicted effects of sensorineural hearing loss on across-fiber coding of temporal fine structure in the auditory nerve," International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA.

58. Axe, D., and Heinz, M.G. (2012). "Modeling the effects of sensorineural hearing loss on temporal coding in the auditory nerve," J. Acoust. Soc. Am. 131, 3518(A), Hong Kong.

59. Henry, K.S., Kale, S., and Heinz, M.G. (2012). "Degraded Temporal Coding in Auditory-Nerve Fibers Following Noise-Induced Hearing Loss: A Wiener-Kernel Analysis," Assoc. for Res. in Otolaryngology Abstracts, 35, 364.

60. Kale, S., and Heinz, M.G. (2012). "Temporal fine structure coding at high frequencies following noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts, 35, 364-365.

61. Chintanpalli, A., and Heinz, M.G. (2012). "Predicted effects of hearing loss and sound level on pitch coding in the auditory nerve for reverberant conditions," Assoc. for Res. in Otolaryngology Abstracts, 35, 364.

62. Kale, S., and Heinz, M.G. (2011). "Filter characteristics derived from auditory-nerve fiber responses following noise-induced hearing loss," J. Acoust. Soc. Am. 129, 2654(A).

63. Chintanpalli, A., Jennings, S.G., Heinz, M.G., and Strickland, E.A. (2011). "Modeling the anti-masking effects of the olivocochlear reflex in auditory-nerve responses to tones in noise," J. Acoust. Soc. Am. 129, 2592(A).

64. Henry, K.S., Kale, S., Scheidt, R.E., and Heinz, M.G. (2011). "Auditory brainstem responses predict auditory nerve single-unit thresholds and frequency selectivity following noise induced hearing loss in chinchillas," Assoc. for Res. in Otolaryngology Abstracts, 34, 138.

65. Bidelman, G.M., and Heinz, M.G. (2011). "Auditory-nerve responses predict pitch attributes related to musical consonance and dissonance for normal and impaired hearing," Assoc. for Res. in Otolaryngology Abstracts, 34, 224.

66. Kale, S., and Heinz, M.G. (2011). "Temporal coding of harmonic and inharmonic tone complexes in auditory nerve fibers following noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts, 34, 224.

67. Chintanpalli, A., and Heinz, M.G. (2011). "Predicted effects of reverberation on pitch and spectral coding in the auditory nerve," Assoc. for Res. in Otolaryngology Abstracts, 34, 223-224.

68. Boley, J., and Heinz, M.G. (2010). "Predicted effects of amplification on spatiotemporal coding of vowels in noise," International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA.

69. Chintanpalli, A., and Heinz, M.G. (2010). "The use of confusion patterns to evaluate the neural basis for concurrent vowel identification," J. Acoust. Soc. Am. 127, 1991(A).

70. Kale, S., Boley, J.D., Swaminathan, J., and Heinz, M.G. (2010). "Within and across fiber temporal fine structure coding in auditory nerve following noise induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts, 33, 258.

71. Swaminathan, J., and Heinz, M.G. (2010). "Predicted effects of sensorineural hearing loss on across-fiber envelope coding in the auditory nerve," Assoc. for Res. in Otolaryngology Abstracts, 33, 258.

72. Swaminathan, J., and Heinz, M.G. (2009). "Evaluating the neural bases for robust speech perception," Advances and Perspectives in Auditory Neurophysiology, Chicago..

73. Swaminathan, J., and Heinz, M.G. (2008). "Neural coding of envelope and fine structure in noise degraded speech," J. Acoust. Soc. Am. 123, 3720(A), Paris, France. *(Winner, Best Student Paper Award in Psychological and Physiological Acoustics, 2nd prize).*

74. Jennings, S., Heinz, M., and Strickland, E. (2008). "Exploring the psychophysical temporal effect in masking using a model of the auditory periphery," J. Acoust. Soc. Am. 123, 3860(A), Paris, France.

75. Kale, S., and Heinz, M.G. (2008). "Envelope coding in auditory-nerve fibers following noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts 31, 77.

76. Chintanpalli, A., and Heinz, M.G. (2008). "Modeling the effects of selective hair-cell damage on concurrent vowel identification," Assoc. for Res. in Otolaryngology Abstracts 31, 146.

77. Swaminathan, J., and Heinz, M.G. (2007). "Quantifying envelope coding in auditory-nerve responses to chimaeric stimuli," Conference on Implantable Auditory Prostheses, Lake Tahoe, CA.

78. Holmen, A.L., and Heinz, M.G. (2006). "Noninvasive assays for determining auditory efferent reflex strength," BMES Conference, Chicago, IL.

79. Heinz, M.G. (2005). "Spectral coding based on cross-frequency coincidence detection of auditory-nerve responses," Assoc. for Res. in Otolaryngology Abstracts 28, 27.

80. Young, E.D., Ji, T., Bruce, I., and Heinz, M.G. (2004). "Information about speech segments in the normal and impaired auditory nerve," International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA.

81. Heinz, M.G., Issa, J.B., and Young, E.D. (2004). "Level coding in the auditory nerve following noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts 27, 324.

82. Young, E.D., Heinz, M.G., Bandyopadhyay, S., Ji, T., and Bruce, I. (2004). "What about the consonants?" Assoc. for Res. in Otolaryngology Abstracts 27, 324.

83. Heinz, M.G., Sachs, M.B., and Young, E.D. (2003). "Activity growth rates in auditory-nerve fibers following noise-induced hearing loss," Assoc. for Res. in Otolaryngology Abstracts 26, 46-47.

84. Heinz, M.G., Kim, D., Sachs, M.B. and Young, E.D. (2002). "A baseline characterization of activity growth in auditory-nerve fibers of normal-hearing cats," Assoc. for Res. in Otolaryngology Abstracts 25, 87.

85. Carney, L.H., Evilsizer, M.E., Gilkey, R.H., Heinz, M.G., and Colburn, H.S. (2001). "Modelling diotic and dichotic detection of tones in reproducible noise," Assoc. for Res. in Otolaryngology Abstracts 24, 86-87.

86. Heinz, M.G., Colburn, H.S., and Carney, L.H. (2000). "Quantifying effects of the cochlear amplifier on temporal and average-rate information in the auditory nerve," International Hearing Aid Research Conference (IHCON), Lake Tahoe, CA.

87. Heinz, M.G., Colburn, H.S., and Carney, L.H. (2000). "Quantifying the effects of noise maskers on signal information in auditory-nerve responses," Assoc. for Res. in Otolaryngology Abstracts 23, 276.

88. Heinz, M.G., Formby, C., Sherlock, L.P., Ronson, B. and Carney, L.H. (2000). "Strategies for detection of temporal- and spectral-profile cues," Assoc. for Res. in Otolaryngology Abstracts 23, 106.

89. Zhang, X., Heinz, M.G., and Carney, L.H. (1999). "Nonlinear compression in an auditory-nerve model," EMBS-BMES Joint Conference, October, Atlanta, GA.

90. Heinz, M.G., Carney, L.H., and Colburn. H.S. (1999). "Performance limits for frequency and intensity discrimination based on a computational auditory-nerve model," Assoc. for Res. in Otolaryngology Abstracts 22, 212.

91. Carney, L.H., Heinz, M.G., Colburn, H.S. (1999). "Spatiotemporal coding of sound level: Quantifying the information provided by level-dependent phase cues," Assoc. for Res. in Otolaryngology Abstracts 22, 212.

92. Formby, C., Rutledge, J.C., Heinz, M.G., Sherlock, L.P., and Aleksandrovsky, I.V. (1998). "A descriptive model of under- and over-shoot patterns in the temporal masking function of a narrow-band noise," J. Acoust. Soc. Am. 103, 2811(A).

93. Formby, C., Heinz, M.G., and Aleksandrovsky, I.V. (1998). "Detection of an increment in a single-frequency component of a noise background as a function of increment frequency and duration," J. Acoust. Soc. Am. 103, 2812(A).

94. Heinz, M.G., and Carney, L.H. (1998). "Periodicity versus place for frequency discrimination revisited: Optimal decision theory analysis of a modern computational auditory-nerve model," Assoc. for Res. in Otolaryngology Abstracts 21, 137.

95. Formby, C., Heinz, M.G., Ferguson, S.H., and Sherlock, L.P. (1998). "Temporal over- and under-shoot effects accentuate temporal edges at onset and offset of a narrowband masker," Assoc. for Res. in Otolaryngology Abstracts 21, 172.

96. Formby, C., Ferguson, S.H., and Heinz, M.G. (1997). "Auditory temporal microstructure: Evidence of under- and over-shoot at onset and offset of a narrowband noise masker measured in an off-frequency masked detection task," J. Acoust. Soc. Am. 102, 3161(A).

97. Heinz, M.G. and Carney, L.H. (1997). "A psychophysiological multi-cue model for the detection of time- and band-limited increments and decrements in noise," Assoc. for Res. in Otolaryngology 20, 229.

98. Formby, C., Heinz, M.G., Hargus, S.E., Forrest, T.G., and Zeiders, J.W. (1996). "Temporal integration and acuity time constants estimated from detection of brief band-limited increments within a broadband noise signal," Assoc. for Res. in Otolaryngology Abstracts 19, 209.

99. Formby, C., Heinz, M.G., Hargus, S.E., Zeiders, J.W. (1995). "Detection and temporal integration of brief band-limited increments and decrements within a broadband noise signal," J. Acoust. Soc. Am. 98, 2907(A).

100. Formby, C., Sherlock, L.P., Forrest, T.G., Goldstein, Jr., M.H., and Heinz, M.G. (1995). "Importance of the signal-to-noise ratio in measurement and modeling of temporal acuity for normal and hearing-impaired listeners: Motivation for better noise suppression schemes in hearing aids," Hearing Aid Research and Development Conference, Bethesda, MD.

101. Formby, C., Heinz, M.G., and Malhotra, R. (1995). "Extension of a multi-cue detection model to predict masked detection thresholds for very brief noise band signals," Assoc. for Res. in Otolaryngology 18, 58.

102. Li, S., Formby, C., and Heinz, M.G. (1994). "Integration of brief noise components represented in the range of the speech signal," Proceedings of the 14th Annual Speech Research Symposium, Baltimore, MD, 203-205.

103. Heinz, M.G., Goldstein, Jr., M.H., Formby, C, and Forrest, T.G. (1994). "Temporal gap detection thresholds in sinusoidal markers simulated with a multi-channel, multi-resolution cochlear model," J. Acoust. Soc. Am. 95, 2941(A).

104. Formby, C., Heinz, M.G., Luna, C.E., and Shaheen, M.K. (1994). "A multi-cue detection model for predicting masked detection thresholds for noise band signals," Assoc. for Res. in Otolaryngology 17, 117.

105. Formby, C., Heinz, M.G., Luna, C.E., and Shaheen, M.K. (1993). "Temporal integration of narrowband noise signals," Assoc. for Res. in Otolaryngology Abstracts 16, 152.

106. Formby, C., Heinz, M.G., Luna, C.E., and Elbert, S.C. (1992). "Temporal integration of noise band signals measured in a profile analysis task," J. Acoust. Soc. Am. 92, 2317(A).

RECOGNITION

Awards, Honors

Career Research Achievement Award, College of Health and Human Sciences, Purdue Univ., 2021
Purdue Online Excellence in Course Design and Teaching Award (w/ J. Simpson), 2020
Fellow, Academic Leadership Program, Big 10 Academic Alliance 2019-2020
University Faculty Scholar, Purdue University 2016-2021
Ruth and M.D. Steer Outstanding Teacher Award in Audiology, 2016, 2017
Early Career Research Achievement Award, College of Health and Human Sciences, Purdue Univ., 2013
Fellow, Acoustical Society of America, "for contributions to understanding the relation between physiology and psychophysics in hearing," 2010
Seed for Success Award for Excellence in Research, Purdue University, 2010, 2015, 2017
Judy and David Wachs Grant in Auditory Science, National Organization for Hearing Research, 2009
Bronze Acorn Seed for Success Award for Excellence in Research, Purdue University, 2008
Invited participant with travel award, 4th Annual Research Conference: "Lessons for Success: Developing the Emerging Scientist", American Speech-Language-Hearing Association (ASHA), May 2006.
Independence Blue Cross Grant in Auditory Science, National Organization for Hearing Research, 2004
Graduated magna cum laude, Brown University, May 1992
Sigma Xi, elected in May 1992
Tau Beta Pi, elected in May 1991

Institutional

"How noise affects perception," Purdue Vice President for Research Annual Report, 2012.
"Helping deaf people hear amidst the noise," Purdue Alumnus Magazine, July 2012.
Feature article on laboratory's research in Purdue Industrial Partnership (PIP) Newsletter, 2007.

EDUCATIONAL ACTIVITIES

Teaching (at Purdue University)

SLHS 302 *Hearing Science* – Developed as new course. Taught in Sp15, Sp16, Sp18.
SLHS 444 *Introduction to Research in Communication Sciences and Disorders* – Taught in Sp07, Sp22,23
SLHS 504 *The Auditory Periphery* – Taught in Fa06-10, Fa13-23.
SLHS 605 *Signal Processing for Hearing and Speech Sciences* – Developed as new course. Taught in Sp06, Sp09, Sp12, Sp14.
SLHS 619 *Grant Writing*, Fa 2024.
SLHS 619 *Online Integrative Audiology Grand Rounds.* Co-Developed and taught in Sp&Fa (2016 –2019).
BME 511/595 *Biomedical Signal Processing* – Developed new course. Taught in Sp07-08, Fa10,12,14,16,18, 20, Sp23.
BME 595-Lab *Biomedical Signal Processing - DSP Lab* – Developed as new course. Taught in Fa08.
BME 695 / SLHS 619 *Special Lectures in Neuroscience: Auditory Neuroscience* - co-taught with Hari Bharadwaj and Mark Sayles in Sp18.
BIO 695S / SLHS 658S *Special Lectures in Neuroscience: Auditory Neuroscience* - co-taught with Elizabeth Strickland in Sp08.

BME 695M *Computational Models of Hearing Impairment* – 1 credit critical literature assessment, taught in Fa06.

Guest Lecturer – (BIO 562 *Neural Systems and Behavior*, 2006-2017; BME 695 *Measurement*, 2017; SLHS 115 *Introduction to Communication Disorders*, 2007-2009, 2011-2012; SLHS 215 *Exploring Audiology and Hearing Science*, 2009-2018; SLHS 304 *Anatomy and Physiology of the Speech and Hearing Mechanism*, 2012; ECE 694 *Graduate Seminar Series*, 2009; ECE 537 [Univ. Illinois Urbana-Champaign] *Fundamentals of Speech Processing*, 2008).

Independent Studies: ~1-2 per year from 2007 – present.

HHMI Faculty Learning Community, 2011 – 2012.

Teaching Incentive Grant, College of Liberal Arts, Purdue University, 2009

HORIZON'S Faculty Mentoring Program for first-year undergraduates, GS199 (2010-2012, 2015)

Engineering Projects in Community Service (EPICS) – Faculty Advisor for Church Induction Hearing Loop System, SLHS 585, Fall 2012.

Mentoring, postdoctoral fellows

Kenneth S. Henry	2010 – 2013	SLHS (Assoc. Prof, Univ. Rochester)
Mark Sayles [Fulbright Visiting Scholar]	2013 – 2014	SLHS (Clinical Res. Medical Dir., Amgen)
Ann E. Hickox	2013 – 2015	SLHS (Assoc. Dir. Regul. Affairs, Akouos)
Vijaya Prakash Krishnan Muthaiah	2016 – 2018	SLHS (Asst. Prof, SUNY, Univ. of Buffalo)
Ivy Schweinzger	2019 – 2021	SLHS (St Jude's Hospital)
François Deloche [FPA Fellow]	2020 – 2022	SLHS (Ghent University, Belgium)
Afagh Farhadi	2023 – present	SLHS
Adarsh Mukesh	2024 – present	SLHS

Mentoring, graduate students

Jayaganesh Swaminathan	Ph.D.	2007 – 2010	SLHS (Sen. Hear. Sci., Eargo; Clin. Res. Asst. Prof., Univ. of the Pacific)
Sushrut Kale	Ph.D.	2006 – 2011	BME (Marketing Mgr., GSK Pharma)
Ananthakrishna Chintanpalli	Ph.D.	2006 – 2011	BME (Prof, VIT Vellore, India)
Jonathan Boley	Ph.D.	2007 – 2013	BME (Audio Engin. Project Mgr., Apple)
Maria Sandra Carbajal de Nava	M.S.	2012 – 2015	Neuroscience (PULSe)
David Axe	Ph.D.	2011 – 2017	BME (Engin. Tech. Writer, MathWorks)
Satyabrata Parida	Ph.D.	2015 – 2021	BME (post-doc, OHSU)
Vibha Viswanathan	Ph.D.	2017 – 2021	BME (ResAsst Prof, Carnegie Mellon Univ)
Hannah Ginsberg	M.S.	2019 – 2021	BME
Caitlin Heffner	M.S.	2019 – 2021	BME
Andrew Sivaprakasam	MD/PhD	2020 – present	BME (co-mentor with Hari Bharadwaj)
Luis Fernando Aguilera de Alba	PhD	2021 – present	BME
Samantha Hauser	PhD	2021 – present	SLHS (co-mentor with Hari Bharadwaj)
Madhurima Patra	PhD	2022 – present	BME
Arezou Rokhforouz	PhD	2025 – present	SLHS
Prasad Darveshi	MS	2025 – present	Computer and Information Technology

Mentoring, visiting graduate students

Christoph Scheidiger	Ph.D.	2015	Technical University of Denmark
Suyash Joshi	Ph.D.	2016	Technical University of Denmark
Jonatan Märcher-Rørsted	Ph.D.	2021	Technical University of Denmark

Mentoring, thesis committees

Skyler Jennings	M.S.	2007	SLHS
Ellen Taylor	M.S.	2007	BME
Joseph Santos	M.S.	2008	BME
Lata Krishnan	Ph.D.	2008	SLHS
Feipeng Li	Ph.D.	2009	ECE (Univ. Illinois Urbana-Champaign)
Andrea Campero Battisti	Ph.D.	2009	BIOL
Javier Gonzalez Castillo	Ph.D.	2009	BME

Marine Ardoint (external jury)	Ph.D.	2009	Cognitive Studies, École Normale Supérieure (Paris, France)
Skyler Jennings	Ph.D.	2011	SLHS
Gavin Bidelman	Ph.D.	2011	SLHS
Andrew Marshall	Ph.D.	2011	ME
Dan Aguiar	Ph.D.	2012	ECE
Megan Gall	Ph.D.	2012	BIOL
Christopher Smalt	Ph.D.	2012	ECE
Yamini Venkataraman	Ph.D.	2013	BME
Oliver Regele	M.S.	2013	BME
Minseok Kwon	Ph.D.	2014	ECE
Elin Roverud	Ph.D.	2014	SLHS
Ching-Chih Wu	Ph.D.	2014	ECE
Heui Chang Lee	Ph.D.	2016	BME
Christopher Soverns	M.S.	2016	BME
Jesyin Lai	Ph.D.	2016	Neuroscience (PULSe)
Erica Hegland	Ph.D.	2017	SLHS
Varsha Rallapalli	Ph.D.	2017	SLHS
Ryan Verner	Ph.D.	2017	BME
Nihaad Parouthy (external jury)	Ph.D.	2017	Neuroscience, École Normale Supérieure (Paris, France)
Katie Scott	Ph.D.	2018	Neuroscience (PULSe)
Dan Pederson	Ph.D.	2018	BME
Caitlin Swanberg	M.S.	2020	BME
Andres Llico Gallardo	Ph.D.	2021	BME
Emily Han	Ph.D.	2021	BIO
Orlando Hoilett	Ph.D.	2021	BME
William Salloom	Ph.D.	2022	Neuroscience (PULSe)
Matthew Thompson	Ph.D.	2022	BME
Jane Burton	Ph.D.	2022	Neuroscience (Vanderbilt University)
Agudemu Borjigin	Ph.D.	2022	BME
Joseph Fernandez	Ph.D.	2022	BME
Rav Singh	MD/Ph.D.	2022	BME
Megan Lipton	Ph.D. (current)		Neuroscience (PULSe)
Varsha Mysore Athreya	Ph.D. (current)		SLHS (co-mentor with Hari Bharadwaj)
Homeira Kafi	Ph.D. (current)		BME
Sam Senneka	Ph.D. (current)		BME

Mentoring, AuD students – research project

Rebecca Benjamin	2006	committee
Kyle Acker	2006 – 2007	committee
Kimberly Chamberlain	2007 – 2009	chair
Jennifer Slanker	2007 – 2009	committee
Megan Lyons	2007 – 2009	committee
Katie Masterson	2010 – 2011	committee
Taylor Remick	2012 – 2014	chair
Casey Adkins	2013 – 2014	committee
Kate Geisen	2013 – 2014	committee
Katarina Falero	2021 – 2022	co-chair
Elizabeth Jensen	2024 - 2025	chair
Maggie Ziko	2024 - 2025	chair
Isabella Huddleston	2025 – present	chair
Annika Schenkel	2025 – present	chair
Gabbie Engelman	2025 – present	chair

Supervision, undergraduate research

Angela Holmen	Summer 2006 (REU)	BME (University of Dayton)

Yi (Gary) Hou	Fall 2007	BME
Chong Li	2008 – 2009	ECE
Ryan Scheidt	2009 – 2010 (SURF 2009)	ECE
Ziwei Zhong	2011 – 2012	BME
Sandra Snyder	2011 – 2014	BME (Sen Prod Dev Eng, Zimmer Biomet)
Alexa Malaspino	2011 – 2015	BME (Sen. Mako Prod. Specialist, Stryker)
Amanda Maulden	2013 – 2016	ANSC (Animal Science)
Kelton Verble	2013 – 2016	BIOL
Lucia Corvalan	2015	SLHS
Shannon Doolittle	2015 – 2016	SLHS
Taylor Springer	2016	ANSC
Rose Reyling	2016 – 2017	SLHS
Carissa Baughman Anderson	2018	BIO
Hannah Ginsberg	2018 – 2019 (SURF 2018)	BME
Amy Clark	2018 – 2020	ANSC
Yuhan (Hannah) Chua	2019 – 2020	SLHS
Luis Fernando Aguilera de Alba	Summer 2020 (SURF)	BME (Arizona State University)
James Bundy	2020 – 2023	BIO
Sarthak Mangla	2022 – present	CS

ORGANIZATIONAL ACTIVITIES

National

Member, AUD Study Section, National Institutes of Health, 2024 – present.
Member, Special Topics in Hearing and Balance Science committee, American Speech-Language-Hearing Association (ASHA) conference, 2017.
Co-Organizer/Co-Chair (with Shigeto Furukawa), Special Session on *Perspectives of Research in Overlooked Hearing Problems*, Joint meeting of the Acoustical Society of America and the Acoustical Society of Japan, Honolulu, HI, Nov 2016.
Member, ASA College of Fellows Steering Committee, Acoustical Society of America (2015-2018).
Member, Hartmann Prize in Auditory Neuroscience Committee, Acoustical Society America (2015-2018).
Member, Search Committee for Editor of *Acoustics Today*, Acoustical Society of America (2013).
Member, Scientific Advisory Committee, 2013 International Congress on Acoustics meeting in Montreal.
Technical Program Organizing Meeting (TPOM) Rep for Psychological and Physiological Acoustics, Montreal, Feb 15-16, 2013, Acoustical Society of America, 2013 International Congress on Acoustics.
Co-Organizer/Co-Chair (with Torsten Dau), Special Session on *Computational Modeling of Sensorineural Hearing Loss: Models and Applications*, International Congress on Acoustics (joint with ASA), Montreal, June 2013.
Chair, Hartmann Prize in Auditory Neuroscience Committee, Acoustical Society of America (2012-2013).
Chair, Technical Committee on Psychological and Physiological Acoustics, Acoustical Society of America (2011-2014).
Member, Technical Committee on Psychological and Physiological Acoustics, Acoustical Society of America (2005-2008).

Institutional, SLHS

Associate Head for Research, 2023 – present
Academic Faculty Search Committee in SLHS, 2023-2024.
Chair, Academic Faculty Search Committee in Hearing Science, 2022-2023.
Diversity, Equity, and Inclusion Committee, 2021 – 2023.
Advisory Council to the Department, 2011-2013 ; 2015-present.
Audiology Clinical Faculty Search Committee, 2022.
Graduate Committee and PhD Admissions, 2021 – 2022.
Au.D. Yield Committee, 2021 – 2022.
Head Review Committee, 2021
Workload Equity Strategy Committee, 2019 – 2020.
Head Search Committee, 2018-2019.

Au.D. Curriculum & Standards Committee, 2005-2019 (Chair: 2012-2019; major curriculum revision 2013).
Graduate Committee: Au.D. Admissions, 2013-2015.
Co-Chair, Academic Faculty Search Committee, 2013-2014.
Au.D. Written Gateway Committee, 2006-present (Chair: Fall 2012).
Awards Committee, 2012 (Fall).
Primary Committee, 2011-present.
Graduate Committee, 2010-2012.
Head Search Committee, 2011.
Liaison between research faculty and architects/HHS new-building committee, 2011-2012.
New-Building Committee, 2009-2011.
Scholarship and Awards Committee, 2007-2010.
Brown Bag Seminar Committee co-chair, 2006-2007.
General Curricular Issues/Undergraduate Curriculum Committee, 2005-2006.

Institutional, BME

Director of Graduate Programs, 2019-2023.
Chair, Graduate Committee, 2017-2023 (member 2015-2017, 2023 – present)
Chair, Instrumentation Curriculum and Research Area, 2016-2017.
Awards Committee, 2014-2015.
PhD Qualifying Procedures (PQP) Committee, 2010-2014 (Chair 2012-2014).
Graduate Admission Committee, 2005-2008.
Co-led "Workshop on Critical Analysis of Literature" for new PhD students, 2008.

Interdisciplinary

Director, Accessible Precision Audiology Research Center (APARC), 2024 – present.
Christine M. Ladisch Faculty Leadership Award Selection Committee, College of HHS, 2021
Faculty Advisor to Auditory Neuroscience at Purdue (ANAP) student group, 2019 – present.
Member, Leadership Team, Purdue Institute for Integrative Neuroscience (PIIN), 2019 – present.
Dean's Advisory Committee on HHS Signature Areas, 2019.
Co-Director (w/ D. Fekete; E. Bartlett as of 8/22), Interdisciplinary Training Program in Auditory Neuroscience (TPAN), 2018 – present. www.purdue.edu/TPAN.
Search Committee for Director, Integrative Neurosciences Pillar of Excellence, 2015.
Founding Organizer, Seminars in Hearing Research at Purdue, 2012-2018.
Student exposure to outside speakers in Seminars in Hearing Research at Purdue University, Small Grant from the Association for Research in Otolaryngology, 4/1/2016 – 5/30/2018, $1000 TDC, PI.
Faculty member of Purdue Hearing and Acoustics in Science and Engineering (PHASE) Group.
Faculty member of Integrative Neuroscience PhD Program (PULSe).
Faculty member of Computational Life Sciences (CLS) Program.
Search Committee for Faculty Position in Neuroengineering/Systems Neurophysiology between Biology and Biomedical Engineering Departments, Purdue University, Fall/Spring 2005-2006.
Organizing committee for the Purdue Hearing and Acoustics in Science and Engineering (PHASE) initial workshop "Acoustics: the Wave of the Future!" 2006.

Consultantships

Steering Committee Member for Programme Grant: *Understanding the Consequences of Recreational Noise Exposure*, from the Medical Research Council (MRC), 2/1/2021 – present (PI: Prof. Chris Plack, University of Manchester, UK).
Consulting Investigator for Programme Grant: *The physiological bases and perceptual consequences of 'hidden' noise-induced hearing loss*, from the Medical Research Council (MRC), 2/1/2014 – 1/31/2019 (PI: Prof. Chris Plack, University of Manchester, UK).
Scientific Advisory Board member for Programme Research Grant *HEARFIN: Hearing the fine structure of sounds*, from Agence Nationale de la Recherche (ANR), 9/1/11-8/31/14 (PI: Prof. Christian Lorenzi, Ecole Normale Supérieure, Paris, France).

Editorial activities

Associate Editor, *Journal of the Association for Research in Otolaryngology*, 2016 – 2024.

Review of manuscripts

Acta Acustica united with Acustica
Annals of Biomedical Engineering
Current Biology
Ear and Hearing
eLife
Hearing Research
IEEE Transactions on Biomedical Engineering
IEEE Transactions on Audio, Speech and Language Processing
Journal of Neurophysiology
Journal of Speech, Language, and Hearing Research
Journal of the Acoustical Society of America
Journal of the Association for Research in Otolaryngology
Nature Communications
Neuroscience
Otology and Neurology
Proceedings of the National Academy of Sciences (PNAS)
PLOS Computational Biology
Speech Communication

Review of grants

Action on Hearing Loss (UK)
Agir Pour L'audition (France)
Alaska – IDeA Network of Biomedical Research Excellence
Austrian Science Fund (FWF)
Department of Defense – CDMRP
European Research Council
French National Research Agency (ANR)
Fondation Pour l'Audition (FPA; France)
Hearing Health Foundation
Maryland Industrial Partnerships Program
Medical Research Council (UK)
National Institutes of Health
National Science Foundation
Natural Sciences and Engineering Research Council of Canada
Netherlands Organization for Scientific Research (NWO)
Royal National Institute for Deaf People

Professional societies

Acoustical Society of America (1993 - present)
Association for Research in Otolaryngology (1996 - present)
Society for Neuroscience (2012 – present)

EDUCATIONAL OUTREACH

1. Heinz, M.G., Bharadwaj, H., and Simpson, J. "Difficulties Hearing in Noise? The Potential of Precision Auditory Neuroscience to Help" Talk to President's Council Back-to-Class Annual Weekend (virtual), Purdue University, West Lafayette IN, Oct 2020.
2. Heinz, M.G. "How do we hear? And what can go wrong?" Talk presented to senior group at First United Methodist Church, West Lafayette IN, Aug 2015.
3. Heinz, M.G. "How do we hear?" Talk presented to 2nd and 3rd grade classes (Ms. Scanlon and Mrs. Wellman), Klondike Elementary School, West Lafayette IN, Mar 2013.
4. Heinz, M.G. "The cochlea and its role in hearing," Talk presented to Self Help for Hard of Hearing People, Baltimore Chapter Meeting, Sept 2004.