

CURRICULUM VITAE

Jonathan Z. Simon

Personal Information

Mailing Address

Electrical & Computer Engineering Dept.
University of Maryland
College Park MD 20742 U.S.A.

Email jzsimon@umd.edu

Web <http://www.isr.umd.edu/Labs/CSSL/simonlab/>

Phone 1-301-405-3645

Fax 1-301-314-9281

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

Neuroscience and Cognitive Sciences Program (NACS)

Integrated Life Sciences Honors College program (ILS)

Fischell Department of Bioengineering (BioE)

Center for Comparative and Evolutionary Biology of Hearing (C-CEBH)

Co-Director

Member

Fellow

Affiliate

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 <i>first</i> author). |
| ANCHOR AUTHOR | Supervised the work of the student or postdoc who was the lead author (e.g. often the <i>last</i> 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.

Articles in Online Archives

1. PUVVADA, K. C. and J. Z. Simon (2017) *Cortical Representations of Speech in a Multi-talker Auditory Scene*, bioRxiv 124750. doi:10.1101/124750 ANCHOR AUTHOR

Articles in Refereed Journals

58. PUVVADA, K. C., A. Summerfelt, X. Du, N. Krishna, P. Kochunov, L. M. Rowland, J. Z. Simon* and L. E. Hong* (2017) *Delta vs. Gamma Auditory Steady State Synchrony in Schizophrenia*, Schiz. Bull. *contributed equally to this work. CORE CO-AUTHOR
57. Akram, S., J. Z. Simon and B. Babadi (accepted), *Dynamic Estimation of the Auditory Temporal Response Function from MEG in Competing-Speaker Environments*, IEEE Trans. Biomed. Eng., doi:10.1109/TBME.2016.2628884. 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. doi: 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. doi: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. doi: 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.

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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., J. Z. Simon, A. R. 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

11. 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., J. Z. Simon, A. R. Popper and R. R. Fay (Springer: New York) ISBN: 978-3-319-51660-8, 169-197. doi:10.1007/978-3-319-51662-2_7
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

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

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).

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. 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
2. Dance and EEG: Neural Correlates of Expressive Movement
Brain and Behavior Initiative Seed Grant
04/01/17 – 03/30/18, \$41,250 + Fringe & Tuition
Role: Joint-PI (with: Pamela Abshire, Karen Bradley, Adriane Fang, Brad Hatfield)

Completed Funding

1. 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)
2. 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)
3. 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)]
4. 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)
5. 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)
 6. 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
 7. 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)
 8. 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)
 9. 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)
 10. 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)
 11. 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
 12. Brain Computer Interface: Inference of Spatial Field
NIH/NINDS F31 NS 055589
5/15/06 – 9/14/09, \$73,866
Fellowship Advisor
 13. 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)
 14. 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)

15. 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)
16. Frequency Responses to Broadband Auditory Stimuli in Magnetoencephalography
Graduate Research Board, UMCP
7/1/04–6/30/05, \$4,800 total
PI
17. 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.

Other

Citations and Citation Indices

(as of May 18, 2017)

ISI Web of Science:

Citations: 2517 (without self-citations: 2349)

h-index: 27

i10-index: 44

Author Search Criteria: (simon jz OR (simon j AND (allen b OR poeppel d OR elhilali m))) NOT (cooper ms OR ryan dp)

Google Scholar:

Citations: 3975

h-index: 33

i10-index: 51

URL: <http://scholar.google.com/citations?user=pr8YcVIAAAAJ>

Erdős Number

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

Teaching/Advising

Courses taught

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

[†] Includes additional weekly computer-based lab also taught by myself.

* 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 & Schaffer 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: 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 Jaber (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
 Anurupa Bhonsale (UMCP) — Fall 2015–Spring 2017
 Sandra Soltz (UMCP) — Fall 2016

Masters

Raul Rodriguez	ECE	M.S. 2002; Thesis: <i>A model of the avian superior olivary nucleus.</i> Current Position: Senior Scientist, Roche Pharmaceuticals.
Victor Grau-Serrat	ECE	M.S. 2003; Thesis: <i>Methods in realistic computational modeling of the avian Nucleus Laminaris.</i> Current Position: Co-Director, D-Lab at M.I.T..
Nayef Ahmar	ECE	M.S. 2005; Thesis: <i>da Vinci's Encephalogram: In search of significant brain signals.</i> Current Position: Ph.D. Student, Georgia Institute of Technology
Prathyusha Kanala	ECE	M.S. 2010; Scholarly Paper: <i>Modulation Filter Banks for Auditory Modeling.</i> Current Position: Application Software Engineer, Danfoss LLC.
Kai Sum Li	ECE	M.S. 2010; Thesis: <i>The Neural Dynamics of Amplitude Modulation Processing in the Human Auditory System.</i>

Marisel Villafane	ECE	Current Position: Senior Consultant, Ernst & Young. M.S. 2013; Thesis: <i>The Cortical Representations of Speech in Reverberant Conditions</i> .
Ben Walsh	ECE	Current Position: Ph.D. Student, Michigan State University. M.S. 2015; Thesis: <i>Analysis of Gamma-Band Auditory Responses in Schizophrenia</i> . Current Position: Engineer, Northrop Grumman Corporation.
Shailaja Akella	ENTS	<i>in progress</i>

Doctoral

Maria Chait	NACS	Ph.D. 2006 Thesis: <i>Auditory edge detection: the dynamics of the construction of auditory perceptual representations</i> . (Co-advised by David Poeppel) Current Position: Reader (Faculty), University College London
Juanjuan Xiang	ECE	Ph.D. 2008 Thesis: <i>Hearing vs. Listening: Attention Changes the Neural Representations of Auditory Percepts</i> . Current Position: Director, Ping An Insurance.
Claudia Bonin	NACS	Ph.D. 2010 Thesis: <i>Spatial and Temporal Characteristics of Electromagnetic Activity in the Brain Prior to Reaches to Visual Targets</i> . Current Position: Self-Employed.
Jiachen Zhuo	ECE	Ph.D. 2011 Thesis: <i>Diffusion Kurtosis Magnetic Resonance Imaging and Its Application to Traumatic Brain Injury</i> . Current Position: Assistant Professor, University of Maryland Baltimore
Nai Ding	ECE	Ph.D. 2012 Thesis: <i>Temporal Coding of Speech in Human Auditory Cortex</i> . Current Position: Assistant Professor, Zhejiang University
Kim Drnec	NACS	Ph.D. 2013 Thesis: <i>Electroencephalography (EEG) and Measures of Nociception in Domestic Cattle (Bos taurus)</i> . (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: <i>Spatial and Temporal Modeling of Large-Scale Brain Networks</i> . (Co-advised by Luiz Pessoa) Current Position: Facebook
Francisco Cervantes	NACS	Ph.D. 2017 Thesis: <i>Sensory and Perceptual Codes in Cortical Auditory Processing</i> .
Krishna Puvvada	ECE	<i>in progress</i>
Peng Zan	ECE	<i>in progress</i>
David Nahmias	ECE	<i>in progress</i>

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	