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Education:

Purdue University, West Lafayette IN, B.S. in Psychology, 1972.
Washington University, St. Louis MO, Ph.D. in Psychology, 1978.

Professional Experience:

Washington University, St. Louis MO:
NIH Predoctoral Trainee, Department of Psychology, 1974-1977.

Boys Town Institute for Communication Disorders in Children, Omaha NE:
Research Assistant, 1977-1978

Central Institute for the Deaf, St. Louis MO:
Research Associate, 1978

University of Wisconsin, Madison WI:
NIH Postdoctoral Fellow, Department of Neurophysiology, 1978-1981

Central Institute for the Deaf, St. Louis MO:
Assistant Research Scientist, 1981-1984
Assistant Professor of Psychology, Department of Speech and Hearing, 1981-1984

Los Alamos National Laboratory, Los Alamos NM:
Collaborator, Life Sciences Division, 1984
Staff Member, Life Sciences Division, 1985-1990
Group Leader, Biophysics/Neurobiology Group, 1985-1987
Group Leader, Physiology Group, 1987-1989

Boys Town National Research Hospital, Omaha NE:
Neural Coding Laboratory Coordinator, 1990 - 1995

Arizona State University, Tempe AZ:
Associate Professor, Department of Speech and Hearing Science, 1995 - 2001
Professor, Department of Speech and Hearing Science, 2001 - 2004

Utah State University, Logan UT:
Professor, Department of Psychology, 2004 - 2012
Senior Research Scientist, National Center for Hearing Research and Management, 2004 - 2012
Adjunct Professor, Department of Biology, 2005 – 2017
Adjunct Professor, Department of Communication Disorders and Deaf Education, 2015 - present

University of Canterbury, Christchurch New Zealand
Senior Lecturer, Department of Communication Disorders, 2012 – 2015
Adjunct Professor, New Zealand Institute of Language, Brain, and Behaviour, 2015 - 2018

University of Florida, Gainesville FL
Research Professor, Department of Speech, Language, and Hearing Sciences, 2017-2018
Adjunct Clinical Professor, Department of Speech, Language, and Hearing Sciences, 2018-present

Other previous affiliations:

University of New Mexico School of Medicine, Albuquerque NM:

Adjunct Associate Professor, Department of Physiology, 1987-1990

Creighton University School of Medicine, Omaha NE:

Associate Professor, Department of Otolaryngology and Human Communication, 1990 - 1995

University of Salamanca, Salamanca Spain:

Visiting Professor, Department of Cell Biology and Pathology, 2002

University of Utah, Salt Lake City UT:

Member, The Brain Institute, 2006 – 2012

Temporary Instructor, 2015

University of Canterbury, Christchurch, New Zealand:

Visiting Erskine Fellow, Department of Communication Disorders, 2009

Memberships in Professional Societies:

Current: Acoustical Society of America (Fellow, 2010-), Association for Research in Otolaryngology. Previous: Society for Neuroscience, American Association for the Advancement of Science

Research Interests:

The processing of complex sounds in the auditory system. Perception of speech in noise. Mechanisms of auditory scene analysis. Effects of hearing loss on the perception and processing of complex sounds including speech.

Peer-reviewed publications:

1. Sinex, D.G., Burdette, L.J., and Pearlman, A.L. (1979). "A psychophysical investigation of spatial vision in the normal and the reeler mutant mouse," *Vision Res.*, 19, 853-857. *PMID: 516456*
2. Geisler, C.D. and Sinex, D.G. (1980). "Responses of primary auditory fibers to combined noise and tonal stimuli," *Hear. Res.* 3, 317-334. *PMID: 7451379*
3. Sinex, D.G. and Geisler, C.D. (1981). "Auditory-nerve fiber responses to frequency-modulated tones," *Hear. Res.* 4, 127-148. *PMID: 7240021*
4. Geisler, C.D. and Sinex, D.G. (1982). "Responses of primary auditory fibers to brief tone bursts," *J. Acoust. Soc. Am.* 72, 781-794. *PMID: 7130537*
5. Sinex, D.G. and Geisler, C.D. (1983). "Responses of auditory-nerve fibers to consonant-vowel syllables," *J. Acoust. Soc. Am.* 73, 602-615. *PMID: 6841800*
6. Geisler, C.D. and Sinex, D.G. (1983). "Comparisons of click responses of primary auditory fibers with minimum-phase predictions," *J. Acoust. Soc. Am.* 73, 1671-1675. *PMID: 6863744*
7. Sinex, D.G. and Havey, D.C. (1984). "Correlates of tone-on-tone masked thresholds in the chinchilla auditory nerve," *Hear. Res.*, 13, 285-292. *PMID: 6735935*
8. Sinex, D.G. and Geisler, C.D. (1984). "Comparison of the responses of auditory nerve fibers to consonant-vowel syllables with predictions from linear models," *J. Acoust. Soc. Am.* 76, 116-121. *PMID: 6747103*
9. Sinex, D.G. and Havey, D.C. (1986). "Neural mechanisms of tone-on-tone masking: patterns of discharge rate and discharge synchrony related to rates of spontaneous discharge in the chinchilla auditory nerve," *J. Neurophysiol.*, 56, 1763-1780. *PMID: 3806187*

10. Sinex, D.G., Clark, W.W., and Bohne, B.A. (1987). "Effects of periodic rest on physiological measures of auditory sensitivity following exposure to noise," *J. Acoust. Soc. Am.*, 82, 1265-1273. *PMID: 3680783*
11. Sinex, D.G. and McDonald, L.P. (1988). "Average discharge rate representation of voice-onset time in the chinchilla auditory nerve," *J. Acoust. Soc. Am.*, 83, 1817-1827. *PMID: 3403796*
12. Sinex, D.G. and McDonald, L.P. (1989). "Synchronized discharge rate representation of voice-onset time in the chinchilla auditory nerve," *J. Acoust. Soc. Am.*, 85, 1995-2004. *PMID: 2732380*
13. Mott, J.B., McDonald, L.P., and Sinex, D.G. (1990). "Neural correlates of psychophysical release from masking," *J. Acoust. Soc. Am.*, 88, 2682-2691. *PMID: 2283440*
14. Sinex, D.G., McDonald, L.P., and Mott, J.B. (1991). "Neural correlates of nonmonotonic temporal acuity for voice onset time," *J. Acoust. Soc. Am.*, 90, 2441-2449. *PMID: 1774413*
15. Sinex, D.G. (1993). "Auditory nerve fiber representation of cues to voicing in syllable-final stop consonants," *J. Acoust. Soc. Am.*, 94, 1351-1362. *PMID: 8408976*
16. Sinex, D.G. and Narayan, S.S. (1994). "Auditory nerve fiber representation of temporal cues to voicing in word-medial stop consonants," *J. Acoust. Soc. Am.*, 95, 897-903. *PMID: 8132904*
17. Chen, G.D., Nuding, S.C., Narayan, S.S., and Sinex, D.G. (1996). "Responses of single neurons in the chinchilla inferior colliculus to consonant-vowel syllables differing in voice-onset time", *Aud. Neurosci.*, 3, 179-198.
18. Sinex, D.G. (1997). "Anatomical localization of electrophysiological recording sites by coordinate transformation," *J. Neurosci. Meth.*, 75, 35-39. *PMID: 9262141*
19. Nuding, S.C., Chen, G.D., and Sinex, D.G. (1999). "Monaural response properties of single neurons in the chinchilla inferior colliculus", *Hear. Res.*, 131, 89-106. *PMID: 10355607*
20. Chen, G.D. and Sinex, D.G. (1999). "Effects of interaural time differences on the responses of chinchilla inferior colliculus neurons to consonant-vowel syllables", *Hear. Res.*, 138, 29-44. *PMID: 10575112*
21. Sinex, D.G. and Chen, G.D. (2000). "Neural responses to the onset of voicing are unrelated to other measures of temporal resolution", *J. Acoust. Soc. Am.*, 107, 486-495. *PMID: 10641656*
22. Snyder, R.L., Sinex, D.G., McGee, J. and Walsh, E.J. (2000). "Acute spiral ganglion lesions change the tuning and tonotopic organization of cat inferior colliculus neurons", *Hear. Res.*, 147, 200-220. *PMID: 10962186*
23. Cetas, J.S., Price, R.O., Velenovsky, D.S., Sinex, D.G., and McMullen, N.T. (2001). "Frequency Organization and Cellular Lamination in the Medial Geniculate Body of the Rabbit", *Hear. Res.*, 155, 113-123. *PMID: 11335081*
24. Sinex, D.G., López, D.E., and Warr, W.B. (2001). "Electrophysiological responses of cochlear root neurons", *Hear. Res.*, 158, 28-38. *PMID: 11506934*
25. Cetas, J.S., Price, R.O., Velenovsky, D.S., Crowe, J., Sinex, D.G., and McMullen, N.T. (2002). "Cell types and response properties of neurons in the ventral division of the medial geniculate body of the rabbit", *J. Comp. Neurol.*, 445, 78-96. *PMID: 11891655*
26. Snyder, R.L. and Sinex, D.G. (2002). "Immediate changes in tuning of cat inferior colliculus neurons measured with fixed, indwelling electrodes", *J. Neurophysiol.*, 87, 434-452. *PMID: 11784761*
27. Sinex, D.G., Sabes, J.H., and Li, H. (2002). "Responses of inferior colliculus neurons to harmonic and mistuned complex tones", *Hear. Res.*, 168, 150-162. *PMID: 12117517*
28. Sinex, D.G., Li, H., Henderson, J. and Chen, G.D. (2002) "Responses of chinchilla inferior colliculus neurons to amplitude-modulated tones with different envelopes", *J. Assoc. Res. Otolaryngol.*, 3, 390-402. *PMID: 12486595*
29. Velenovsky, D.S., Cetas, J.S., Price, R.O., Sinex, D.G., and McMullen, N.T. (2003). "Functional subregions in primary auditory cortex defined by thalamocortical arbors: An

- electrophysiological and anterograde labeling study", *J. Neurosci.*, 23, 308-316.
PMID: 12514229
30. Sinex, D.G., Guzik, H., Li, H., and Sabes, J.H. (2003). "Responses of auditory nerve fibers to harmonic and mistuned complex tones", *Hear. Res.*, 182, 130-139.
PMID: 12948608, [http://dx.doi.org/10.1016/S0378-5955\(03\)00189-8](http://dx.doi.org/10.1016/S0378-5955(03)00189-8)
 31. Sinex, D.G., Li, H., and Velenovsky, D.S. (2005). "Prevalence of stereotypical responses to mistuned complex tones in the inferior colliculus", *J. Neurophysiology*, 94, 3523-3537.
PMID: 16079190 (free full text available at PubMed),
<http://dx.doi.org/10.1152/jn.01194.2004>
 32. Li, H, Sabes, J.H., and Sinex, D.G. (2006). "Responses of Inferior Colliculus Neurons to SAM Tones Located in Inhibitory Response Areas", *Hear. Res.*, 220, 116-125. *PMID: 16945495 (free full text available at PubMed)*,
<http://dx.doi.org/10.1016/j.heares.2006.07.012>
 33. Sinex, D.G. and Li, H. (2007). "Responses of inferior colliculus neurons to double harmonic tones", *J. Neurophysiol.*, 98, 3171-3184, *PMID: 17913991 (free full text available at PubMed)*, <http://dx.doi.org/10.1152/jn.00516.2007>
 34. Sinex, D.G. (2008). "Responses of cochlear nucleus neurons to harmonic and mistuned complex tones", *Hear. Res.*, 238, 39-48. *PMID: 18078726 (free full text available at PubMed)*, <http://dx.doi.org/10.1016/j.heares.2007.11.001>
 35. Snyder, R.L., Bonham, B.H., and Sinex, D.G. (2008). "Acute changes in frequency responses of inferior colliculus central nucleus (ICC) neurons following progressively enlarged restricted spiral ganglion lesions", *Hear Res.*, 246, 59-78 *PMID 18938235*,
<http://dx.doi.org/10.1016/j.heares.2008.09.010>
 36. Ahmadi, M., Gross, V.L. and Sinex, D.G. (2013). "Perceptual learning for speech in noise after application of binary time-frequency masks", *J. Acoust. Soc. Am.*, 133, 1687-1692.
(<http://dx.doi.org/10.1121/1.4789896>)
 37. Sinex, D.G. (2013). "Speech recognition after application of binary masks with different frequency resolution." *J. Acoust. Soc. Am.*, 133, 2390-2396.
(<http://dx.doi.org/10.1121/1.4792143>)
 38. Gómez-Nieto, R., Sinex, D.G., Horta-Junior, J.A.C., Castellano, O., Herrero-Turrión, M.J., and López, D.E. (2014). "A fast cholinergic modulation of the primary acoustic startle circuit in rats", *Brain Structure and Function*, 219(5), 1555-1573
(<http://link.springer.com/article/10.1007%2Fs00429-013-0585-8>)
 39. Mulder, A., Lin, E., and Sinex, D.G. (2015). "The effects of spectral smearing and elevated thresholds on speech-in-noise recognition in simulated electric-acoustic hearing", *Speech, Language, and Hearing*, 18(4), 196-203.
DOI: <http://dx.doi.org/10.1179/2050572815Y.0000000006>
 40. Fletcher, A.R, McAuliffe, M.J., Lansford, K.L., Sinex, D.G., and Liss, J.M. (2017). "Predicting Intelligibility Gains in Individuals with Dysarthria from Baseline Speech Features", *Journal of Speech, Language, and Hearing Research*, 60, 3043-3057.
https://doi.org/10.1044/2016_JSLHR-S-16-0218
 41. Morrey, J.D., Wang, H., Hurst, B.L, Zukor, K., Siddharthan, V., Van Wettere, A.J., Sinex, D.G., and Tabet, E.B. (2018). "Causation of Acute Flaccid Paralysis by Myelitis and Myositis in Enterovirus-D68 Infected Mice Deficient in Interferon $\alpha\beta/\gamma$ Receptor Deficient Mice", *Viruses* 2018, 10, 33.
<http://www.mdpi.com/1999-4915/10/1/33>
 42. Julander, J.G., Siddharthan, V., Park, A.H., Preston, E., Mathur, P., Bertolio, M., Wang, H., Zukor, K., Van Wettere, A.J., Sinex, D.G., and Morrey, J.D. (2018). "Consequences of in utero exposure to Zika virus in offspring of AG129 mice" *Scientific Reports*, 8, Article 9384
DOI:10.1038/s41598-018-27611-x

Book Chapters:

1. Sinex, D.G. (1993). "Simulation of neural responses that underlie speech discrimination," in *Neural Systems: Analysis and Modeling*, Frank H. Eeckman, ed., pp. 307-313 (Kluwer Academic Publishers, Norwell, MA).
2. Portfors, C.V. and Sinex, D.G. (2005). "Coding of Communication Sounds in the Inferior Colliculus," in *The Inferior Colliculus*, J.A. Winer and C.E. Schreiner, eds. (Springer-Verlag, New York). ISBN: 9780387220383
3. Sinex, D.G. (2005). "Spectral processing and sound source determination", in *Auditory Spectral Processing*, M. Malmierca and D. Irvine, eds. (Elsevier, San Diego). PMID: 16472640 (free full text available at PubMed)
4. Sinex, D.G. (2009). "Speech perception: Neural encoding", in *Encyclopedia of Neuroscience*, L.R. Squire, ed., 9, 239-246 (Academic Press, Oxford, UK). ISBN: 9780080450469
5. Sinex, D.G. (2009), "Auditory frequency analysis, neural", in *Encyclopedia of Perception*, E.B. Goldstein, ed. (SAGE Publications, Thousand Oaks, CA). ISBN: 9781412940818
6. Scott, S.K. and Sinex, D.G. (2010), "Coding of Speech" in *The Oxford Handbook of Auditory Science: The Auditory Brain*, A.R. Palmer and A. Rees, eds., pp193-214 (Oxford University Press, Oxford, UK). ISBN: 9780199233281
7. Gómez-Nieto, R., Horta-Junior, J.A.C., Castellano, O., Sinex, D.G. and López, D.E. (2010). "Auditory prepulse inhibition of neuronal activity in the rat cochlear root nucleus", in *The Neurophysiological Bases of Auditory Perception*, E.A. Lopez-Poveda, A.R Palmer, and R. Meddis, eds., pp 79-90 (Springer, New York). ISBN: 9781441956859
8. Sinex, D.G. (2012). "Complex Sound Encoding - Vowels and Consonants", in *Translational Perspectives in Hearing Science: Normal Aspects of Hearing*, K. Tremblay and R. Burkard, eds. (Plural Publishing, San Diego). ISBN: 9781597562027

Selected Published Abstracts:

1. Reale, R.A., Imig, T.J., and Sinex, D.G. (1979). "Rate-intensity functions of single neurons located within binaural suppression columns of cat auditory cortex", Abstracts of the Society for Neuroscience Annual Meeting.
2. Roth, G.L. and Sinex, D.G. (1981). "Responses of inferior colliculus neurons in a masking-level difference paradigm", *J. Acoust. Soc. Am.*, 69, S12.
3. Geisler, C.D. and Sinex, D.G. (1982). "Responses of primary auditory fibers to transient sounds", *J. Acoust. Soc. Am.*, 71, S111-112 (by invitation).
4. Sinex, D.G. and Havey, D.C. (1984). "Average discharge rate measures of tone-on-tone masking in the chinchilla auditory nerve," Abstracts of the Seventh Midwinter Meeting of the Association for Research in Otolaryngology, 98-99.
5. Sinex, D.G. and Havey, D.C. (1984). "Tone-on-tone masking in auditory nerve fibers with medium spontaneous rates," *J. Acoust. Soc. Am.*, 76, S36.
6. Sinex, D.G., Clark, W.W., and Bohne, B.A. (1986). "Effects of periodic rest from noise exposure on whole-nerve action potential and single auditory nerve fiber thresholds," Abstracts of the Ninth Midwinter Meeting of the Association for Research in Otolaryngology, 148-149.
7. Sinex, D.G. and McDonald, L.P. (1986). "Representation of speech sounds differing in VOT in the auditory nerve," IUPS Satellite Symposium on Hearing, San Francisco, 36.
8. Sinex, D.G. and McDonald, L.P. (1987). "Synchronized responses of chinchilla auditory nerve fibers to consonant-vowel syllables differing in voice-onset time," Abstracts of the Tenth Midwinter Meeting of the Association for Research in Otolaryngology.
9. Sinex, D.G. and McDonald, L.P. (1988). "Discriminability of stop-consonant syllables related to auditory nerve fiber discharge patterns," Abstracts of the Eleventh Midwinter Meeting of the Association for Research in Otolaryngology.

10. Sinex, D.G., McDonald, L.P., and Mott, J.B (1989). "One model predicts categorical or non-categorical temporal acuity for VOT," Abstracts of the Twelfth Midwinter Meeting of the Association for Research in Otolaryngology.
11. Mott, J.B, McDonald, L.P., and Sinex, D.G. (1989). "Physiological mechanisms underlying psychophysical release from masking," Abstracts of the Twelfth Midwinter Meeting of the Association for Research in Otolaryngology.
12. Mott, J.B, McDonald, L.P., and Sinex, D.G. (1989). "Psychophysical release from masking," *J. Acoust. Soc. Am.*, 85 Suppl 1, S34.
13. Sinex, D.G., McDonald, L.P., and Mott, J.B (1991). "Auditory nerve fiber responses to word-final plosive consonants," Abstracts of the Fourteenth Midwinter Meeting of the Association for Research in Otolaryngology.
14. Sinex, D.G. (1991). "Simulation of neural responses that underlie speech discrimination," Conference on Analysis and Modeling of Neural Systems, San Francisco.
15. Sinex, D.G (1992). "Neural representation of VOT and flexible psychophysical boundaries," Abstracts of the Fifteenth Midwinter Meeting of the Association for Research in Otolaryngology.
16. Narayan, S.S., Beehler, D.J., and Sinex, D.G (1992). "Intervocalic stop consonant representation in the chinchilla auditory nerve," *J. Acoust. Soc. Am.*, 92, 2407.
17. Narayan, S.S. and Sinex, D.G. (1993). "Coding of the temporal features of intervocalic stop consonants in chinchilla auditory nerve fibers," Abstracts of the Sixteenth Midwinter Meeting of the Association for Research in Otolaryngology.
18. López, D.E., Warr, W.B., and Sinex, D.G. (1993). "The cochlear root neurons: the first sentinels of the auditory pathway," Abstracts of the Sixteenth Midwinter Meeting of the Association for Research in Otolaryngology.
19. López, D.E., Warr, W.B., and Sinex, D.G. (1993). "Input to the reticular formation from the cochlear root neurons," Abstracts of the Sixteenth Annual Meeting of the European Neuroscience Association.
20. Chen, G-D., Narayan, S.S., Nuding, S.C., and Sinex, D.G. (1993). "Responses of single neurons in the chinchilla inferior colliculus to consonant-vowel syllables differing in voice-onset time," Abstracts of the Society for Neuroscience Annual Meeting, 537.
21. Nuding, S.C., Narayan, S.S., Chen, G-D., and Sinex, D.G. (1993). "Spatial organization of the chinchilla inferior colliculus," Abstracts of the Society for Neuroscience Annual Meeting, 537.
22. Chen, G.D., Nuding, S.C., Narayan, S.S., and Sinex, D.G. (1994). "Representation of voice-onset time in the chinchilla inferior colliculus," Abstracts of the Seventeenth Midwinter Meeting of the Association for Research in Otolaryngology.
23. Chen, G-D. and Sinex, D.G. (1996). "ITD sensitivity of neurons in the chinchilla inferior colliculus to consonant-vowel syllables", Abstracts of the Nineteenth Midwinter Meeting of the Association for Research in Otolaryngology.
24. Snyder, R.L., Sinex, D.G., Walsh, E.J., and McGee, J. (1996). "Effects of acute spiral ganglion lesions on the tuning properties and tonotopic organization of neurons in the cat inferior colliculus", Abstracts of the Society for Neuroscience Annual Meeting, 888.
25. Sinex, D.G., Snyder, R.L., Walsh, E.J., and McGee, J. (1997). "Acute spiral ganglion lesions alter tonotopic organization but not CF thresholds in the cat inferior colliculus", NIDCD Second Biennial Conference on Hearing Aid Research and Development, Bethesda, MD
26. Sinex, D.G. and Chen, G.D. (1997). "Neural responses to the onset of voicing are unrelated to other measures of temporal sensitivity", *J. Acoust. Soc. Am.*, 102, 3162.
27. Sinex, D.G. and Chen, G.D. (1998). "Responses of chinchilla inferior colliculus neurons to different types of amplitude-modulated tones", Abstracts of the Twenty-first Midwinter Meeting of the Association for Research in Otolaryngology.

28. Snyder, R.L. and Sinex, D.G. (1998). "Reorganization of cat primary auditory cortex (AI) following acute lesions of restricted spiral ganglion sectors", Abstracts of the Society for Neuroscience Annual Meeting
29. Cetas, J.S., Velenovsky, D., Velez, M.M., Price, R.O., Sinex, D.G., and McMullen, N.T. (1998). "Physiological characterization and juxtacellular labeling of medial geniculate (MGB) neurons in the rabbit". Abstracts of the Society for Neuroscience Annual Meeting
30. Cetas, J.S., Price, R.O., Sinex, D.G., and N.T. McMullen (1999). "Morphological evidence for two types of relay neurons in the ventral division of the medial geniculate body (MGV) of the rabbit", Abstracts of the Twenty-second Midwinter Meeting of the Association for Research in Otolaryngology.
31. Henderson, J.A., Li, H., and Sinex, D.G. (1999). "Responses of inferior colliculus neurons to tones in comodulated and uncomodulated noise", Abstracts of the Society for Neuroscience Annual Meeting
32. Snyder, R.L. and Sinex, D.G. (2000). "Immediate changes in the tuning properties of cat inferior colliculus (IC) neurons recorded with fixed in-dwelling microelectrodes", Abstracts of the Twenty-third Midwinter Meeting of the Association for Research in Otolaryngology.
33. Cetas, J.S., Velenovsky, D., Price, R., Sinex, D.G., and McMullen, N.T. (2000). "Frequency organization and cellular laminae in the rabbit medial geniculate body", Abstracts of the Twenty-third Midwinter Meeting of the Association for Research in Otolaryngology.
34. Sinex, D.G., Li, H., and Henderson, J. (2000). "Modulation transfer functions of chinchilla inferior colliculus neurons", Abstracts of the Society for Neuroscience Annual Meeting.
35. Velenovsky, D.S., Cetas, J.S., Price, R.O., Sinex, D.G., and McMullen, N.T. (2001) "Correspondence between functional subregions and thalamocortical terminal fields in AI arising from the ventral division of the medial geniculate body." Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
36. Snyder, R.L. and Sinex, D.G. (2001). "Immediate changes in tuning of cat inferior colliculus (IC) neurons following acute spiral ganglion lesions", International Symposium on the Central Auditory System, Salamanca, Spain
37. Li, H., Henderson, J., and Sinex, D.G. (2002). "Responses of Inferior Colliculus Neurons to SAM Tones Located in Inhibitory Response Area", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
38. Snyder, R.L. and Sinex, D.G. (2002). "Immediate changes in the responses of cat inferior colliculus neurons to restricted spiral ganglion lesions", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
39. Sinex, D.G., Li, H., and Sabes, J.H. (2003). "Modeling spectral integration that underlies IC responses to complex tones", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
40. Li, H., Sabes, J.H., and Sinex, D.G. (2003). "Responses of inferior colliculus neurons to SAM stimuli with varied modulation depth", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
41. Snyder, R.L., Bonham, B.H., and Sinex, D.G. (2003). "Immediate changes in response properties of cat inferior colliculus neurons following sequential spiral ganglion lesions", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
42. Sinex, D.G. and Li, H. (2004). "Effect of component phase on responses of inferior colliculus neurons to harmonic and mistuned complex tones", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
43. Velenovsky, D.S., Holmes, M.G., Sinex, D.G, and McMullen, N.T. (2004). "Laminar organization of tectothalamic bands and synaptic nests in the rabbit auditory thalamus", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
44. Sinex, D.G. and Li, H. (2005). "Responses of inferior colliculus neurons to simultaneous complex tones with different fundamental frequencies", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.

45. Sinex, D.G. and Zhou, A. (2008). "Responses of cochlear nucleus neurons to harmonic and mistuned complex tones", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
46. Gómez-Nieto, R., Maltezos, N., Sinex, D.G., Rubio, M, and López, D.E. (2008). "The role of the cochlear root nucleus in the modulation of the acoustic startle reflex by sounds", Abstracts of the Midwinter Meeting of the Association for Research in Otolaryngology.
47. Tabuchi, H. and Sinex, D.G. (2011). "Level-dependent intelligibility of flat-spectrum speech", Abstracts of the Spring meeting of the Acoustical Society of America. Seattle WA, May 2011
48. McAuliffe, M. and Sinex, D.G. (2015). "Role of vocabulary knowledge in younger and older listeners' speech processing", Aging and Speech Communication, Bloomington IN, October 2015
49. Fletcher, A., McAuliffe, M., Lansford, K., Sinex, D.G., and Liss, J. (2015). "Predictors of Intelligibility Improvement in Dysarthria: A Treatment Simulation Study", American Speech and Hearing Association Annual Meeting, Denver CO, November 2015
50. Cobabe, A., Munoz, K., Sinex, D.G., and Larsen, J. (2016). "Effects of various acoustic stimuli on higher order thinking and tinnitus perceptions", Abstracts of the Spring meeting of the Acoustical Society of America, Salt Lake City UT, May 2016
51. Sinex, D.G., Maclagan, M. and King, J. (2016). "Long-term average spectrum of te reo Māori", Abstracts of the Spring meeting of the Acoustical Society of America, Salt Lake City UT, May 2016
52. Rong L., Lichter, J., Wang, J., Miao, J., Dossall, D., Ranjan, R., Lin, X.E., Sinex, D.G., and Wang, Z (2017). "Development of KCNQ1 knockout golden Syrian hamsters as a model of Jervell and Lange-Nielsen syndrome", 14th Transgenic Technology Meeting, Salt Lake City, UT, October 2017
53. Nittrouer, S.N., Lowenstein, J.H., and Sinex, D.G. (2018). "Spectral Modulation Depth Detection Predicts Spoken Language Abilities of Adolescents with Normal Hearing and Cochlear Implants", Association for Research in Otolaryngology Midwinter Meeting, San Diego, February 2018.
54. McAuliffe, M., Fletcher, A., Kerr, S., and Sinex, D.G. (2018). "Lexical knowledge and speech recognition in adverse listening conditions", Conference on Hearing across the Lifespan, Cernobbio, Italy, June 2018.
55. Nittrouer, S., Lowenstein, J.H., and Sinex, D.G. (2018). "Spectral modulation detection in adolescents with normal hearing or cochlear implants predicts some language skills, but not others". Abstracts of the Fall meeting of the Acoustical Society of America, Victoria, BC, Canada, November 2018

Manuscripts in press

1. Sinex, D.G. "Signal detection theory", by invitation for *The SAGE Encyclopedia of Human Communication Sciences and Disorders*, Ball, M.J. and Damico, J., eds.

Manuscripts submitted, in preparation, or unpublished

1. Fletcher, A.R.; McAuliffe, M.J., Kerr, S.E., and Sinex, D.G. "Effects of vocabulary and implicit linguistic knowledge on speech recognition in adverse listening conditions", under revision, *American Journal of Audiology*.
2. Sinex, D.G. "Neurophysiologically-based time-frequency masks for separating speech from noise". Unpublished manuscript.

Seminars and invited presentations at professional meetings:

1. "Neural correlates of auditory masking in the chinchilla", Department of Pharmacology, Southern Illinois University School of Medicine, February 1983.

2. Panel discussant, "Symposium on testing of cochlear implants", American Speech, Language, and Hearing Association, November 1983.
3. "Neural processing of complex sounds", Department of Physiology, St. Louis University School of Medicine, November 1983.
4. "Neural processing of complex sounds", Department of Biology, St. Louis University, February 1984.
5. "Representation of speech and complex sounds in the mammalian auditory nerve", Life Sciences Division, Los Alamos National Laboratory, March 1984.
6. "Coding of complex sounds in the auditory system", Neuroscience Seminar Series, University of New Mexico, September 1985.
7. "Neural correlates of auditory masking", Kansas University Medical Center, January 1986.
8. "Encoding of speech sounds in the auditory system", Neuroscience Seminar Series, University of New Mexico, March 1987.
9. "Representation of voice-onset time in the auditory nerve", Callier Center for Communication Disorders, University of Texas - Dallas, March 1987.
10. "Encoding of complex sounds", Department of Otolaryngology, University of California - San Francisco, December 1987.
11. "Neurophysiological data and theories of speech perception", Neuroscience Seminar Series, University of New Mexico, November 1988.
12. "Interactions between neurophysiology and speech discrimination," with McDonald, L.P., and Mott, J.B., *J. Acoust. Soc. Am.*, 85, Suppl. 1, S14 (1989).
13. "Neural coding of voice onset time", Haskins Laboratories, New Haven, Connecticut, October 1990.
14. "Neural coding of voice onset time", Australian Bionic Ear and Hearing Research Institute, Melbourne, Australia, December 1990.
15. "Neural coding of stop consonants", Department of Linguistics, University of California-Berkeley, April 1992.
16. "Formation of phonetic categories" American Speech, Language, and Hearing Association Annual Meeting, November 1992
17. "Neural correlates of consonant perception", Department of Otolaryngology, University of California, San Francisco, March 1994.
18. "Neural correlates of consonant perception", Department of Biomedical Sciences, Creighton University, January 1995.
19. "Neural correlates of consonant perception", Department of Speech and Hearing Science, Arizona State University, January 1995.
20. "Rapid reorganization of frequency selectivity following spiral ganglion lesions", Department of Anatomy and Neurobiology, University of California-Irvine, September 1999
21. "Representation of temporal information by inferior colliculus neurons", Boys Town National Research Hospital, Omaha, NE, September 2000
22. "Representation of temporal information by inferior colliculus neurons", Department of Psychology, Arizona State University, October 2000
23. "Recent advances in auditory physiology", Arizona State Schools for the Deaf and the Blind Statewide Conference, January 2001
24. "Responses of inferior colliculus neurons to mistuning in harmonic complex tones", Sinex, D.G., Henderson, J., and Li, H., International Symposium on the Central Auditory System, Salamanca, Spain, May 2001
25. "Representation of temporal information in the inferior colliculus", Department of Cell Biology and Pathology, University of Salamanca, Spain, June 2002
26. "Neural correlates of spectral segregation", 147th Meeting of the Acoustical Society of America, New York, May 2004

27. "Auditory temporal processing and the segregation of simultaneous sounds", Department of Otolaryngology, University of California, San Francisco, January 2005.
28. "Listening to two things at once: Auditory processing of simultaneous sounds", Department of Biology, Utah State University, April 2005.
29. "Auditory processing and the segregation of simultaneous sounds", Kresge Hearing Research Institute, University of Michigan, April 2005
30. "Auditory neural processing of simultaneous sounds", Seminars in Neuroscience, West Virginia University, March 2007
31. "Neural mechanisms for segregating simultaneous sounds", The Auditory Brain, a satellite meeting to IBRO, Lorne, Victoria, Australia, July 2007
32. "Neural processing of simultaneous sounds", Department of Otolaryngology, The Ohio State University, December 2008
33. "Listening to two things at once – neural processing of simultaneous sounds", Department of Communication Disorders, University of Canterbury, Christchurch, New Zealand, May 2009
34. "Sound separation by the brain - applications to auditory prostheses", Department of Communication Sciences and Disorders, University of Utah, September 2009
35. "The physics of hearing", Department of Physics, Utah State University, October 2011
36. "Can principles from auditory neurophysiology be applied to improve the intelligibility of speech in noise?", Keynote address, Australasian Auditory Neuroscience Workshop, February 2013
37. Sinex, D.G. and McAuliffe, M. (2017). "Linguistic and cognitive factors affecting the perception of speech in noise". Keynote, Third annual Florida Psycholinguistics Meeting, Gainesville, October 2017.

Doctoral Dissertation:

"Cross-modality temporal resolution for auditory, vibrotactile, and visual stimuli."
Washington University, Department of Psychology, 1978. (Chairman: Professor C.S. Watson)

Grants and Awards received:

- NINCDS Postdoctoral Fellowship, "Auditory nerve fiber responses to speech",
1978-1981, Total costs US\$276,737.
Role: Principal Investigator
- NINCDS R01-NS23242, "Auditory Nerve Fiber Responses to Speech,"
1985-1988, Total direct costs: Approximately US\$270,000
Role: Principal Investigator
- NIDCD R01-DC000341, "Auditory Nerve Fiber Responses to Speech,"
1989-1994, Total direct costs approximately US\$789,000
1994-1999, Total direct costs: US\$707,133
Role: Principal Investigator
- NIDCD R01-DC000341, "Auditory Processing of Temporally-complex Sounds,"
2001-2003, Total direct costs: US\$427,500.
2004-2009, Total direct costs: US\$750,000.
Role: Principal Investigator
- NIDCD RC1 DC010615, "Neurophysiologically-based sound separation for auditory prostheses"
2009-2011, Total direct costs: US\$473,352.
Role: Principal Investigator
- Marsden Fund, Royal Society of New Zealand, "How listeners learn to comprehend distorted speech"

2014-2017, Total direct costs: NZ\$543,478.

Role: Associate Investigator (PI: Megan McAuliffe)

Grant proposals currently under review:

None

Grant proposals submitted but not funded:

2007: "Sound-driven activity of cochlear root neurons". To NSF, proposed direct costs \$720,735. Role: Principal Investigator

2007: "Stimulus coding in mouse models of auditory neuropathy", To National Organization for Hearing Research, proposed direct costs \$20,000. Role: Principal Investigator

2008: "Auditory Processing of Temporally-complex Sounds". To NIDCD, proposed direct costs \$1,250,000. Role: Principal Investigator

2013: Test protocol review, Universal Newborn Hearing Screening and Early Intervention Programme (UNHSEIP), To New Zealand Ministry of Health. Role: Principal Investigator

Professional Activities and Service:

Member, Technical Committee on Psychological and Physiological Acoustics, Acoustical Society of America, 1988-1994; 2002-2006

Member, Award of Merit Committee, Association for Research in Otolaryngology, 1994 - 1995

Member, University of California Task Force on Alternatives to Animals in Research, 1987-1988.

Member, Planning Committee, NIDCD Second Biennial Conference on Hearing Aid Research and Development, 1997

Member, Steering Committee, International Hearing Aid Conference, Lake Tahoe, NV, August, 2000

Member, Animal Use Interest Group, Association for Research in Otolaryngology, 2001

Member, Steering Committee, Conference on Implantable Auditory Prostheses, Asilomar, CA, July 2005

Member, Technical Program Organizing Committee, Acoustical Society of America, February 2007

Associate Editor, Speech, Language, and Hearing (Maney Publishing), 2015 - 2017

Ad hoc reviewer:

Grant proposals:

National Institutes of Health

Recent: AUD Special Emphasis Panel, June 2005; AUD Temporary Member Oct. 2005, July 2009; LCOM Temporary Member January 2006, October 2006, June 2007, May 2009; BNVT Special Emphasis Panel, 2012, 2014-2015

National Science Foundation

Recent: CRCNS (collaboration between NSF, NIH, and BMBF [Germany]), May 2011, January 2012

National Health and Medical Research Council (Australia)

Medical Research Council (United Kingdom)

Neurological Foundation of New Zealand

Manuscripts:

Journal of the Acoustical Society of America (JASA), Journal of the Association for Research in Otolaryngology (JARO), Hearing Research, Journal of Neurophysiology, Journal of Comparative Neurology, Journal of Speech and Hearing Research (JSHR), International Journal of Audiology, Ear and Hearing, Audiology & Neurotology, Journal of Phonetics, Speech Communication, Handbook of Acoustics, Ear and Hearing, Transactions on Biomedical Engineering, European Journal of Neuroscience, Auditory Neuroscience, BMC Neuroscience, Current Directions in Psychological Science, Journal of the Experimental Analysis of Behavior, New Zealand Dental Journal, PlosOne, Frontiers in Neural Circuits, Speech, Language, and Hearing

Classroom teaching:

Arizona State University

“Physical and Physiological Bases of Hearing”, SHS311

“Audiological Instrumentation and Calibration”, SHS515

“Otoacoustic Emissions as a Diagnostic Tool”, SHS552

“Central Auditory Mechanisms in Hearing Impairment”, SHS591

Utah State University

“Perception and Psychophysics”, Psych 3450 (lecture and online versions)

“Physiological Psychology”, Psych 3460

"Advanced topics in psychophysics", Psych 6810

“Advanced Topics in Audiology (Auditory Anatomy and Physiology)”, COMD7780

University of Canterbury, New Zealand

"Acoustics and psychoacoustics", CMDS632

“Auditory Processing Disorders”, CMDS642

“Advanced Audiology”, CMDS636 (team taught)

“Introduction to Audiology”, CMDS242 (team taught)

"Foundation Topics in Audiology", CMDS651 (team taught)

"Advanced Topics in Audiology", CMDS655 (team taught)

University of Utah

“Psychoacoustics”, CSD7420

Student supervision:

Doctoral students supervised

Department of Speech and Hearing Science, Arizona State University:

Hongzhe Li. Ph.D. awarded 2003.

Jennifer Henderson Sabes, 1998-2004.

Department of Psychology, Utah State University:

Mathew Kurian, 2004-2005.

Doctoral committee memberships:

C.C. Formby, Washington University, Department of Speech and Hearing, Ph.D. awarded 1982.

J.P. Gagne, Washington University, Department of Speech and Hearing, Ph.D. awarded 1983.

Janet Fitzakerly, Creighton University, Department of Biomedical Sciences, Ph.D. awarded 1992.

Kenneth Levy, Arizona State University, Department of Bioengineering, Ph.D. awarded 1996.

Michelle Hicks, Arizona State University, Department of Speech and Hearing Science, Ph.D. awarded 1997

Jodi Cook, Arizona State University, Department of Speech and Hearing Science, Ph.D. awarded 1998

Russell Witte, Arizona State University, Department of Bioengineering, Ph.D. awarded 2002.

Rene Gifford, Arizona State University, Department of Speech and Hearing Science, Ph.D. awarded 2003

Corina Jimenez-Gomez, Utah State University, Department of Psychology, Ph.D. awarded 2008

Ryan Ward, Utah State University, Department of Psychology, Ph.D. awarded 2008

Aaron Olsen, Utah State University, Department of Animal, Dairy, and Veterinary Science, Ph.D. awarded 2008

Arian Baquero, Utah State University, Department of Biology, Ph.D. awarded 2009

Stacey Quick, Utah State University, Department of Psychology, Ph.D. awarded 2010

Albert Zhou, Utah State University, Department of Biology, 2006-2008

Joseph Baker, Utah State University, Department of Psychology, 2010-2012

Vauna Gross, Utah State University, Department of Communicative Disorders and Deaf Education, 2011-2012.

Saiful Jamaluddin, University of Canterbury, Department of Communication Disorders, Ph.D. expected 2016

Master's Thesis Committee Chair

Chee Wong, University of Canterbury, Department of Communication Disorders, M.Aud.

Aretha Mulder, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014

Rachel Peddie, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014

Anna Suckling, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014

Isaac Smart, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2015

Caitlin Kengmana, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2015

Master's Thesis Committee memberships:

Virelle Powell, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 1996

Melanie Gregan, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 1997

Mona Dworsack, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 1998

Catherine Marsh, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 1999

Anthony Spahr, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 2001
Jennifer Repovsch, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 2001
Erica Williams, Arizona State University, Department of Speech and Hearing Science, M.S. awarded 2003
Ericka Bailey, Utah State University, Department of Psychology, M.S. awarded 2007
Robert Johnson, Utah State University, Department of Psychology, M.S. awarded 2011
Paul Daniell, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2013
Dianne Parry, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2013
Carol Crowther, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2013
Joseph Dalrymple-Alford, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014
Sarah Gray, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014
Samuel Sloane, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014
Victoria Askin, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2014
Sarah Kerr, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2015
Michele Bishell, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2015
Amber McClelland, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2015
Louise Allan, University of Canterbury, Department of Communication Disorders, M.Aud. awarded 2015

Postdoctoral fellows supervised:

John B. Mott, Ph.D., Los Alamos National Laboratory, 1988-1990.
S. Shyamla Narayan, Ph.D., Boys Town National Research Hospital, 1991-1994.
Sarah C. Nuding, Ph.D., Boys Town National Research Hospital, 1992-1995.
Guang-Di Chen, Ph.D., Boys Town National Research Hospital, 1993-1995;
Arizona State University, 1995-1998
Jialong He, Ph.D., Arizona State University, 1998-1999
Hongzhe Li, Ph.D., Arizona State University, 2003-2004
David Velenovsky, Ph.D., Arizona State University, 2003
Hisaki Tabuchi, Ph.D., Utah State University, 2010-2012
Mahnaz Ahmadi, Ph.D., Utah State University, 2010-2011

Institutional service:

Los Alamos National Laboratory:
Review committee for Institutionally Supported Research and Development Grants,
Life Sciences Division, 1988-1990.

Boys Town National Research Hospital:

Committee on Animal Care, 1990-1995; Chair, 1992-1995.
Institutional Animal Care and Use Committee (IACUC), Chair, 1994-1995.
Computer and Electronics Committee, 1990-1995.
Deaf and Minorities Training Subcommittee of Committee on Training,
1991-1995; Chair, 1993-1995.
Internal Review Committee, Chair, 1991-1992

Creighton University School of Medicine:

Committee on Animal Research, 1992-1995.

Arizona State University, Department of Speech and Hearing Science:

Interdisciplinary Ph.D. Committee, 1995
Promotion and Tenure Committee, 1996 – 1998; Chair, 2002 - 2004
Personnel and Budget Committee, 1996 – 1998; 2000 - 2002
Academic Program Review Committee, Chair, 1999 – 2000
Au.D. Degree Planning Committee, Chair, 2000-2002
Au.D. Admissions Committee, 2004

Search Committees:

Coordinator of American Sign Language, 1996 - 1997
Department Chair, 1997 - 1998
American Sign Language Instructors, 1997 - 1998
Clinical faculty in Speech-Language Pathology, 1998
Assistant Professor in Speech-Language Pathology, 2000 - 2001
Assistant Professor in Audiology, 2003 - 2004

Arizona State University, College of Liberal Arts and Sciences:

Senate, 1996 - 1998

Arizona State University, Graduate College:

Director, Interdisciplinary Ph.D. in Speech and Hearing Science, 1999 - 2002

Utah State University, Department of Psychology

Individual Promotion and Tenure Committees (multiple), 2004 - present
Program Chair, Ph.D. in Experimental and Applied Psychological Science, 2006 - 2008
Post-tenure review committees (two), 2009
Search Committee, Assistant Professor in School Psychology, 2009

Utah State University, Department of Communicative Disorders and Deaf Education

Search Committee, Assistant Professor in Audiology, 2007
Post-tenure review committees (two), 2011

D.G. Sinex

Utah State University, College of Education and Human Services
Chair, Search Committee for Director, Center for Persons with Disabilities

University of Canterbury, Department of Communication Disorders
Chair, Erskine Committee, 2013-2014

University of Canterbury, College of Science
Coordinator, Head-of-Department Search Committee, Department of Communication
Disorders, 2012

December 2018