CURRICULUM VITAE

Jonathan Z. Simon

Personal Information

Mailing Address
Electrical & Computer Engineering Dept.
University of Maryland
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Research Interests

Auditory Neural Computations; Magnetoencephalography and Cortical Physiology; Signal Processing in Biological Systems; Computational and Theoretical Neuroscience

Appointments

University of Maryland, College Park (UMCP)

Department of Electrical and Computer Engineering (ECE) (tenure home)
Department of Biology
Institute for Systems Research (ISR)

2014–present	Professor	ECE, Biology, ISR
2013–2014	Associate Professor	ECE, Biology, ISR
2008–2013	Associate Professor	ECE, Biology
2002–2008	Assistant Professor	ECE, Biology
2001–2002	Assistant Professor	ECE

Other Program, Institute and Center Affiliations

University of Maryland Magnetoencephalography Center	*Co-Director*
Neuroscience and Cognitive Sciences Program (*NACS*)	*Member*
Integrated Life Sciences Honors College program (*ILS*)	*Fellow*
Fischell Department of Bioengineering (*BioE*)	*Affiliate*
Center for Comparative and Evolutionary Biology of Hearing (*C-CEBH*)	*Member*

Research Laboratories

Primary *Computational Sensorimotor Systems Laboratory*, A.V. Williams Building, Rooms 2267/2269/2270 (co-director)
Secondary *Simon Laboratory*, Biology-Psychology Building, Room 3229
KIT-Maryland Magnetoencephalography Lab, Maryland Neuroimaging Center

Education

1990 *Ph.D.,* Physics, University of California, Santa Barbara (UCSB)
Advisor J. B. Hartle
Major Field Theoretical General Relativity
Dissertation "Higher Derivative Expansions and Non-locality"

1987 *M.A.,* Physics, UCSB

1985 *A.B.,* Physics, Summa Cum Laude, Princeton University, Princeton, NJ

Previous Employment

1996–2001 *Post-doctoral Research Associate* Auditory Neural Systems, Institute for Systems Research, University of Maryland, College Park.
1992–1996 *Post-doctoral Research Associate* Theoretical General Relativity, Physics Department, University of Maryland, College Park.
1990–1992 *Post-doctoral Research Associate* Theoretical General Relativity, Physics Department, University of Wisconsin, Milwaukee.

Other Professional Training/Workshops

2011 Mathematical Association of America*, Mathematical Biology*, Sweet Briar College, VA.
1999 Marine Biological Laboratory, *Analysis of Neural Data*, Woods Hole, MA.
1998, 1999 Institute of Neuromorphic Engineering, *Telluride Workshop*, Telluride, CO.
1997 Marine Biological Laboratory, *Methods in Computational Neuroscience*, Woods Hole, MA.
1992 NATO Advanced Study Institute, *Gravitation and Quantizations*, Les Houches, France
1989 Hebrew University Jerusalem Winter School, *Wormholes & Baby Universes*, Jerusalem, Israel

Professional Societies

Society for Neuroscience (SfN)
Association for Research in Otolaryngology (ARO)
Institute of Electrical and Electronics Engineers (IEEE)
American Physiological Society (APS)

Research, Scholarly, and Creative Activities

Note: Research conducted in multidisciplinary environments produces publications whose author-lists may not well summarize the role of the individual contributors. Different disciplines use conflicting author order conventions, e.g., head of lab listed last (common for biologists) or predominantly alphabetical (common for physicists). For this reason, I employ these annotations to indicate my role in co-authored publications:

LEAD AUTHOR	Responsible for conducting and writing up the majority of the research (e.g. often the *first* author).
ANCHOR AUTHOR	Supervised the work of the student or postdoc who was the lead author (e.g. often the *last* author).
CORE CO-AUTHOR	Not lead or anchor author, but still crucial to the foundations of the research; co-lead or co-anchor author.
SECONDARY CO-AUTHOR	Contributions, though significant, were secondary to those of other co-authors.

Mentored students and postdocs in co-authored publications are indicated with SMALL CAPS.

Recent Preprints in Online Archives

3. PUVVADA, K. C., M. Villafañe-Delgado, C. Brodbeck and J. Z. Simon (2017) *Neural Coding of Noisy and Reverberant Speech in Human Auditory Cortex*, bioRxiv 229153. https://doi.org/10.1101/229153 ANCHOR AUTHOR
2. PRESACCO, A., J. Z. Simon and S. Anderson (2017), *Representation of Speech in Noise in the Aging Midbrain and Cortex: Aging May Dominate Over Hearing-Loss,* bioRxiv 212159. https://doi.org/10.1101/212159 CORE CO-AUTHOR
1. CERVANTES CONSTANTINO, F., M. VILLAFAÑE-DELGADO, E. CAMENGA, K. DOMBROWSKI, B. WALSH and J. Z. Simon (2017) *Functional Significance of Spectrotemporal Response Functions Obtained using Magnetoencephalography,* bioRxiv 168997. https://doi.org/10.1101/168997 ANCHOR AUTHOR

Articles in Refereed Journals

66. BRODBECK, C., L. E. Hong and J. Z. Simon (accepted) *Rapid Transformation from Auditory to Linguistic Representations of Continuous Speech*, Curr. Biol 28, 3976–3983. ANCHOR AUTHOR
65. CERVANTES CONSTANTINO, F. and J. Z. Simon (2018) *Restoration and Efficiency of the Neural Processing of Continuous Speech are Promoted by Prior Knowledge*, Front. Sys. Neurosci. 12:56. https://doi.org/10.3389/fnsys.2018.00056. ANCHOR AUTHOR.
64. BRODBECK, C., A. PRESACCO, S. Anderson and J. Z. Simon (2018) *Over-Representation of Speech in Older Adults Originates from Early Response in Higher Order Auditory Cortex*, Acta Acust. united Ac. 104(5), 774-777. ANCHOR AUTHOR
63. Miran, S., S. Akram, A. Sheikhatar, J. Z. Simon, T. Zhang and B. Babadi (2018) *Real-Time Tracking of Selective Auditory Attention from M/EEG: A Bayesian Filtering Approach*, Front. Neurosci. 12:262. https://doi.org/10.3389/fnins.2018.00262. SECONDARY CO-AUTHOR.
62. VANTHORNHOUT, J., L. Decruy, J. Wouters, J. Z. Simon, and T. Francart (2018) *Speech Intelligibility Predicted from Neural Entrainment of the Speech Envelope*, JARO 19(2) 181-19. CORE CO-AUTHOR
61. BRODBECK, C., A. Presacco and J. Z. Simon (2018) *Neural Source Dynamics of Brain Responses to Continuous Stimuli: Speech Processing from Acoustics to Comprehension*, NeuroImage 172, 162–174. ANCHOR AUTHOR
60. PUVVADA, K. C., A. Summerfelt, X. Du, N. Krishna, P. Kochunov, L. M. Rowland, J. Z. Simon* and L. E. Hong* (2018) *Delta Vs Gamma Auditory Steady State Synchrony in Schizophrenia,* Schiz. Bull. 44(2), 378-387. *contributed equally to this work. CORE CO-AUTHOR
59. CERVANTES CONSTANTINO, F. and J. Z. Simon (2017) *Dynamic Cortical Representations of Perceptual Filling-In for Missing Acoustic Rhythm,* Sci. Rep. 7(1), 17536. ANCHOR AUTHOR
58. PUVVADA, K. C. and J. Z. Simon (2017) *Cortical Representations of Speech in a Multi-*

talker Auditory Scene, J. Neurosci. 37(38), 9189-9196. ANCHOR AUTHOR

57. Akram, S., J. Z. Simon and B. Babadi (2017), *Dynamic Estimation of the Auditory Temporal Response Function from MEG in Competing-Speaker Environments*, IEEE Trans. Biomed. Eng. 64(8), 1896-1905. CORE CO-AUTHOR

56. PRESACCO, A., J. Z. Simon and S. Anderson (2016b), *Effect of Informational Content of Noise on Speech Representation in the Aging Midbrain and Cortex*, J. Neurophysiol. 116, 2356–2367. CORE CO-AUTHOR

55. PRESACCO, A., J. Z. Simon and S. Anderson (2016a), *Evidence of Degraded Representation of Speech in Noise, in the Aging Midbrain and Cortex*, J. Neurophysiol. 116, 2346–2355. CORE CO-AUTHOR

54. NAJAFI, M., B. W. McMenamin, J. Z. Simon and L. Pessoa (2016), *Overlapping Communities Reveal Rich Structure in Large-Scale Brain Networks During Rest and Task Conditions,* NeuroImage 125, 92-106. SECONDARY CO-AUTHOR

53. DING, N., J. Z. Simon, S. A. Shamma and S. V. David (2016), *Encoding of Natural Sounds by Variance of the Cortical Local Field Potential*, J. Neurophysiol. 115, 2389-2398. CORE CO-AUTHOR

52. Akram, S., A. PRESACCO, J. Z. Simon, S. A. Shamma and B. Babadi (2016), *Robust Decoding of Selective Auditory Attention from MEG in a Competing-Speaker Environment via State-Space Modeling,* NeuroImage 124, 906–917. CORE CO-AUTHOR

51. CHAIT, M., S. Greenberg, T. Arai, J. Z. Simon and D. Poeppel (2015), *Multi-Time Resolution Analysis of Speech: Evidence from Psychophysics,* Front. Neurosci. 9:214. https://doi.org/10.3389/fnins.2015.00214 SECONDARY CO-AUTHOR

50. Simon, J. Z. (2015) *The Encoding of Auditory Objects in Auditory Cortex: Insights from Magnetoencephalography,* Intl. J. Psychophysiol. 95, 184–190.

49. Akram, S., B. Englitz, M. Elhilali, J. Z. Simon, and S. A. Shamma (2014) *Investigating the Neural Correlates of a Streaming Percept in an Informational-Masking Paradigm*, PLOS ONE 9(12): e114427. https://doi.org/10.1371/journal.pone.0114427. CO-AUTHOR

48. DING, N. and J. Z. Simon (2014) *Cortical Entrainment to Continuous Speech: Functional Roles and Interpretations,* Front. Hum. Neurosci. 8:311. https://doi.org/10.3389/fnhum.2014.00311 ANCHOR AUTHOR

47. DING, N., M. Chatterjee and J. Z. Simon (2014) *Robust Cortical Entrainment to the Speech Envelope Relies on the Spectro-temporal Fine Structure,* NeuroImage 88, 41–46. ANCHOR AUTHOR

46. DING, N. and J. Z. Simon (2013) *Adaptive Temporal Encoding Leads to a Background Insensitive Cortical Representation of Speech,* J. Neurosci. 33(13), 5728-5735. ANCHOR AUTHOR

45. DING, N. and J. Z. Simon (2013) *Power and Phase Properties of Oscillatory Neural Responses in the Presence of Background Activity,* J. Comput. Neuroscience 34(2), 337-43. (erratum corrected p. 367) ANCHOR AUTHOR

44. Zion Golumbic, E. M., N. DING, S. Bickel, P. Lakatos, C. A. Schevon, G. M. McKhann,

R. R. Goodman, R Emerson, A. D. Mehta, J. Z. Simon, D. Poeppel, and C. E. Schroeder (2013) *Mechanisms Underlying Selective Neuronal Tracking of Attended Speech at a "Cocktail Party"*, Neuron 77(5), 980-991. CORE CO-AUTHOR

43. XIANG J., D. Poeppel, and J. Z. Simon (2013) *Physiological evidence for auditory modulation filterbanks: cortical responses to concurrent modulations*, J. Acoust. Soc. Amer. 2 133(1), EL7-EL12. ANCHOR AUTHOR

42. DING, N. and J. Z. Simon (2012) *The Emergence of Neural Encoding of Auditory Objects While Listening to Competing Speakers,* Proc. Nat. Acad. Sci. 109(29), 11854-11859. ANCHOR AUTHOR

41. WANG, Y.*, N. DING*, AHMAR N., XIANG J., Poeppel D., and J. Z. Simon (2012) *Sensitivity to Temporal Modulation Rate and Spectral Bandwidth in the Human Auditory System: MEG Evidence*, J. Neurophysiol.,107, 2033-2041. *contributed equally to this work. ANCHOR AUTHOR

40. DING, N. and J. Z. Simon (2012) *Neural Coding of Continuous Speech in Auditory Cortex during Monaural and Dichotic Listening*, J. Neurophysiol. 107, 78–89. ANCHOR AUTHOR

39. ZHUO, J., S. Xu, J. Proctor, R. J. Mullins, J. Z. Simon, G. Fiskum, and R. P. Gullapalli (2012) *Diffusion Kurtosis as an in vivo imaging marker for reactive astrogliosis in traumatic brain injury*, NeuroImage 59(1) 467-477. CORE CO-AUTHOR

38. JENKINS, J., III, A. E. Rhone, W. J. Idsardi, J. Z. Simon, and D. Poeppel (2011) *The Elicitation of Audiovisual Steady-State Responses: Multi-Sensory Signal Congruity and Phase Effects*, Brain Topogr. 24(2) 134-148. SECONDARY CO-AUTHOR

37. XIANG J., J. Z. Simon and M. Elhilali (2010), *Competing streams at the cocktail party: Exploring the mechanisms of attention and temporal integration*, J. Neurosci. 30(36) 12084-12093. ANCHOR AUTHOR

36. CHAIT, M., A. de Cheveigné, D. Poeppel and J. Z. Simon (2010) *Neural dynamics of attending and ignoring in human auditory cortex*, Neuropsychologia 48(11) 3262-3271. ANCHOR AUTHOR

35. DING, N. and J. Z. Simon (2009), *Neural representations of complex temporal modulations in the human auditory cortex*, J. Neurophysiol. 102, 2731-2743. ANCHOR AUTHOR

34. Carr, C. E., D. Soares, J. Smolders and J. Z. Simon (2009), *Detection of interaural time differences in the alligator*, J. Neurosci. 29, 7948-7956. [Cover Article] SECONDARY CO-AUTHOR

33. ELHILALI, M.*, J. XIANG*, S. A. Shamma and J. Z. Simon (2009), *Interaction between attention and bottom-up saliency mediates the representation of foreground and background in an auditory scene*, PLOS Biology 7(6), e1000129. *contributed equally to this work. ANCHOR AUTHOR

32. CHAIT, M., D. Poeppel and J. Z. Simon (2008), *Auditory Temporal Edge Detection in Human Auditory Cortex,* Brain Research 12123, 78-90. ANCHOR AUTHOR

31. de Cheveigné, A., and J. Z. Simon (2008b) *Denoising Based on Spatial Filtering*, J.

Neurosci. Methods 171(2), 331-339. CORE CO-AUTHOR

30. AYTEKIN, M., C. F. Moss and J. Z. Simon (2008) *A Sensorimotor Approach to Sound Localization,* Neural Computation 20, 603-635. [Cover Article] ANCHOR AUTHOR

29. de Cheveigné, A., and J. Z. Simon (2008a) *Sensor Noise Suppression*, J. Neurosci. Methods 168(1), 195-202. CORE CO-AUTHOR

28. LUO, H., Y. WANG, D. Poeppel and J. Z. Simon (2007) *Concurrent Encoding of Frequency and Amplitude Modulation in Human Auditory Cortex: An Encoding Transition*, J. Neurophysiol. 98, 3473-3485. ANCHOR AUTHOR

27. de Cheveigné, A., and J. Z. Simon (2007) *Denoising Based on Time-Shift PCA*, J. Neurosci. Methods 165(2), 297-305. CORE CO-AUTHOR

26. CHAIT, M., D. Poeppel and J. Z. Simon (2007) *Stimulus Context Affects Auditory Cortical Responses to Changes in Interaural Correlation*, J. Neurophysiol. 98, 224-231. ANCHOR AUTHOR

25. CHAIT, M., G. Eden, D. Poeppel, J. Z. Simon, D. F. Hill and D. L. Flowers (2007) *Delayed Detection of Tonal Targets in Background Noise in Dyslexia*, Brain and Language 102, 80-90. SECONDARY CO-AUTHOR

24. CHAIT, M., D. Poeppel, A. de Cheveigné and J. Z. Simon (2007) *Processing Asymmetry of Transitions between Order and Disorder in Human Auditory Cortex*, J. Neurosci. 27, 5207-5214. ANCHOR AUTHOR

23. Simon, J. Z., D. A. Depireux, D. J. KLEIN, J. B. Fritz and S. A. Shamma (2007) *Temporal Symmetry in Primary Auditory Cortex: Implications for Cortical Connectivity*, Neural Computation 19, 583-638. LEAD AUTHOR

22. LUO, H., Y. WANG, D. Poeppel and J. Z. Simon (2006) *Concurrent Encoding of Frequency and Amplitude Modulation in Human Auditory Cortex: MEG Evidence*, J. Neurophysiol. 96, 2712-2723. ANCHOR AUTHOR

21. KLEIN, D. J., J. Z. Simon, D. A. Depireux, and S. A. Shamma (2006) *Stimulus-Invariant Processing and Spectrotemporal Reverse Correlation in Primary Auditory Cortex*, J. Comput. Neurosci. 20(2), 111-136. CORE CO-AUTHOR

20. CHAIT, M., D. Poeppel and J. Z. Simon (2006) *Neural Response Correlates of Detection of Monaurally and Binaurally Created Pitches in Humans*, Cerebral Cortex. 16(6), 835-848. [Cover Article] ANCHOR AUTHOR

19. Simon, J. Z. and Y. WANG (2005) *Fully Complex Magnetoencephalography,* J. Neurosci. Methods. 149(1), 64-73. LEAD AUTHOR

18. CHAIT, M., D. Poeppel, A. de Cheveigné and J. Z. Simon (2005) *Human Auditory Cortical Processing of Changes in Interaural Correlation*, J. Neurosci. 25(37), 8518–8527. ANCHOR AUTHOR

17. CHAIT, M., J. Z. Simon and D. Poeppel (2004) *Auditory M50 and M100 Responses to Broadband Noise: Functional Implications,* NeuroReport. 15, 2455-2458. ANCHOR AUTHOR

16. Elhilali, M., J. B. Fritz, D. J. Klein, J. Z. Simon, and S. A. Shamma (2004) *Dynamics of*

Precise Spiking in Primary Auditory Cortex, J. Neurosci. 24, 1159-1172. SECONDARY CO-AUTHOR

15. GRAU-SERRAT V., C. E. Carr, J. Z. Simon (2003) *Modeling Coincidence Detection in Nucleus Laminaris*, Biol. Cybern. 89, 388-96. ANCHOR AUTHOR

14. Depireux, D. A., J. Z. Simon, D. J. Klein, and S. A. Shamma (2001) *Spectro-Temporal Response Field Characterization With Dynamic Ripples in Ferret Primary Auditory Cortex*, J. Neurophysiol. 85, 1220-1234. LEAD AUTHOR

13. Klein, D. J., D. A. Depireux, J. Z. Simon, and S. A. Shamma (2000) *Robust Spectro-Temporal Reverse Correlation for the Auditory System: Optimizing Stimulus Design*, J. Comput. Neurosci. 9, 85-111. CORE CO-AUTHOR

12. Simon, J. Z., C. E. Carr and S. A. Shamma (1999) *A Dendritic Model of Coincidence Detection in the Avian Brainstem*, Neurocomputing 26-27, 263-269. LEAD AUTHOR

11. Depireux D. A., J. Z. Simon and S. A. Shamma (1998) *Measuring the Dynamics of Neural Responses in Primary Auditory Cortex*. Comments Theor. Biol. 5:89-118. CORE CO-AUTHOR

10. Louko J., J. Z. Simon, S. N. Winters-Hilt, *Hamiltonian Thermodynamics of a Lovelock Black Hole* (1997) Phys. Rev. D 55 3525. CORE CO-AUTHOR

9. Parker L. and J. Z. Simon, *Einstein Equations with Quantum Corrections Reduced to Second Order* (1993) Phys. Rev. D 47, 1339. LEAD AUTHOR

8. Friedman J. L., N. J. Papastamatiou and J. Z. Simon, *Failure of Unitarity for Interacting Fields on Spacetimes with Closed Timelike Curves* (1992) Phys. Rev. D 46, 4456. CORE CO-AUTHOR

7. Friedman J. L., N. J. Papastamatiou and J. Z. Simon, *Unitarity of Interacting Fields in Curved Spacetime* (1992) Phys. Rev. D 46, 4442. CORE CO-AUTHOR

6. Simon, J. Z., *No Starobinsky Inflation From Self-Consistent Semiclassical Gravity* (1992) Phys. Rev. D 45, 1953.

5. Simon, J. Z., *Stability of Flat Space, Semiclassical Gravity, and Higher Derivatives* (1991) Phys. Rev. D 43, 3308.

4. Simon, J. Z., *Higher Derivative Lagrangians, Nonlocality, Problems, and Solutions* (1990) Phys. Rev. D 41, 3720.

3. Myers R. C. and J. Z. Simon, *Black Hole Evaporation and Higher-Derivative Gravity* (1989) Gen. Rel. Grav. 21, 761. [Fourth Award, Gravity Research Foundation Essay, 1988] CORE CO-AUTHOR

2. Myers R. C. and J. Z. Simon, *Black-hole Thermodynamics in Lovelock Gravity* (1988) Phys. Rev. D 35, 2434. CORE CO-AUTHOR

1. Gott J. R. III, J. Z. Simon, and M. Alpert, *General Relativity in a (2+1)-Dimensional Space-Time: An Electrically Charged Solution* (1986) Gen. Rel. Grav. 18, 1019. LEAD AUTHOR

Book Reviews, Commentary, and Other Articles

3. Simon, J. Z., *Learning Physics from Science Fiction* (1998) Physics World 11:1, 52.
2. Simon, J. Z., *The Physics of Time Travel* (1994) Physics World 7:12, 27. [Cover Article]
1. Allen B. and J. Z. Simon (1992) *Time Travel on a String,* Nature 357, 19. CORE CO-AUTHOR

Books Edited

1. Middlebrooks, J. C., J. Z. Simon, A. N. Popper and R. R. Fay (Eds.) (2017) *The Auditory System at the Cocktail Party*, Springer Handbook of Auditory Research 60, Fay, R. R., Popper, A. N. (Series Eds.) (Springer: New York), ISBN: 978-3-319-51660-8.

Book Chapters

12. Simon, J. Z. (2017) Human Auditory Neuroscience and the Cocktail Party Problem, In *The Auditory System at the Cocktail Party*, Springer Handbook of Auditory Research 60, Ed.: Middlebrooks, J. C., J. Z. Simon, A. N. Popper and R. R. Fay (Springer: New York) ISBN: 978-3-319-51660-8, 169-197. https://doi.org/10.1007/978-3-319-51662-2_7
11. Middlebrooks, J. C. and J. Z. Simon (2017) Ear and Brain Mechanisms for Parsing the Auditory Scene, In *The Auditory System at the Cocktail Party*, Springer Handbook of Auditory Research 60, Ed.: Middlebrooks, J. C., J. Z. Simon, A. N. Popper and R. R. Fay (Springer: New York) ISBN: 978-3-319-51660-8, 1-6. https://doi.org/10.1007/978-3-319-51662-2_1
10. Elhilali, M., S. Shamma, J. Z. Simon and J. B. Fritz (2013) A Linear System's View to the Concept of STRFs, in *Handbook of Modern Techniques in Auditory Cortex*, Depireux, D. A. and M. Elhilali, M. (Eds.), (Nova Science Publishers: New York), ISBN: 978-1-6280-8894-6. CORE CO-AUTHOR
9. DING, N. and J. Z. Simon (2013) Robust Cortical Encoding of Slow Temporal Modulations of Speech, in *Basic Aspects of Hearing*, Moore, B.C.J., R. D. Patterson, I. M. Winter, R. P. Carlyon, and H. E. Gockel (Eds.), (Springer Verlag: New York), ISBN: 978-1-4614-1589-3, 373-381. ANCHOR AUTHOR
8. ELHILALI, M., J. XIANG, S. A. Shamma and J. Z. Simon (2010) Auditory Streaming at the Cocktail Party: Simultaneous Neural and Behavioral Studies of Auditory Attention, in *The Neurophysiological Bases of Auditory Perception*, Lopez-Poveda, E. A., Meddis, R., and Palmer A. R. (Eds.), (Springer Verlag: New York), ISBN: 978-1441956859, 545-553. ANCHOR AUTHOR
7. CHAIT, M., D. Poeppel, and J. Z. Simon (2007) Human Auditory Cortical Processing of Transitions Between 'Order' and 'Disorder', in *Hearing – From Sensory Processing to Perception*, Kollmeier, B., Klump, G., Hohmann, V., Langemann, U., Mauermann, M., Uppenkamp, S., and Verhey, J. (Eds.), (Springer Verlag: New York), ISBN: 978-3-540-

73008-8, 323-331. ANCHOR AUTHOR

6. CHAIT, M. and J. Z. Simon (2007) The dynamics of the Construction of Auditory Perceptual Representations: MEG Brain Imaging in Humans, In *Reasoning and Cognition Interdisciplinary Series on Reasoning Studies Vol. 2*, ed. D. Andler, Y. Ogawa, M. Okada, and S. Watanabe. (Keio University Press: Tokyo), ISBN: 4-7664-1332-6, 265-280. ANCHOR AUTHOR
5. Carr, C. E., S. Iyer, D. Soares, S. Kalluri and J. Z. Simon (2006) Are Neurons Adapted for Specific Computations? Examples from Temporal Coding in the Auditory System, In *23 Problems in Systems Neuroscience*, ed. L. v. Hemmen and T. Sejnowski. (Oxford University Press: Oxford), ISBN: 0-19514-822-3, 245-265. CORE CO-AUTHOR
4. Elhilali M., Klein D., Fritz J., Simon J. and Shamma S. (2005) The Enigma of Cortical Responses: Slow Yet Precise, in *Auditory signal processing: physiology, psychoacoustics, and models*, D. Pressnitzer, A. de Cheveigné, S. McAdams and L. Collet, (Springer Verlag: New York), ISBN: 0-38721-915-3, 485-494. SECONDARY CO-AUTHOR
3. Simon, J. Z., S. Parameshwaran, T. M. Perney, and C. E. Carr (2001) Temporal Coding in the Auditory Brainstem of the Barn Owl, In *Physiological and Psychophysical Bases of Auditory Function*, Ed.: D. J. Breebaart, A. J. M. Houtsma, A. Kohlrausch, V. F. Prijs, and R. Schoonhoven (Shaker: Maastricht) ISBN: 1-86156-069-9, 336-342. CORE CO-AUTHOR
2. Depireux D. A., P. Ru, S. A. Shamma, and J. Z. Simon (1998) Response-Field Dynamics in the Auditory Pathway, In *Computational Neuroscience: Trends in Research*, Ed: J. M. Bower (Elsevier: Amsterdam) ISBN: 0-44450-307-2, 263-270. CORE CO-AUTHOR
1. Simon, J. Z., D. A. Depireux, and S. A. Shamma (1998) Representation of Complex Dynamic Spectra in Auditory Cortex. In *Psychophysical and Physiological Advances in Hearing*. Ed.: A. R. Palmer, A. Rees, A. Q. Summerfield, and R. Meddis (Whurr: London) ISBN: 1-86156-069-9, 513-520. CORE CO-AUTHOR

Selected refereed conference proceedings

11. Miran, S., S. Akram, A. Sheikhatar, J. Z. Simon, T. Zhang and B. Babadi (2018) *Real-Time Decoding of Auditory Attention from EEG via Bayesian Filtering*, Conf Proc IEEE Eng Med Biol Soc. 2018:25-28. SECONDARY CO-AUTHOR
10. Senevirathna, B., L. Berman, N. Bertoni, F. Pareschi, M. Mangia, R. Rovatti, G. Setti, J. Simon, and P. Abshire (2016) *A Low Cost Mobile EEG for Characterization of Cortical Auditory Responses*, 2016 IEEE International Symposium on Circuits and Systems (ISCAS). CORE CO-AUTHOR
9. Bertoni, N., B. Senevirathna, F. Pareschi, M. Mangia, J. Z. Simon, R. Rovatti, P. Abshire, and G. Setti (2016) *Low-power EEG monitor based on Compressed Sensing and featuring compressed domain noise rejection*, 2016 IEEE International Symposium on Circuits and Systems (ISCAS). CORE CO-AUTHOR
8. Akram, S., J. Z. Simon, S. A. Shamma, and B. Babadi (2014) *A State-Space Model for*

Decoding Auditory Attentional Modulation from MEG in a Competing-Speaker Environment, NIPS 2014 Advances in Neural Information Processing Systems 27, 460-468. SECONDARY CO-AUTHOR

7. Simon, J. Z. and N. DING (2010) *Magnetoencephalography and Auditory Neural Representations*, In Proc. Southern Biomedical Engineering Conference 2010, IFMBE Proceedings 32, K.E. Herold, W.E. Bentley, and J. Vossoughi (Eds.), 45–48. ANCHOR AUTHOR
6. de Cheveigné, A., J. Le Roux and J. Z. Simon (2007) *MEG Signal Denoising Based On Time-Shift PCA*, In Proc. ICASSP 2007 International Conference on Acoustics, Speech, and Signal Processing, Vol. I, 317-320. CORE CO-AUTHOR
5. WANG, Y., N. AHMAR, J. XIANG, L. MA, D. Poeppel and J. Z. Simon (2005) *Complex Valued Equivalent-Current Dipole Fits for MEG Responses*, Neural Engineering, 2005. Conference Proceedings. 2nd International IEEE EMBS Conference on, 273-276. ANCHOR AUTHOR
4. XIANG, J., Y. WANG and J. Z. Simon (2005) *MEG Responses to Speech and Stimuli with Speechlike Modulations*, Neural Engineering, 2005. Conference Proceedings. 2nd International IEEE EMBS Conference on, 33-36. ANCHOR AUTHOR
3. AHMAR, N. and J. Z. Simon (2005) *MEG Adaptive Noise Suppression using Fast LMS*, Neural Engineering, 2005. Conference Proceedings. 2nd International IEEE EMBS Conference on, 29-32. ANCHOR AUTHOR
2. AHMAR, N., Y. Wang and J. Z. Simon (2005) *Significance Tests for MEG Response Detection*, Neural Engineering, 2005. Conference Proceedings. 2nd International IEEE EMBS Conference on, 21-24. ANCHOR AUTHOR
1. KANLIS N. A., J. Z. Simon, and S. A. Shamma (2000) *Complete training analysis of feedback architecture networks that perform blind source separation and deconvolution*, In Proc. Independent Component Analysis and Blind Signal Separation Workshop, ICA2000, 139–144. ANCHOR AUTHOR

Invited talks and panels

85. Attention to Sound - (British) Royal Society (2018) *Transformation from Auditory to Linguistic Representations, across Auditory Cortex, is Rapid and Attention Dependent*
84. Asilomar Conference on Signals, Systems, and Computers (ACSSC) (2018) *Cortical Localization of the Auditory Temporal Response Function from MEG via Non-convex Optimization.*
83. International Workshop on Advances in Audiology (2018) *Adaptation to Noise and Cortical Representation of Speech.*
82. Auditory EEG Signal Processing Symposium (AESoP) (2018) *Recent Advances in Cortical Representations of Speech using MEG.*
81. International Congress of Clinical Neurophysiology (2018) *Neural Representations of Speech in Human Auditory Cortex.*

80. UMCP ISR Colloquium (2017) *Neural Representations of Speech in Human Auditory Cortex: Systems-Based Approaches.*
79. UMCP Applied Dynamics Seminar (2017) *Neural Representations of Speech in Human Auditory Cortex*.
78. Acoustical Society of America (2017) *Neural Representations of Restored Acoustic Rhythm in Noise*.
77. Physics of Hearing: From Neurobiology to Information Theory and Back (2017) *Neural Representations of Speech in Human Auditory Cortex*.
76. Physics of Hearing: From Neurobiology to Information Theory and Back (2017) *How the Brain Solves the Cocktail Party Problem: Evidence from Human Auditory Neuroscience*.
75. University of California Santa Barbara, Kavli Institute for Theoretical Physics (KITP) (2017) *Why Would a Theoretical Physicist Study the Auditory Brain?*.
74. Montgomery Blair High School, Biology Club (2016) *Investigating Function in Human Auditory Cortex with Magnetoencephalography*.
73. Zhejiang University, College of Biomedical Engineering and Instrument Sciences (2016) *Neural Representations of Speech at the "Cocktail Party" in Human Auditory Cortex*.
72. NYU Shanghai and East China Normal University, NYU-ECNU Institute of Brain and Cognitive Science (2016) *Neural Representations of Speech at the "Cocktail Party" in Human Auditory Cortex*.
71. Beijing University, McGovern Institute (2016) *Neural Representations of Speech at the "Cocktail Party" in Human Auditory Cortex*.
70. Acoustical Society of America (2016) *Neural Representations of Speech, and Speech in Noise, in Human Auditory Cortex*.
69. SPIRE, Groningen, Netherlands (2016) *Neural Representations of Speech, and Speech in Noise, in Human Auditory Cortex*.
68. Paris Workshop on Decoding of Sound and Brain (2015) *Neural Representations of the Cocktail Party in Human Auditory Cortex*.
67. UMB-UMCP Seed Grant Program (2015) *Temporal Auditory Coding in Schizophrenia and Treatment-Resistant Auditory Hallucination*.
66. University College London, Ear Institute (2015) *Neural Encoding of Speech in Auditory Cortex*.
65. KU Leuven, ExpORL, Belgium (2015) *Neural Encoding of Speech in Auditory Cortex*.
64. CHSCOM, Linköping Sweden (2015) *Neural Representations of the Cocktail Party in Human Auditory Cortex*.
63. Simons Foundation Biotech Symposium, MEG/EEG: Analysis, Application and Interpretation (2014) *Signal Analysis Primer and Applications.*
62. Gordon Research Conference on the Auditory System (2014) *Neural Representations of the Cocktail Party in Human Auditory Cortex*.
61. Universitas 21 Graduate Research Conference (2014) *Effects of aging on temporal synchronization of speech in noise investigated in the cortex by using MEG and in the midbrain by using EEG techniques.*
60. Johns Hopkins School of Medicine (2014) *Cortical Encoding of Auditory Objects at the Cocktail Party*.
59. Max Planck Institute — Leipzig (2014) *Neural Representations of the Cocktail Party in Human Auditory Cortex*.

58. Acoustical Society of America (2014) *Neural Representations of the Cocktail Party in Human Auditory Cortex*.
57. Sound+ (2014) *Conversation: Sounding the Humanities, Sounding the Sciences*.
56. UMCP Physics Department Colloquium (2014) *Magnetoencephalography: Introduction and Examples*.
55. UMCP Biology Department Colloquium (2013) *Cortical Encoding of Auditory Objects at the Cocktail Party*.
54. AFOSR Workshop on Magneto-Optic Polymers (2013) *Introduction to Magnetoencephalography*.
53. UMCP Joint Electrical & Computer Engineering Department/Institute for Systems Research Colloquium (2013) *Cortical Encoding of Auditory Objects at the Cocktail Party*.
52. Walter Reed National Military Medical Center, Audiology and Speech Center (2013) *Cortical Encoding of Auditory Objects at the Cocktail Party*.
51. Computational Audition, Boston (2013) *Cortical Encoding of Auditory Objects at the Cocktail Party*.
50. Presidential Symposium, Association for Research in Otolaryngology Winter Meeting (2013) *Cortical Encoding of Auditory Objects at the Cocktail Party*.
49. National Academies Keck Futures Initiative: The Informed Brain in a Digital World (2012) *The Neural Encoding of Auditory Objects while Listening to Competing Speakers*.
48. University of California at Irvine, Department of Cognitive Sciences Colloquium (2012) *Cortical Encoding of Auditory Objects in the Cocktail Party Problem*.
47. University College London, Ear Institute (2012) *Cortical Encoding of Auditory Objects in the Cocktail Party Problem*.
46. Advancements and Perspectives in Auditory Neurophysiology (APAN), San Diego (2010) *Auditory Neuroscience with Magnetoencephalography: New Quantitative Approaches*.
45. Neuronal Oscillations, Nesting, Speech Perception, Learning Workshop, New York University (2010) *Challenges in analysis of slow rhythms in MEG data*.
44. QANSAS 2009, International School on Quantum and Nano Computing Systems and Applications, Dayalbagh Educational Institute, Agra India (2009) *Magnetoencephalography: A new window into the brain* (invited but unable to present).
43. Using EEG/ERP/MEG to Understand Neural Mechanisms and Treatment Effects in Mental Illness in Children and Adolescents, NIMH Workshop (2009) *What matters, when looking for EEG/MEG biomarkers*.
42. Auditory Cortex Meeting, Magdeburg Germany (2009) *Modulation Encoding in Auditory Cortex*.
41. New York University, Psychology Department (2009) *New Methods for Denoising MEG data*.
40. Indiana University, Department of Physics (2008) *Neural Computations at the Femtotesla Scale: Visualizing Computations Inside the Human Brain*.
39. Indiana University, Department of Psychology and Brain Imaging (2008) *Foreground and background at the cocktail party: A neural and behavioral study of top-down and bottom-up auditory attention*.

38. UMCP Joint Biology/Neuroscience & Cognitive Science Seminar (2007) *Foreground and Background at the Cocktail Party: The Role of Auditory Attention in Neural Processing and Behavior*.
37. New York University, Center for Neural Systems (2007) *Neural Coding of Multiple Stimulus Features in Auditory Cortex*.
36. UMCP Electrical & Computer Engineering Colloquium (2007) *Neural Computation at the Femtotesla Scale: Visualizing Computations Inside the Human Brain*.
35. New Ideas in Hearing Workshop (2006) *Neural Coding of Multiple Stimulus Features in Auditory Cortex*, Paris. May 12-13.
34. International Symposium on Brain Communications Technology (2006), Kansai Advanced Research Institute, Japan (declined due to recent birth).
33. SAIC (McLean, VA), Center for Advanced Materials and Nanotechnology (2005) *Measuring Brain Dynamics using SQUIDs: Investigating Auditory Processing with Magnetoencephalography*.
32. Boston University, Physics Colloquium (2005), *Measuring Brain Dynamics using SQUIDs: Investigating Auditory Processing with Magnetoencephalography*.
31. Workshop on Speech Separation and Comprehension in Complex Acoustic Environments (2004), Chait, M., S. Greenberg, T. Arai, J. Z. Simon and D. Poeppel, *Two Time Scales in Speech Processing*. (Invitation to student Maria Chait.)
30. Workshop on Speech Separation and Comprehension in Complex Acoustic Environments (2004), Chait, M., J. Z. Simon and D. Poeppel, *Auditory Cortical Responses at 100 ms Post Onset are Modulated by Figure/Ground Status of the Stimulus*. (Invitation to student Maria Chait.)
29. NIDCD (NIH), Colloquium (2004) *Phase-locking in Human Auditory Cortex to Spectrotemporal Modulations*.
28. KIT 3rd International Symposium on Brain and Language (2003), Chait, M., S. Greenberg, T. Arai, J. Z. Simon and D. Poeppel, *Brain Mechanisms for Speech Segmentation*. (Invitation to student Maria Chait.)
27. Chinese-American Frontiers of Science Symposium (jointly sponsored by the National Academy of Science and the Chinese Academy of Science) (2003), Shanghai China.
26. Mathematical Biosciences Institute (2003): *Modeling Coincidence Detection in Nucleus Laminaris.*
25. Acoustical Society of America (2002) (declined due to pending births).
24. IEEE EMBS (Engineering in Medicine and Biology Society) Baltimore (2002): *Signal Processing of Auditory Responses from Magnetoencephalography (MEG).*
23. Telluride Neuromorphic Engineering Workshop (2001) *Neural Constraints in Auditory Cortex.*
22. Selectivity of Neurons in Sensory and Motor Cortices, Paris (2000) *Spectro-Temporal Processing in Primary Auditory Cortex: Simplicity & Linearity.*
21. Nature of Speech Perception, Utrecht (2000) *Intelligibility and Representation of Timbre in Primary Auditory Cortex.*
20. Cornell University, Physics Department (2000) *Computational Neurobiology: Neural Computations in the Auditory System*.
19. University of Illinois, Chicago, Bioengineering Department (2000).
18. Acoustical Society of America (2000) *Cellular Models of Coincidence Detection.*

17. Acoustical Society of America (2000) *Characterization of Time-Varying Responses to Dynamic Broadband Spectra in Primary Auditory Cortex.*
16. New York University, Center for Neural Science (1999).
15. Institute for Mathematics and its Applications, Minneapolis (1999) *Spectro-Temporal Processing of Dynamic Broadband Sounds in Auditory Cortex*.
14. Mercyhurst College, Physics Department (1996).
13. Isaac Newton Institute, Cambridge University (1994) *Loss of Unitarity in the Presence of Closed Timelike Curves*
12. University of Florida, Physics Department (1994).
11. University of North Carolina, Chapel Hill, Physics Department (1993).
10. Princeton University, Physics Department (1993).
9. Syracuse University, Physics Department (1993).
8. Fermilab, Astrophysics (1992).
7. University of Chicago, Enrico Fermi Institute (1992).
6. University of Maryland, Physics Department (1991).
5. Washington University, Physics Department (1991).
4. Tufts University, Physics Department (1990).
3. University of Massachusetts, Physics Department (1990).
2. Brown University, Physics Department (1990).
1. Cambridge University, Department of Applied Mathematics and Theoretical Physics (1989).

[The categories **Unrefereed and other refereed conference presentations** and **ISI Citations by Year and Article** are deferred until the last section.]

Films, Tapes, Photographs, etc.

Instructional videos for new Teaching Assistants (UCSB)
Getting Past Those First Quarter Blues: Interacting With Your Students (1987).
Approaches to Problem Solving: The Good & Bad (1988).

Contracts and Grants

Note: The following abbreviations are using for funding sources:
NIH National Institutes of Health
NIDCD National Institute on Deafness and Other Communication Disorders
NIBIB National Institute of Biomedical Imaging and Bioengineering
NIA National Institute on Aging
NINDS National Institute on Neurological Disorders and Stroke
NSF National Science Foundations
CRCNS Collaborative Research in Computational Neuroscience (NIH/NSF)
USDA U.S. Department of Agriculture

Current Funding

1. Neuroplasticity in Auditory Aging

NIH/NIA P01 AG 055365
09/15/2017 – 03/31/2022, $8,337,000 Program total
Role: co-I (PI: Sandra Gordon-Salant)

Project: Speech Perception with High Cognitive Demand
Sub-ProjectID 8288
$1,114,031 project total, 17% effort
Role: Project PI

Core: Signal Processing and Data Analysis Core
Sub-ProjectID 8284
$599,900 core total, 4% effort
Role: Core PI

2. NCS-FO: Extracting Functional Cortical Network Dynamics at High Spatiotemporal Resolution
   NSF 1734892
   08/01/2017 – 07/31/2021, $909,153 total, 4% effort
   Role: PI

3. Auditory Scene Analysis and Temporal Cortical Computations
   NIH/NIDCD R01 DC 014085
   03/01/2015 – 02/28/2020, $1,545,262 total, 25% effort
   Role: PI

4. An Optimization-based Approach to Breaking the Neural Code
   DARPA N660011824024
   03/26/2018 – 09/25/2019, $1,016,720 total, 17% effort
   Role: co-I (PI: Steven Marcus)

Completed Funding

1. Dance and EEG: Neural Correlates of Expressive Movement
   Brain and Behavior Initiative Seed Grant
   04/01/17 – 03/30/18, $65,312 total
   Role: Joint-PI (with: Pamela Abshire, Karen Bradley, Adriane Fang, Brad Hatfield)
2. Neuroplasticity in Auditory Aging
   UMCP Tier 2-Development Incentive
   05/28/15 – 05/27/16, $75,000 total
   Role: co-I (PI: Sandra Gordon-Salant, UMCP)
3. Cocktail Party Problem: Perspective on Neurobiology of Auditory Scene Analysis
   NIH/NIA R01 AG 036424

06/01/10 – 05/31/16, $2,164,758 total, 4% effort
Role: co-I (PI: Mounya Elhilali, Johns Hopkins University)

4. Wireless Whole-Brain Monitoring
   A. James Clark School of Engineering Seed Grant (Component Project)
   02/16/15 – 02/15/16, $37,464 (Component Project Only)
   Role: Joint-Project Leader (with: Pamela Abshire, UMCP)
   [Component Project of Seed Grant: Engineering Systems for Brain Health Management to Reza Ghodssi (PI)]

5. Temporal Auditory Coding in Schizophrenia and Treatment-Resistant Auditory Hallucination
   UMCP-UMB Research and Innovation Seed Grant
   07/14/14 – 07/13/15, $75,000 total
   Role: Joint-PI (with: Elliot Hong, U. Maryland School of Medicine)

6. Effects of Aging on Speech-in-noise Processing in the Auditory Cortex and Midbrain
   UMCP ADVANCE Program Interdisciplinary and Engaged Research Seed Grant
   04/01/14 – 03/31/15, $20,000 total
   Role: Joint-PI (with: Samira Anderson, UMCP)

7. The Neural Basis of Perceptually-Relevant Auditory Modulations in Humans
   NIH/NIDCD R01 DC 008342
   3/1/08 – 2/28/15, $1,211,718 total, 33% effort
   Role: PI

8. Cortical Mechanisms in Speech Perception
   NIH/NIDCD R01 DC 005660
   8/1/08 – 7/31/14. $3,196,316 total, 8% effort
   Role: co-I (PI: David Poeppel, New York University)

9. Cellular Basis of Sound Localization
   NIH/NIDCD R01 DC 000436
   12/1/07 – 11/30/12, $1,856,250 total, 8% effort
   co-I (PI: Catherine Carr, UMCP)

10. Quantitative Electroencephalography (EEG) to Assess Pain in Cattle
    USDA 20096512005791
    9/1/09 - 9/1/11, $362,000 total, 15% effort
    co-I (PI: Ray Stricklin, UMCP)

11. Neural Correlates of Streaming of Complex Sounds
    NIH/NIDCD R01 DC 007657
    5/1/06 – 4/30/11, $1,570,000 total, 8% effort
    co-I (PI: Shihab Shamma, UMCP)

12. CNRS (Centre National de la Recherche Scientifique)
    7/1/07 – 6/30/10, 21,000€ total (~$29,560)
    Joint-PI with: Alain de Cheveigné, Centre National de la Recherche Scientifique, Paris

13. Brain Computer Interface: Inference of Spatial Field
    NIH/NINDS F31 NS 055589

5/15/06 – 9/14/09, $73,866
Fellowship Advisor

14. Cortical Mechanisms in Speech Perception
NIH/NIDCD R56 DC 005660
8/1/07 – 7/31/08, $499,500 total, 8% effort
co-I (PI: David Poeppel, UMCP)

15. CRCNS: Auditory Scene Analysis and the Cocktail Party Problem
NIH/NIA R01 AG 027573
9/1/05 – 7/31/08, $734,275 total, 8% effort
co-I (PI: Shihab Shamma, UMCP)

16. CRCNS: Innovative Technologies Inspired by Biosonar
NIH/NIBIB R01 EB 004750
8/1/04 – 5/31/08, $1,316,859 total, 8% effort
co-I (PI: Cindy Moss, UMCP)

17. Frequency Responses to Broadband Auditory Stimuli in Magnetoencephalography
Graduate Research Board, UMCP
7/1/04–6/30/05, $4,800 total
PI

18. Coincidence Detection Models in Auditory Research
NIH/NIDCD R03 DC 004382
1/1/01–12/31/03, $222,000 total, 30% effort
PI

Fellowships, Prizes, and Awards

1998–99	NRSA Training Grant, National Institutes of Health, National Institute on Deafness and Other Communicative Disorders, University of Maryland Comparative Hearing and Evolution Training Program.
1992	NATO, Advanced Study travel award to Les Houches, France.
1991	National Science Foundation, Travel award to Kyoto, Japan.
1989	Graduate School, U.C.S.B., Award for study at Cambridge University, UK.
1988	Gravity Research Foundation, Fourth award essay.
1985–89	Regents Fellowship, U.C.S.B.
1985	Phi Beta Kappa.
1985	Kusaka Memorial Prize (best undergraduate physics thesis), Princeton University.

Editorships, Editorial Boards, and Reviewing Activities

Editorial Review Board

2007–pres. Frontiers in Neuroscience

Reviewing Activities for Journals

Nature

Proceedings of the National Academy of Sciences
PLOS Biology
Journal of Neuroscience
Cerebral Cortex
NeuroImage
Journal of Neurophysiology
PLOS Computational Biology
Physical Review E
Neural Computation
European Journal of Neuroscience
Frontiers in Neuroscience
Journal of the Association for Research in Otolaryngology
IEEE Transactions on Biomedical Engineering
IEEE Transactions on Neural Systems and Rehabilitation Engineering
PLOS One
Hearing Research
Journal of Computational Neuroscience
Journal of Theoretical Biology
Psychophysiology
Journal of Cognitive Neuroscience
Physical Review D
Journal of Mathematical Physics
General Relativity and Gravitation
Classical and Quantum Gravity

Reviewing Activities for Agencies and Foundations

2018	National Science Foundation: Perception, Action, and Cognition (PAC)
2018	National Science Foundation: Integrative Strategies for Understanding Neural and Cognitive Systems (NCS)
2018	National Institutes of Health: Special Emphasis Panel
2017	National Science Foundation: Cognitive Neuroscience
2017	National Institutes of Health: Cognition and Perception (CP)
2016	National Institutes of Health: Special Emphasis Panel—Sensory and Cognitive Processes
2016	National Science Foundation: RI: Medium Language Technology
2015	National Institutes of Health: Sensory Auditory (AUD)
2015	National Institutes of Health: Sensory Perception and Cognition (SPC)
2015	Food and Drug Administration: Office of Chief Scientist Challenge Grants
2014	National Institutes of Health: Sensory Perception and Cognition (SPC)
2014	National Science Foundation/National Institutes of Health: Collaborative Research in Computational Neuroscience
2014	National Institutes of Health: Special Emphasis Panel—Language and Communication
2012	Wellcome Trust (U.K.)
2012	Air Force Office of Scientific Research
2010	Pennsylvania Department of Health

2009 National Institutes of Health: Special Emphasis Panel—Cognition and Central Visual Processing / Special Emphasis Panel—Imaging Cognition
2009 Wellcome Trust (U.K.)
2009 National Institutes of Health: Loan Repayment Panel
2009 National Science Foundation/National Institutes of Health: Collaborative Research in Computational Neuroscience
2008 National Science Foundation: Advancing Theory in Biology
2007, 2008 National Science Foundation (ad hoc)
2006 Air Force Office of Scientific Research

Reviewing Activities for Outside Universities

2018 Sydney University (Australia)
2017 Nevada System of Higher Education
2016 KU Leuven (Belgium)
2015 Hebrew University (Israel)
2008 Tel Aviv University (Israel)

Other

Citations and Citation Indices

(*as of January 3, 2019)*

ISI Web of Science:
Citations: 3290 (without self-citations: 3041)
h-index: 31
i10-index: 52
Author Search Criteria: (simon jz OR (simon j AND (allen b OR poeppel d OR elhilali m))) NOT (cooper ms OR ryan dp OR shawhan p)

Google Scholar:
Citations: 5189
h-index: 36
i10-index: 63
URL: http://scholar.google.com/citations?user=pr8YcVIAAAAJ

Erdös Number

4 (via Friedman, Chandrasekhar, Kac; Shamma, Wilbur, Macintyre; and others*)*

Teaching/Advising

Courses taught

Most Recent Five Years

Semester	Course		Credits	Enrollment
Fall '18	HLSC 374 / BSCI 374H / BIOL 667			
		Mathematical Modeling in Biology†	4	10
Spring '18	ENEE 322	Signals and System Theory	3	43
Fall '17	HLSC 374 / BSCI 374H / BIOL 667			
		Mathematical Modeling in Biology†	4	12
Spring '17	ENEE 322	Signals and System Theory	3	48
Fall '16	HLSC 374 / BSCI 374H / BIOL 667			
		Mathematical Modeling in Biology†	4	10
Spring '16	ENEE 322	Signals and System Theory	3	48
Fall '15	HLSC 374 / BSCI 474	Mathematical Modeling in Biology†	4	10
Spring '15	ENEE 222	Discrete Signal Analysis	4	64
Fall '14	HLSC 374	Mathematical Modeling in Biology†	4	27
Spring '14	ENEE 222	Discrete Signal Analysis	4	57
Fall '13	HLSC 374	Mathematical Modeling in Biology†	4	16

Complete Listing

ENEE 222	Elements of Discrete Signal Analysis (4 credits), *Spring '13*, *Spring '14*
ENEE 322	Signals and Systems (3 credits): *Spring '01, Spring '02, Spring '06, Spring '07, Spring '08, Spring '16, Spring '17, Spring '18*
ENEE 324	Engineering Probability (3 credits), *Spring '10, Spring '11*
HLSC 374*	Mathematical Modeling in Biology† (4 credits), *Fall '12, Fall '13, Fall '14, Fall '15, Fall '16, Fall '17, Fall '18*
ENEE 425	Digital Signal Processing (3 credits), *Fall '01, Spring '03, Spring '04, Fall '04*
BSCI 374H*	Mathematical Biology† (4 credits), *Fall '16 , Fall '17, Fall '18*
BSCI 474	Mathematical Biology† (4 credits), *Spring '05, Fall '06, Fall '08, Fall '15*
NACS 643	Computational Neuroscience† (4 credits), *Spring '09*
BIOL 667*	Mathematical Biology† (4 credits), *Fall '16 , Fall '17*
BIOL 708L / NACS 728B	Quantitative Analysis of Biological Data† (4 credits), *Fall '02, Fall '03, Fall '05, Fall '07, Fall '09, Fall '11*

† Includes additional weekly computer-based lab also taught.
* Cross-listed in some years but same course

Instructional Workshops and Seminars

2001–2007 Developed curriculum and taught two-week unit in neural modeling and neural data analysis at *Neural Systems & Behavior* summer course at Marine Biological Laboratory, Woods Hole. Modeling was taught using the NEURON neural simulation environment, both in its base form and with a

model of coincidence detection in the chick brainstem written by myself. Analysis was performed with MATLAB, which was also taught.

2015–2016 Developed curriculum for 1-2 day integrated lecture and computer lab on the topic "Signal Analysis Primer and Applications" for experimental neuroscientists. The computer lab component consists of original signal processing examples explored with MATLAB. Taught at the *Neural Data Science* summer course at Cold Spring Harbor Laboratory (2015), and Master Class in *Understanding and Applying Digital Signal Processing in Neurophysiology* at University of Lübeck, Germany (2016).

Course or Curriculum Development

HLSC 374, *Mathematical Modeling in Biology* is a brand new, sophomore-level honors biology course, required for students in the Honors College program *Integrated Life Sciences*. The course is aimed at biology students who would typically never take any mathematics course while in college. The philosophy of the course is to teach empowering mathematical techniques through understanding of biological models. Models are chosen from a variety of biological disciplines, including ecological population dynamics, infectious disease models, molecular evolution, and phylogenetic tree construction. Mathematical skills developed along the way include: solving non-linear difference equations, eigenvector analysis, multi-dimensional stability analysis, and the use of Excel and Matlab to implement these algorithms as computer models.

BIOL 708L/NACS 728B, *Quantitative Analysis of Biological Data* is a course created in 2002 entirely from scratch, designed for graduate students with a strong research background in biology but a weak background in mathematics. The curriculum covers: basic signal processing (filtering, Fourier analysis, spectrograms, noise), statistics (estimating validity with bootstrap and permutation tests), programming in MATLAB (signal processing, data analysis, statistics), and simple modeling. The weekly format is 3 hours of lecture plus computer lab, with a final project in which each student applies concepts of the course to his or her own research.

BSCI 474, *Mathematical Biology* had not been taught in almost a decade and was re-designed from scratch to teach applications of math in biology, for senior-level biology students. As of Fall 2016, this course is now taught as BSCI 374H and cross-listed with HLSC 374.

ENEE 425, *Digital Signal Processing*. I adjusted the curriculum of to make extensive use of MATLAB. The textbook by Oppenheim & Schafer makes this difficult, so I redesigned some of the course and all of the homework to make MATLAB an integral part of the curriculum.

(*Curriculum development for an external course, in neural modeling and neural data analysis, below*).

Manuals, Notes, Software, Webpages, and Other Contributions to Teaching

HST 723 (Harvard-MIT Division of Health Sciences and Technology) *Neural Coding and Perception of Sound*. Contributed one of four labs: Compartmental Model of Binaural Coincidence Detector Neurons. Available through MIT Open Courseware: <http://ocw.mit.edu/OcwWeb/Health-Sciences-and-Technology/HST-723Neural-Coding-and-Perception-of-SoundSpring2003/Labs/index.htm>.

Advising: Other than Research Direction

Doctoral and Masters Committees

Nikos Kanlis	ECE Ph.D.	2002
Sudha Sridaran	ECE MS.	2002
Jiwanjot K. Tulsi	ECE MS.	2002
Taishih Chi	ECE Ph.D.	2003
Virginie van Wassenhove	NACS Ph.D.	2004
Mounya El-Hilali	ECE Ph.D.	2004
Bijan Afsari	ECE M.S.	2004
Ahlia Tillman	ECE (M.S.)	2004
Shiva Sinha	NACS Ph.D.	2005
Kaushik Ghose	NACS Ph.D.	2006
Om Deshmukh	ECE Ph.D.	2006
Huan Luo	NACS Ph.D.	2007
Haiyan He	Biology Ph.D.	2007
Tarun Pruthi	ECE Ph.D.	2007
Avanti Shetye	ECE M.S.	2007
Murat Aytekin	NACS Ph.D.	2007
Feng Rong	NACS Ph.D.	2008
Christopher Glaze	NACS Ph.D.	2008
Xing Tian	NACS Ph.D.	2008
Chen Chiu	NACS Ph.D.	2008
Nima Mesgarani	ECE Ph.D.	2008
Krishna Rajaram	Biology M.S.	2008
Barak Shechter	U.M.B., Ph.D.	2009
Serin Atiani	NACS Ph.D.	2010
Greg Cogan	NACS Ph.D.	2010
Ling Ma	BioE Ph.D.	2011
Julian Jenkins	Biology Ph.D.	2011
Steve Tjoa	ECE Ph.D.	2011
Elise Zipkin	Biology Ph.D.	2012
Vladimir Ivanov	ECE Ph.D.	2012
Tarek Massoud	ECE Ph.D.	2012
Michael Jones	ECE MS.	2012
Matthew Runchey	ECE MS.	2013
Yanbo Xu	ECE MS.	2013
Caitlin Baxter	NACS MS.	2014
Ashish Shrivastava	ECE Ph.D.	2014
Sahar Akram	ECE Ph.D.	2015

Yuwei Cui	NACS Ph.D.	2015
Adam Jones	NACS Ph.D.	2015
Yi-Chun Ko	ECE MS.	2016
Amanda Chicoli	NACS Ph.D.	2016
Mark Saffer	NACS Ph.D.	2016
Chia-Chu Chou	ECE Ph.D.	2016
William Bologna	HESP Ph.D.	2017
Jessica Wess	NACS Ph.D.	2017
Ganesh Sivaraman	ECE Ph.D.	2017
Alireza Sheikhattar	ECE Ph.D.	2018
Keith Doelling (NYU)	PSYC Ph.D.	2018
Anne Tootell	PSYC Ph.D.	2018
Yujing Wang	BioE Ph.D.	2018
Kyunghun Lee	ECE Ph.D.	2018
Yishi Xing	ECE MS.	
Ji Liu	BISI Ph.D.	
Yu Jin	ECE Ph.D.	
Mattson Ogg	NACS Ph.D.	
Anna Kraemer	NACS Ph.D.	
Felix Bartsch	NACS Ph.D.	
Sina Miran	ECE Ph.D.	

Advising: Research Direction

Undergraduate

Sarah McCormack (Wesleyan)—Summer 2001, Research Internships in Neuroscience
Chris Rodgers (Purdue)—Summer 2004, REU/MERIT
Julien Dagenais (Emory)—Summer 2004
Joon Kim (UMCP)—Fall 2004
John Chai (UMCP)—Spring 2006
Robert Prior (UMCP)—Fall 2006
Minsuk Park (UMCP)—Spring 2007, Advanced Special Student
Emily Sosin (UMCP)—Spring 2008
Kevin Kahn (UMCP)—Summer 2008, REU/MERIT
Sonja Bohr (Harvey Mudd)—Summer 2008, REU/CSS
Andrea Shome (Virginia Tech)—Summer 2008, REU/CSS
Nicholas Asendorf (UMCP)—Summer 2009, REU/MERIT
Marisel Villafane Delgado (U. Puerto Rico)—Summer 2009, REU/MERIT
Leelah Jaberi (UMCP)—2009/2010, Biology Honors Thesis
Corinne Cameron (U. Alaska)—Summer 2010, REU/MERIT
Abdulaziz Al-Turki (UMCP)—Summer 2010, REU/MERIT
Marko Modric (UMCP)—Fall 2010–Spring 2011
Danni Tang (Johns Hopkins)—January 2011
Mikhail Podgornyak (UMCP)—Spring 2011

Rose Agger (UMCP)—Summer 2011
Elizabeth Camenga (U. Wisconsin)—Summer 2012, REU/MERIT
Katya Dombrowski (Princeton)—Summer 2012
Ben Walsh (UMCP)—Summer 2012, REU/MERIT
Madeleine Varmer (Lehigh)—Summer 2013, REU/MERIT
Kevin Hogan (UMCP)—Summer 2013, REU/MERIT
Alexandria Miller (UMCP)—Spring 2015–Spring 2016
James Williams (UMCP)—Fall 2014–Spring 2017
Sandra Soltz (UMCP) — Fall 2016
Anurupa Bhonsale (UMCP) — Fall 2015–Summer 2017
Ross Baehr (UMCP) — Fall 2017–Fall 2018
Justin Buck (UMCP) — Fall 2017–present
Alex Jiao (UMCP) — Spring 2018–present
Nikhil Goyal (UMCP) — Fall 2018–present
Theodore Dutcher (UMCP) — Fall 2018-present

Masters

Raul Rodriguez	ECE	M.S. 2002; Thesis: *A model of the avian superior olivary nucleus*. Current Position: Senior Scientist, Roche Pharmaceuticals.
Victor Grau-Serrat	ECE	M.S. 2003; *Thesis: Methods in realistic computational modeling of the avian Nucleus Laminaris*. Current Position: Co-Director, D-Lab at M.I.T..
Nayef Ahmar	ECE	M.S. 2005; Thesis: *da Vinci's Encephalogram: In search of significant brain signals*. Current Position: Ph.D. Student, Georgia Institute of Technology
Prathyusha Kanala	ECE	M.S. 2010; Scholarly Paper: *Modulation Filter Banks for Auditory Modeling*. Current Position: Application Software Engineer, Danfoss LLC.
Kai Sum Li	ECE	M.S. 2010; Thesis: *The Neural Dynamics of Amplitude Modulation Processing in the Human Auditory System*. Current Position: Senior Consultant, Ernst & Young.
Marisel Villafañe Delgado	ECE	M.S. 2013; Thesis: *The Cortical Representations of Speech in Reverberant Conditions*. Current Position: Johns Hopkins University Advanced Physics Lab
Ben Walsh	ECE	M.S. 2015; Thesis: *Analysis of Gamma-Band Auditory Responses in Schizophrenia*. Current Position: Engineer, Northrop Grumman Corporation.
Shailaja Akella	ENTS	Current Position: M.S. Program, University of Florida
Rahil Parikh	ECE	*in progress*

Doctoral

Maria Chait	NACS	Ph.D. 2006 Thesis: *Auditory edge detection: the dynamics of the construction of auditory perceptual representations*. (Co-advised by David Poeppel) Current Position: Reader (Faculty), University College London
Juanjuan Xiang	ECE	Ph.D. 2008 Thesis: *Hearing vs. Listening: Attention Changes the Neural Representations of Auditory Percepts*. Current Position: Director, Ping An Insurance.
Claudia Bonin	NACS	Ph.D. 2010 Thesis: *Spatial and Temporal Characteristics of Electromagnetic Activity in the Brain Prior to Reaches to Visual Targets.* Current Position: Self-Employed.
Jiachen Zhuo	ECE	Ph.D. 2011 Thesis: *Diffusion Kurtosis Magnetic Resonance Imaging and Its Application to Traumatic Brain Injury.* Current Position: Assistant Professor, University of Maryland Baltimore
Nai Ding	ECE	Ph.D. 2012 Thesis: *Temporal Coding of Speech in Human Auditory Cortex.* Current Position: Assistant Professor, Zhejiang University
Kim Drnec	NACS	Ph.D. 2013 Thesis: *Electroencephalography (EEG) and Measures of Nociception in Domestic Cattle (*Bos taurus*)*. (Co-advised by Ray Stricklin) Current Position: Postdoc, Army Research Lab
Alessandro Presacco	NACS	Ph.D. 2016 Thesis: *Effects of Aging on Midbrain and Cortical Speech-In-Noise Processing*. (Co-advised by Samira Anderson) Current Position: Postdoc, University of California, Irvine
Mahshid Najafi	ECE	Ph.D. 2017 Thesis: *Spatial and Temporal Modeling of Large-Scale Brain Networks*. (Co-advised by Luiz Pessoa) Current Position: Facebook
Francisco Cervantes Constantino	NACS	Ph.D. 2017 Thesis: *Sensory and Perceptual Codes in Cortical Auditory Processing*.

Krishna Puvvada	ECE	Ph.D. 2017 Thesis: *Cortical Representation of Speech in Complex Auditory Environments and Applications.*
Peng Zan	ECE	*in progress*
David Nahmias	ECE	*in progress*
Joshua Kulasingham	ECE	*in progress*
Dushyanthi Karunathilake	ECE	*in progress*

Post-Doc/Visiting Researcher

Yadong Wang	2003–2006	(Co-advised by David Poeppel) Current Position: Senior Technical Staff, Maxim Integrated.
Daniel Hertz	2008–2010	Current Position: Tutor at Marks Education
Aline Gesualdi Manhães	2014–2015	Current Position: Associate Professor, Federal Center for Technological Education, Rio de Janeiro, Brazil
Jonas Vanthornhout	2015	Current Position: Ph.D. Student, KU Leuven, Belgium
Christian Brodbeck	2016–present	
Alessandro Presacco	2018–present	

Service Activities

University Service

Faculty Mentoring

Linguistics Department (1 junior)	2011–present
Hearing & Speech Department (1 promoted)	2011–present
Biology Department (1 junior + 1 promoted)	2009–present

ECE Departmental Service

ECE Distinguished Dissertation Selection Committee	2017
Human Relations & Welfare Committee	2010–2011, 2013–present
Appointment, Promotion, and Tenure (APT) Committee, ad hoc member	2016–2017
Graduate Admissions Committee (ad hoc member)	2014–2015
Undergraduate Affairs Committee	2010
Facilities Committee	2001–2002, 2006–2011
Chair	2007–2009
Graduate Studies & Research Committee (GSRC)	2007–2008
MERIT Judge	2006–2007

Biology Departmental Service

Post-tenure Review Committee	2014–present
Peer Review Committees	2005–present
Appointment, Promotion, and Tenure (APT) Committee	2015–2016
Faculty Search Committee	2010–2011
Facilities and Computer Committee	2003–2007

Institute for Systems Research Service

Facilities and Services Committee	2017–2019
Salary Committee	2014–2016
Brain-Based Systems Seminar Series Committee	2014–2015

NACS Departmental Service

Curriculum Committee	2004–2011, 2016–present
Website Committee (chair)	2005–present
Self-Study/External Review Committee	2012–2013
Executive Committee	2002–2004, 2005– 2007
Colloquium Committee (chair)	2001–2002

Clark School of Engineering Service

Diversity Council
2015–present

Appointment, Promotion, and Tenure (APT) Committee, ECE Alternate Representative
2010–2011

Appointment, Promotion, and Tenure (APT) Committee, ECE Representative
2008–2009

College Of Computer, Mathematical and Natural Sciences Service

Mathematical Biology Curriculum Steering Committee
2007–present

A college-level Working Group (initially cross-college until unified under CMNS) to identify needed changes in the math curriculum for BSCI undergraduates in their early semesters, and to implement math courses to deliver that content. This working group also acts as an advisory group to the Mathematics department, which is responsible for teaching the new courses. The work of this committee led to the creation of a new two-semester sequence "Calculus for Life Sciences", MATH 130/131, with lectures taught by the Math department and discussions co-taught by BSCI and Math. For this the committee was awarded the UMCP Center for Teaching Excellence (CTE) 2009 Department Teaching Excellence Award.

Biological Physics Curriculum Steering Committee	2008–present
ILS Associate Director Search Committee	2011

Campus-Level Service

Kirwan Faculty Research and Scholarship Prize Committee	2018
Scientific Advisory Committee, Center for Sports Medicine, Health and Human Performance	2016–present
Endowed Fellowships Committee	2015
Information Technology (IT) Council	2009–2011
Task Force Committee for External Funding	2005–2006

Proposal reviews

MPOWER

Maryland Industrial Partnerships Program (MIPS)

UMCP/UM-Baltimore NIH Seed Grant Program

ADVANCE Program

Extra-Campus-Level Service

Promotion and Tenure External Reviewer	2009, 2016, 2017

Professional Service

Chinese-American Frontiers of Science (CAFOS) Symposium (jointly sponsored by the National Academy of Science and the Chinese Academy of Science), 2004 Organizing Committee.

Community, State, National Service

Exploration School, Inc. (Norwood, MA), Curriculum Advisory Council, 2007–present.

Montgomery County Public Schools, Visiting Scientist, 2009–present.

Oxon Hill High School Science Fair, Judge 2007.

Intel Science Talent Search, Semifinalist Evaluator 1999.

Media Contributions

CuriosityStream Interview, 4/20/2015: curiositystream.com

Additional Research, Scholarly, and Creative Activities

Unrefereed and other refereed conference presentations

153. Das, P., C. Brodbeck, J. Z. Simon, B. Babadi (2018) *Direct Cortical Localization of the MEG Auditory Temporal Response Function: a Non-Convex Optimization Approach,*

Society for Neuroscience abstracts.

152. Brodbeck, C., L. E. Hong and J. Z. Simon (2018) *MEG Responses Track Lexical Processing of Continuous Narrative Speech,* International Conference on the Mental Lexicon.
151. Simon, J. Z. (2018) *Neural Representations of Cocktail Party Speech Human Auditory Cortex*, Meeting of the Society for Psychophysiological Research
150. Brodbeck, C., A. Presacco, S. Kuchinksy, S. Anderson and J. Z. Simon (2018) Origins of Cortical Over-Representation of Speech in Older Adults, Auditory SPLASH
149. Zan, P., A. Presacco, A., S. Anderson and J. Z. Simon (2018) Mutual Information Analysis of Neural Representations of Speech in Noise in the Aging Midbrain, Auditory SPLASH
148. Zan, P., A. Presacco, A., S. Anderson and J. Z. Simon (2018) *Mutual Information Analysis of Neural Representations of Speech in Noise in the Aging Midbrain,* Eastern Auditory Retreat.
147. Brodbeck, C., A. Presacco, S. Anderson and J. Z. Simon (2018) *Increased Speech Representation in Older Adults Originates from Early Response in Higher Order Auditory Cortex*, International Symposium on Hearing.
146. Zan, P., A. Presacco, A., S. Anderson and J. Z. Simon (2018) *Mutual Information Analysis of Neural Representations of Speech in Noise in the Aging Midbrain,* COMBINE Workshop.
145. Miran, S., S. Akram, J. Z. Simon, T. Zhang and B. Babadi (2018) *Real-Time Tracking of the Selective Auditory Attention from M/EEG via Bayesian Filtering*, BRAIN-PI Meeting.
144. Brodbeck, C., and J. Z. Simon (2018) *Tracking Phoneme Processing During Continuous Speech Perception with MEG,* Association for Research in Otolaryngology Winter Meeting abstracts.
143. Khorramshahi, P., L. E. Hong and J. Z. Simon (2018) *Suppressing Auditory Background Speech: a Link to Auditory Hallucination in Schizophrenia,* Association for Research in Otolaryngology Winter Meeting abstracts.
142. Simon, J. Z. (2017) *Towards an Inexpensive, Lightweight Mobile EEG,* CSMHHP.
141. Miran, S., S. Akram, J. Z. Simon, T. Zhang and B. Babadi (2017) *Real-Time Tracking of the Selective Auditory Attention from M/EEG via Bayesian Filtering*, Society for Neuroscience abstracts.
140. Brodbeck, C., A. Presacco and J. Z. Simon (2017) *Neural Source Dynamics of Brain Responses to Continuous Speech: from Acoustics to Comprehension*, Society for Neuroscience abstracts.
139. Brodbeck, C., and J. Z. Simon (2017) *Tracking Phoneme Processing During Continuous Speech Perception with MEG,* Society for Neurobiology of Language.
138. Brodbeck, C., A. Presacco and J. Z. Simon (2017) *Neural Source Dynamics of Brain Responses to Continuous Speech: from Acoustics to Comprehensio*n, NIH MEG-North America Workshop.
137. Brodbeck, C., A. Presacco and J. Z. Simon (2017) *Neural Source Dynamics of Brain Responses to Continuous Speech: from Acoustics to Comprehensio*n, International Conference on Auditory Cortex (ICAC).
136. Brodbeck, C. and J.Z. Simon (2017) *Neural source dynamics of brain responses to continuous stimuli with MEG: speech processing from acoustics to comprehension,*

Statistical Analysis of Neuronal Data (SAND).

135. Kuchinsky, S.E., A. Presacco, S. Anderson and J. Z. Simon (2017) *Auditory-Cognitive Training Alters the Neural Encoding of Speech for Older Adults with Normal Hearing,* Association for Research in Otolaryngology Winter Meeting abstracts.
134. Presacco, A., K. Bostic, J.Z. Simon, and S. Anderson (2017) *Effect of Informational Content of Noise on Neural Speech Representations, with and without Peripheral Hearing Loss,* Association for Research in Otolaryngology Winter Meeting abstracts.
133. Puvvada, K. C. and J. Z. Simon (2017) *Neural Representation of Noisy Reverberant Speech in Human Auditory Cortex,* Association for Research in Otolaryngology Winter Meeting abstracts.
132. Cervantes Constantino, F. and J. Z. Simon (2017) *The Magnetoencephalographic Spectrotemporal Response Function in Auditory Cortex,* Association for Research in Otolaryngology Winter Meeting abstracts.
131. Vanthornhout, J., L. Decruy, J. Wouters, J. Z. Simon, and T. Francart (2016) *The Relation Between Neural Entrainment and Speech Intelligibility,* 2016 Advancements and Perspectives in Auditory Neurophysiology (APAN), San Diego CA.
130. Puvvada, K. C. and J. Z. Simon (2016) *Neural Representation of Noisy Reverberant Speech in Human Auditory Cortex*, 2016 NIH MEG-North America Workshop.
129. Cervantes Constantino, F. and J. Z. Simon (2016) *The Magnetoencephalographic Spectrotemporal Response Function in Auditory Cortex*, NIH MEG-North America Workshop.
128. Vanthornhout, J., L. Decruy, J. Wouters, J. Z. Simon, and T. Francart (2016) *Predicting speech understanding from EEG recordings: effect of attention,* International Hearing Aid Research Conference (IHCON).
127. Puvvada, K. C., L. E. Hong and J. Z. Simon (2016) *Low Frequency Auditory Synchronization Deficiencies in Schizophrenia,* Gordon Research Conference: The Plastic and Dynamic Auditory System.
126. Senevirathna, B., L. Berman, N. Bertoni, F. Pareschi, M. Mangia, R. Rovatti, G. Setti, J. Simon, and P. Abshire (2016) *Low Cost Mobile EEG for Characterization of Cortical Auditory Responses* 2016 IEEE International Symposium on Circuits and Systems (ISCAS).
125. Bertoni, N., B. Senevirathna, F. Pareschi, M. Mangia, J. Z. Simon, R. Rovatti, P. Abshire, and G. Setti (2016) *Low-power EEG monitor based on Compressed Sensing with Compressed Domain Noise Rejection* 2016 IEEE International Symposium on Circuits and Systems (ISCAS).
124. Puvvada, K. C., L. E. Hong and J. Z. Simon (2016) *Low Frequency Auditory Synchronization Deficiencies in Schizophrenia,* Association for Research in Otolaryngology Winter Meeting abstracts.
123. Cervantes Constantino, F. and J. Z. Simon (2016) *Top-down Neural Synchronization during Imagined Acoustic Rhythm,* Association for Research in Otolaryngology Winter Meeting abstracts.
122. Presacco, A., J.Z. Simon, and S. Anderson (2016) *Effects of Meaningful vs. Meaningless Noise on Speech Representations in the Aging Midbrain and Cortex,* Association for Research in Otolaryngology Winter Meeting abstracts.
121. Akram, S., J.Z. Simon, and B. Babadi (2015) *Dynamic Estimation of Human Brain's Receptive Fields with Confidence Intervals,* Society for Neuroscience abstracts.

120. Cervantes Constantino, F. and J.Z. Simon (2015) *Neural Rhythm Synchronizes With Imagined Acoustic Rhythm,* Statistical Analysis of Neuronal Data (SAND).
119. Presacco, A., C. Eyiba, J.Z. Simon, and S. Anderson (2015) *Effect of meaningful and meaningless noise on speech processing in auditory cortex and midbrain in younger and older adults,* Aging and Speech Communication Conference.
118. Presacco, A., J.Z. Simon, and S. Anderson (2015) *Interacting effects of aging and context on neural temporal processing,* American Auditory Society Annual Conference.
117. Presacco, A., J.Z. Simon, and S. Anderson (2015) *Evidence of Age-Related Temporal Processing Deficits in EEG and MEG Recordings,* Association for Research in Otolaryngology Winter Meeting abstracts.
116. Puvvada, K. and J. Z. Simon (2015) *Time-Constrained Neural Decoding From Multiple Auditory Cortical Areas,* Association for Research in Otolaryngology Winter Meeting abstracts.
115. Presacco, A., S. Anderson, and J. Simon (2014) *Influence of Aging on Cortical Auditory Temporal Processing of Speech in Noise*, Society for Neuroscience abstracts.
114. Erhardt, K., A. Presacco, J. Simon, and S. Anderson (2014) *Differing Effects of Noise on Subcortical Apeech Representation in Younger and Older Adults*, Society for Neuroscience abstracts.
113. Puvvada, K. and J. Z. Simon (2014) *Neural Representations of Background Speakers at the Cocktail Party,* Association for Research in Otolaryngology Winter Meeting abstracts.
112. Puvvada, K. and J. Z. Simon (2013) *Neural Representations of Background Speakers at the Cocktail Party*, Society for Neuroscience abstracts.
111. Ding, N., M. Chatterjee, and J. Z. Simon (2013) *Spectro-temporal Fine Structure is Critical for Robust Neural Encoding of Speech in Noise,* Association for Research in Otolaryngology Winter Meeting abstracts.
110. Ding, N., J. Z. Simon (2013) *Neural Entrainment to Speech, a Matter of Time or Frequency?* Association for Research in Otolaryngology Winter Meeting abstracts.
109. Camenga, E., K. Dombrowski, B. Walsh, F. Cervantes Constantino, K. Puvvada, M. Villafañe-Delgado, J. Z. Simon (2013) *Cortical Representations of Music in Human Listeners,* Association for Research in Otolaryngology Winter Meeting abstracts.
108. Ding, N. and J. Z. Simon (2012) *The Neural Encoding of Auditory Objects while Listening to Competing Speakers*, National Academies Keck Futures Initiative: The Informed Brain in a Digital World
107. Ding, N., S. A. Shamma, J. Z. Simon, and S. David (2012) *Breaking Down the Cortical Representations of Speech in LFP and MUA*, Society for Neuroscience abstracts.
106. Ding, N. and J. Z. Simon (2012) *Noise Robust Neural Synchronization to Speech Envelope,* Auditory Cortex abstracts.
105. Akram, S., J. Z. Simon, M. Elhilali, B. Englitz, and S. A.. Shamma (2012) *Temporal cues and modulation rate interplay with attention to detect a target sound embedded in background noise,* Auditory Cortex abstracts.
104. Ding, N. and J. Z. Simon (2012) *Cortical Representation of Continuous Speech in Complex Auditory Scenes*, BioMag2012 abstracts.
103. Akram, S., B.Englitz, C. Chambers, D. Pressnitzer, J. Z. Simon and S. A.. Shamma (2012) *Investigating the Perceptual Mechanism of Ambiguous Stimuli in Auditory*

Cortex, BioMag2012 abstracts.

102. Ding, N. and J. Z. Simon (2012) *Robust Cortical Encoding of Slow Temporal Modulations of Speech*, International Symposium on Hearing, Cambridge, U.K..
102. Ding, N., M. Chatterjee, and J. Z. Simon (2012) *Spectro-temporal Fine Structure Critical for Robust Neural Synchronization to Speech*, Eastern Auditory Retreat (EAR) Meeting.
101. Zhuo, J., J. Z. Simon, and R. P. Gullapalli (2012) *Optimal Diffusion Kurtosis Imaging for Clinical Use – Fewer diffusion weightings or diffusion directions?,* International Society for Magnetic Resonance in Medicine (ISMRM) 2012
100. Ding, N. and J. Z. Simon (2012) *Auditory Object Based Cortical Representation During Speech Segregation*, Association for Research in Otolaryngology Winter Meeting abstracts.
99. Ding, N., S. A. Shamma, J. Z. Simon, and S. David (2012) *Breaking Down the Cortical Representations of Speech in LFP and MUA*, Association for Research in Otolaryngology Winter Meeting abstracts.
98. Akram, S., J. Z. Simon, M. Elhilali, B. Englitz, and S. A.. Shamma (2012) *Temporal Cues and Modulation Rate Interplay with Attention to Detect a Target Sound Embedded in Background Noise*, Association for Research in Otolaryngology Winter Meeting abstracts.
97. Ding, N. and J. Z. Simon (2011) *Spectro-temporal Neural Coding of Speech in Human Auditory Cortex*, Society for Neuroscience abstracts.
96. Ding, N. and J. Z. Simon (2011) *Robust Neural Encoding of Speech in Human Auditory Cortex*, 2011 Advancements and Perspectives in Auditory Neurophysiology (APAN), Washington DC.
95. Rhone, A. E., J. Jenkins III, W. J. Idsardi, J. Z. Simon, and D. Poeppel (2011) *Audiovisual Entrainment to Pseudo-Speech Signals*, Society for Neuroscience abstracts.
94. Jenkins III, J., J. Z. Simon, D. Poeppel, and W. J. Idsardi (2011) *Psychophysical and MEG studies of the timbre of synthesized approximations to ecological vowels*, Society for Neuroscience abstracts.
93. Ding, N. and J. Z. Simon (2011) *Spectro-temporal Neural Coding of Speech in Human Auditory Cortex*, Advancements and Perspectives in Auditory Neurophysiology.
92. Ding, N. and J. Z. Simon (2011) *Cortical Processing of Continuous Speech in Auditory Cortex during Monaural and Dichotic Listening*, Neurobiology of Language Conference.
91. Jenkins III, J., J. Z. Simon, D. Poeppel, and W. J. Idsardi (2011) *Psychophysical and Physiological Studies of Synthetic Vowel Harmonic Structure*, Neurobiology of Language Conference.
90. Ding, N., M. Chatterjee, and J. Z. Simon (2011) *Temporal Processing of Vocoded Speech in Human Auditory Cortex*, Conference on Implantable Auditory Prostheses.
89. Ding, N. and J. Z. Simon (2011) *Cortical Neural Coding of Speech in Simple and Complex Auditory Scenes*, Acoustical Society of America.
88. Zhuo, J., J. Simon, and R. Gullapalli (2011) *Diffusion Kurtosis Imaging (DKI) Reconstruction - Linear or Non-Linear?,* International Society for Magnetic Resonance in Medicine (ISMRM) 2011
87. Zhuo, J., J. Mullins, J. Hazelton, J. Simon, S. Xu, T. Li, G. Fiskum, and R. Gullapalli

(2011) *Diffusion Kurtosis - A sensitive marker for Traumatic Brain Injury (TBI),* International Society for Magnetic Resonance in Medicine (ISMRM) 2011

86. Ding, N. and J. Z. Simon (2011) *Cortical Neural Coding of Speech in Simple and Complex Auditory Scenes*, COSYNE (Computational and Systems Neuroscience) abstracts.
85. Ding, N. and J. Z. Simon (2011) *Cortical Neural Coding of Speech in Simple and Complex Auditory Scenes*, Association for Research in Otolaryngology Winter Meeting abstracts.
84. Simon, J. Z. (2010) *Neural Computations in the Auditory Brain*, Institute for Systems Research 25th Anniverisary.
83. Ding, N. and J. Z. Simon (2010) *The Neural Representation of Concurrent Speech Signals in Human Auditory Cortex*, Gordon Research Conference on Sensory Coding and the Natural Environment.
82 Ding, N. and J. Z. Simon (2010) *Human Cortical Representations of Simultaneous Fast FM and Slow AM*, Association for Research in Otolaryngology Winter Meeting abstracts.
81. Ding, N. and J. Z. Simon (2009) *Human Cortical Representations of Simultaneous Fast FM and Slow AM*, Eastern Auditory Retreat (EAR) Meeting.
80. Elhilali, M., J. Xiang, S. A. Shamma and J. Z. Simon (2009) *Auditory streaming at the cocktail party: Simultaneous neural and behavioral studies of auditory attention*, International Symposium on Hearing, Salamanca, Spain.
79. Xiang, J., M. Elhilali, S. A. Shamma and J. Z. Simon (2009) *Competing streams at the cocktail party - A neural and behavioral study of auditory attention*, Association for Research in Otolaryngology Winter Meeting abstracts.
78. Xiang, J., M. Elhilali, S. A. Shamma and J. Z. Simon (2008) *Auditory attention with competing auditory streams: a simultaneous behavioral and electrophysiological study*, Society for Neuroscience abstracts.
77. Agashe H. A., Y. Wang, N. Ding and J. Z. Simon (2008) *Auditory modulation transfer functions measured by MEG for modulation rates dominant in speech*, Society for Neuroscience abstracts.
76. de Cheveigné, A. and J. Z. Simon (2008) *3 New Methods for Signal Analysis and Denoising*, BioMag2008 abstracts.
75. Xiang, J., D. Poeppel and J. Z. Simon (2008) *Cortical Representations of Compound Temporal Modulations*, Collaborative Research in Computational Neuroscience (CRCNS) Principle Investigators Meeting abstracts.
74. Elhilali, M., J. Xiang, S. A. Shamma and J. Z. Simon (2008) *Foreground and background at the cocktail party: A neural and behavioral study of top-down and bottom-up auditory attention*, COSYNE (Computational and Systems Neuroscience) abstracts.
73. Xiang, J., D. Poeppel and J. Z. Simon (2008) *Cortical Representations of Compound Temporal Modulations: Implications for Modulation Filterbanks*, Association for Research in Otolaryngology Winter Meeting abstracts.
72. Aytekin, M., C. F. Moss and J. Z. Simon (2007) *Sound localization by echolocating bats: Are auditory signals enough?* Acoustical Society of America.
71. Elhilali, M., J. Xiang, S. A. Shamma and J. Z. Simon (2007) *Foreground and background at the cocktail party - Interaction between attention and auditory pop-out*,

Society for Neuroscience abstracts.

70. Simon, J. Z., M. Elhilali, J. Xiang and S. A. Shamma (2007) *Auditory neural responses modulated by attention and correlated with perceptual detectability*, Collaborative Research in Computational Neuroscience (CRCNS) Principle Investigators Meeting abstracts.
69. Luo H., D. Poeppel and J. Z. Simon (2007) *An Encoding Transition in the Concurrent Encoding of Frequency and Amplitude Modulation in Human Auditory Cortex*, COSYNE (Computational and Systems Neuroscience) abstracts.
68. Xiang, J., M. Elhilali, S. A. Shamma and J. Z. Simon (2007) *The Interaction Between Attention and Auditory Pop-out*, Association for Research in Otolaryngology Winter Meeting abstracts.
67. Chait, M., D. Poeppel, A. de Cheveigné and J. Z. Simon (2006) *Selectively ignoring a moment in time – an auditory MEG investigation*, International Conference on the Auditory Cortex abstracts, Grantham, UK.
66. Simon J. Z., and Y. Wang (2006) *Fully Complex Magnetoencephalography,* American Physical Society March Meeting abstracts.
65. Luo H., Y. Wang, D. Poeppel and J. Z. Simon (2006) *Modulation-encoding and co-representation of the acoustic envelope and carrier in human auditory cortex*, Association for Research in Otolaryngology Winter Meeting abstracts.
64. Chait, M., J. Z. Simon and D. Poeppel (2006) *Human Auditory Cortical and Behavioral Sensitivity for Transitions Between Order and Disorder*, Association for Research in Otolaryngology Winter Meeting abstracts.
63. MacLeod, K., C. E. Carr, D. Soares, J. Z. Simon (2005) *Sound localization circuits in the auditory brainstem of the emu,* Dromaius novaehollandiae. J. B. Johnston Club and Karger Workshop abstracts.
62. Chait, M. and J. Z. Simon (2005) *The dynamics of the construction of auditory perceptual representations: MEG brain imaging in humans*, Proceedings of Reasoning and Cognition '05, Keio University, Tokyo, Japan.
61. Chait, M., D. Poeppel, A. de Cheveigné and J. Z. Simon (2005) *Human Auditory Cortical Processing of Changes in Interaural Correlation*, Society for Neuroscience abstracts.
60. Luo H., Y. Wang, D. Poeppel and J. Z. Simon (2005) *Simultaneous Encoding of Envelope and Fine Structure in Human Auditory Cortex*, Society for Neuroscience abstracts.
59. Xiang, J., Y. Wang and J. Z. Simon (2005) *Magnetoencephalography (MEG) Response to Speech and Speech-like Modulations*, Society for Neuroscience abstracts.
58. Wang Y., N. Ahmar, J. Xiang, D. Poeppel and J. Z. Simon (2005) *Auditory Steady State Responses to Broadband Noise in Human Auditory Cortex*, Society for Neuroscience abstracts.
57. Chait, M., S. Greenberg, T. Arai, J. Z. Simon and Poeppel, D. (2005) *Two Time Scales in Speech Segmentation*, ISCA Workshop on Plasticity in Speech Perception *PSP2005* abstracts.
56. Wang Y., H. Luo, D. Poeppel and J. Z. Simon (2005) *Auditory Steady State Responses to AM-FM Signals in Human Auditory Cortex*, Cognitive Neuroscience Society abstracts.
55. Chait, M., S. Greenberg, T. Arai, J. Z. Simon and Poeppel, D. (2005) *Two Time Scales*

in Speech Processing, Cognitive Neuroscience Society abstracts.

54. Luo H., Y. Wang, D. Poeppel and J. Z. Simon (2005) *Simultaneous encoding of envelope and fine structure in human auditory cortex*, Cosyne Computational and Systems Neuroscience abstracts.
53. Luo H., Y. Wang, D. Poeppel and J. Z. Simon (2005) *Phase Tracking of Slow and Rapid Tone Sequences in Human Auditory Cortex*, Association for Research in Otolaryngology Winter Meeting abstracts.
52. Chait, M., S. and J. Z. Simon (2005) *Human Auditory Cortical Sensitivity to changes in Interaural Correlation*, Association for Research in Otolaryngology Winter Meeting abstracts.
51. Wang Y., N. Ahmar, J. Xiang, D. Poeppel and J. Z. Simon (2005) *Auditory Steady State Responses to Broadband Noise in Human Auditory Cortex*, Association for Research in Otolaryngology Winter Meeting abstracts.
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