Tucker-Davis Symposium on Advances and Perspectives in Auditory Neurophysiology (APAN VII)

Friday, October 16, 2009

Location: Hyatt Regency Chicago
Grand Ballroom C & D North center
151 East Wacker Drive, Chicago, IL 60601
http://www.chicagohyatt.com/

Scientific Program

8:30-9:00 Registration and Poster set-up (all posters)
9:00-9:05 Introduction (Andrew King & Jonathan Fritz)
9:05-10:00 Keynote lecture: Henning Scheich (Leibniz Institute for Neurobiology, Magdeburg, Germany)
Title: Semantics of multimodal processing in auditory cortex

10:00-11:00 Poster Session & Coffee Break

Slide Session 1 (Chair: Andrew King & Amy Poremba)

11:00-11:15 Development of auditory cortical responses underlying backward masking in awake gerbils
Merri J. Rosen and Dan H. Sanes
Center for Neural Science, New York University

11:15-11:30 Eye-centered reference frame of auditory and visual oculomotor signals in the primate superior colliculus
Jungah Lee & Jennifer M. Groh
Center for Cognitive Neuroscience, Department of Psychology & Neuroscience and Department of Neurobiology, Duke University, Durham, NC 27708

11:30-11:45 Local and large-scale organization of auditory cortex probed with in vivo Ca2+ imaging
Sharba Bandyopadhyay1,2, Shihab A. Shamma2 and Patrick O. Kanold1,2
1Department of Biology, University of Maryland, College Park
2Institute for Systems Research, University of Maryland, College Park

11:45-12:00 Synaptic mechanisms underlying sustained responses in auditory cortical neurons
Ben Scholl and Michael Wehr
University of Oregon

12:00-12:15 Laminar dependent representation of time-varying sounds
Poppy A.C. Crum and Xiaqin Wang
Laboratory of Auditory Neurophysiology, Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, Maryland 21025, USA

12:15-12:30 Amplitude modulation transfer functions determining BOLD response across auditory areas in the macaque
Baumann S, Rees A, Petkov C, Sun L, Thiele A, Griffiths TD
Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UK

12:30-2:00 Lunch (on your own)
Slide Session 2 (Chairs: Jennifer Groh & Liz Romanski)

2:00-2:15  The mammalian auditory cortex encodes information about global statistics of naturalistic sounds
Maria N. Geffen, Taillefumier, T., Magnasco, M.O.
Center for Studies in Physics and Biology, Rockefeller University

2:15-2:30  Task-related neuronal activity in primate prefrontal cortex during an auditory delayed matching-to-sample task
Bethany Plakke1, Chi-Wing Ng1, Ryan Opheim1, and Amy Poremba1,2
1Department of Psychology, Division of Behavioral and Cognitive Neuroscience, University of Iowa, Iowa City, IA 52242, 2Neuroscience Program, University of Iowa, Iowa City, IA 52242.

2:30-2:45  Context-dependent neural representation of vocalizations in primate ventrolateral prefrontal cortex
Allison E. Baker1, Joji Tsunada2, Selina J. Davis2, Asif A. Ghazanfar3 and Yale E. Cohen2
1Department of Psychological and Brain Sciences and Center for Cognitive Neuroscience, Dartmouth College
2Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine
3Neuroscience Institute, Department of Psychology, Princeton University

2:45-3:00  Cognitive-sensory interaction in the neural encoding of music and speech
Nina Kraus
Communication Sciences, Neurobiology and Physiology, Otolaryngology, Northwestern University, 2240 Campus Drive, Evanston, IL 60208

3:00-3:15  Response patterns of syllable-evoked activity recorded directly from human auditory cortex
M. Steinschneider1, K. Nourski2, H. Kawasaki2, H. Oya2, and M. Howard2.
A. Einstein Coll. Med.1, Bronx, NY and Univ. of Iowa Coll. Med.2, Iowa City, IA.

3:15-3:30  Stimulus-dependent receptive field dynamics are influenced by extraclassical excitation and natural stimulus statistics
David M. Schneider and Sarah M.N. Woolley
Department of Psychology and Department of Neuroscience, Columbia University

3:30-3:45  Neuroplasticity during learning of an auditory working memory task in the primate lateral prefrontal cortex
Hyunsug Kang1, Christos Constantinidis2, Jonathan Isaac1, Thane K. Plummer1, Jonathan M. Crawford1, David T. Blake1
1Brain and Behavior Discovery Institute, Medical College of Georgia, Augusta, GA
2Department of Neurobiology & Anatomy, Wake Forest University School of Medicine, Winston-Salem, NC

3:45-4:00  More Cortex Matters for Memory: Learning-induced Expansion in Auditory Cortex Predicts Memory Strength.
K.M. Bieszczad & N.M. Weinberger.
Center for the Neurobiology of Learning and Memory and Dept. of Neurobiology and Behavior, University of California, Irvine, CA.

4:00-6:00  Poster Session (continued)
POSTERS

1. Psychophysical measurement of the audiogram of the common marmoset using saccadic eye movements
Poppy A.C., Crum, Christopher P.K. Miller, Marina Pedisch, and Xiaoqin Wang
Laboratory of Auditory Neurophysiology, Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, Maryland 21205, USA

2. Measurement of behavioral thresholds for tone detection in common marmosets using an anticipatory licking task
M. S. Osmanski & X. Wang
Laboratory of Auditory Neurophysiology, Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, Maryland 21205, USA

3. Detection of amplitude modulated noise as an elevation cue by a rhesus macaque.
Kevin N. O’Connor, Jeffrey S. Johnson, Elizabeth Marshall, and Mitchell L. Sutter
Center for Neuroscience and the Section for Neurobiology, Physiology and Behavior, University of California, Davis, California

4. Performance of monkeys on a frequency discrimination task involving pitch direction (higher vs. lower) judgments
Deborah A. Ross and Jennifer M. Groh
Center for Cognitive Neuroscience, Department of Psychology & Neuroscience and Department of Neurobiology, Duke University, Durham, NC 27708

5. Sound Texture Perception via Synthesis
Josh H. McDermott¹, Andrew J. Oxenham², & Eero P. Simoncelli¹
¹ Center for Neural Science, New York University
² Department of Psychology, University of Minnesota

6. Neuronal responses to tones in the cochlear nucleus of the awake primate
Ryan Miller and Ramnarayan Ramachandran
Dept. Neurobiol & Anat, Wake Forest University Health Sciences, Winston Salem, NC

7. Cochlear disparity as a source of internal delay: evidence in the medial superior olive
Mitchell L. Day and Malcolm N. Semple
Center for Neural Science, New York University, New York, NY 10003

8. Developing a new vocalizing non-human primate model for cochlear implant research
Luke Johnson¹, Charles Della Santina¹² and Xiaoqin Wang¹
¹Departments of Biomedical Engineering and ²Otolaryngology-Head & Neck Surgery, School of Medicine, Johns Hopkins University, Baltimore MD 21205

9. Evaluating the neural bases for robust speech perception in noise
Jayaganesh Swaminathan and Michael G. Heinz
Purdue University, West Lafayette, IN, USA

10. Abstract Musical Knowledge Influences Auditory Encoding In The Brainstem
Marmel, Frederic; Parbery-Clark, Alexandra; Skoe, Erika; Kraus, Nina
Auditory Neuroscience Laboratory, Northwestern University (http://www.brainvolts.northwestern.edu/)

11. Brainstem correlates of speech in noise perception
Judy Song¹², Erika Skoe¹², Karen Banai², Nina Kraus¹²
¹Auditory Neuroscience Laboratory, ²Departments of Communication Sciences, ³Neurobiology and Physiology, ⁴Otolaryngology at Northwestern University, Evanston, IL 60208,
⁵Department of Communication Sciences and Disorders at University of Haifa, Haifa 31905

12. Rate and temporal analyses of stimulus-specific adaptation in inferior colliculus of rat
L. Zhao, Y. Liu, L. Feng, "B. Hong
13. Modeling cellular mechanisms underlying representations of temporal modulation in the medial geniculate body (MGB)
Cal F. Rabang and Edward L. Bartlett
Central Auditory Processing Laboratory (CAPLab), Weldon School of Biomedical Engineering, Purdue University, 206 S. Martin Jischke Drive, West Lafayette, IN 47907-2032

14. Eye-centered reference frame of auditory and visual oculomotor signals in the primate superior colliculus
Jungah Lee & Jennifer M. Groh
Center for Cognitive Neuroscience, Department of Psychology & Neuroscience and Department of Neurobiology, Duke University, Durham, NC 27708

15. The non-lemniscal auditory cortex in ferrets: corticotectal input to the superior colliculus
Victoria M. Bajo, Fernando R. Nodal, Jennifer K. Bizley, and Andrew J. King
Auditory Neuroscience Group, Department of Physiology, Anatomy and Genetics, University of Oxford, Sherrington Building, Parks Road, Oxford OX1 3PT, United Kingdom

16. Development of auditory cortical responses underlying backward masking in awake gerbils
Merri J. Rosen and Dan H. Sanes
Center for Neural Science, New York University

17. Local and large-scale organization of auditory cortex probed with in vivo Ca2+ imaging
Sharba Bandyopadhyay1,2, Shihab A. Shamma2 and Patrick O. Kanold1,2
1Department of Biology, University of Maryland, College Park
2Institute for Systems Research, University of Maryland, College Park

18. Synaptic mechanisms underlying sustained responses in auditory cortical neurons
Ben Scholl and Michael Wehr
University of Oregon

19. Up-states are rare in awake auditory cortex
Tomas Hromadka (1), Michael R DeWeese (2), and Anthony M Zador (1)
(1) Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA
(2) Department of Physics and Helen Wills Neuroscience Institute, University of California, Berkeley, CA, USA

20. Local field potentials and single unit spiking activity: Comparison of spectro-temporal tuning properties in A1
S. Atiani1, S. V. David2, N. Malaval3, S. Shamma4;1Neuroscience and Cognitive Science University of Maryland, College Park, MD;2Institute for Systems Research., University Of Maryland, College Park, MD;3National Institute for Applied Science., Lyon, France

21. Laminar dependent representation of time-varying sounds
Poppy A.C. Crum and Xiaoqin Wang
Laboratory of Auditory Neurophysiology, Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, Maryland 21025, USA

22. Intrinsic cortical processing in the primary and secondary areas of the mouse auditory cortex
Charles C. Lee and S. Murray Sherman
Department of Neurobiology, University of Chicago, Chicago, IL

23. Amplitude modulation transfer functions determining BOLD response across auditory areas in the macaque
Baumann S, Rees A, Petkov C, Sun L, Thiele A, Griffiths TD
Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UK

24. Spatial Auditory Processing in Auditory Cortex of Sleeping Marmosets
25. Time-intensity encoding of sound envelope in auditory cortex
   Yi Zhou, Xiaoqin Wang
   Laboratory of Auditory Neurophysiology, Dept of Biomedical Engineering, Johns Hopkins Univ., Baltimore, MD

26. The mammalian auditory cortex encodes information about global statistics of naturalistic sounds
   Maria N. Geffen, Taillefumier, T., Magnasco, M.O.
   Center for Studies in Physics and Biology, Rockefeller University

27. Cortical encoding of natural auditory scenes emerges through the interactions between scene structure and on-going network activity
   Chandramouli Chandrasekaran¹, Hjalmar K. Turesson¹, Charles H. Brown² and Asif A. Ghazanfar¹
   ¹Princeton University, New Jersey, USA
   ²University of South Alabama, Alabama, USA

28. Identification of the pitch system by dynamic causal modelling of human depth electrode data
   Sukhbinder Kumar¹, Will Sedley¹, Krill Nourski², Hiroto Kawasaki², Hiroyuki Oya³, John F Brugge², Karl J Friston³, Matthew A Howard III², Timothy D Griffiths¹
   ¹Auditory Group, Newcastle Univ., Newcastle upon Tyne, United Kingdom; ²Univ. of Iowa, Iowa, IA; ³Functional Imaging Laboratory, Univ. Col. London, London, United Kingdom

29. Decision- and state-related activity in primary auditory cortex (A1) of rhesus macaques performing amplitude modulation (AM) discrimination
   Mamiko Niwa, Jeffrey Johnson, Elizabeth Marshall, Kevin N. O’Connor, and Mitchell L. Sutter
   Center for Neuroscience and the Section for Neurobiology, Physiology and Behavior, University of California, Davis, California

30. Single-unit encoding of auditory and task-related events during delayed matching-to-sample in monkey dorsal temporal pole
   Chi-Wing Ng¹, Bethany Plakke¹, Ryan Opheim¹, Amy Poremba¹².
   ¹Department of Psychology, Division of Behavioral and Cognitive Neuroscience, University of Iowa, Iowa City, IA 52242, ²Neuroscience Program, University of Iowa, Iowa City, IA 52242.

31. Task-related neuronal activity in primate prefrontal cortex during an auditory delayed matching-to-sample task
   Bethany Plakke¹, Chi-Wing Ng¹, Ryan Opheim¹, and Amy Poremba¹².
   ¹Department of Psychology, Division of Behavioral and Cognitive Neuroscience, University of Iowa, Iowa City, IA 52242, ²Neuroscience Program, University of Iowa, Iowa City, IA 52242.

32. Effect of behavioral context on information encoding by local field potentials in the rostral supratemporal plane
   M. Fukushima ¹, B. Scott¹, H. Vinal¹, P. Yin², M. Mishkin¹
   ¹Lab. Neuropsychology, NIMH/NIH, Bethesda, MD; ²Univ. Maryland, College Park, MD

33. Neural activity in the superior temporal gyrus during a discrimination task reflects stimulus category
   J. Lee, J. Tsunada, Y. E. Cohen
   Otorhinolaryngology, Univ. of Pennsylvania, Philadelphia, PA

34. Noise robust representation of speech in the primary auditory cortex
   Nima Mesgarani, Stephen V. David, Jonathan B. Fritz, Shihab A. Shamma
   Institute of Systems Research, University of Maryland, College Park, MD 20742, USA

35. A generalized non-linear model of cortical encoding of natural speech
   Nadja Schinkel-Bielefeld¹, Stephen V. David², Shihab A. Shamma², Daniel A. Butts¹
36. Bilateral Auditory Cortex Lesions Impair Discrimination of Brief Speech Sounds
Univ. Texas at Dallas, Richardson, TX

37. Naturalistic detection of vocalizations in noise by a monkey: behavior and electrophysiology
Asif A. Ghazanfar and Chandramouli Chandrasekaran
Princeton University, New Jersey, USA

38. Context-dependent neural representation of vocalizations in primate ventrolateral prefrontal cortex
Allison E. Baker1, Joji Tsunada2, Selina J. Davis2, Asif A. Ghazanfar3 and Yale E. Cohen1
1Department of Psychological and Brain Sciences and Center for Cognitive Neuroscience, Dartmouth College
2Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine
3Neuroscience Institute, Department of Psychology, Princeton University

39. Vocalization-context dependent neural representation of faces in primate ventrolateral prefrontal cortex
Joji Tsunada1, Allison E. Baker2, Selina J. Davis2, Asif A. Ghazanfar3 and Yale E. Cohen1
1Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine
2Department of Psychological and Brain Sciences and Center for Cognitive Neuroscience, Dartmouth College
3Neuroscience Institute, Department of Psychology, Princeton University

40. The role of primate ventrolateral prefrontal cortex during the evaluation of emotional faces and vocalizations
M. M. Diehl, M. Diltz and L. M. Romanski
Neurobio. & Anat., Univ. of Rochester Med. Ctr., Rochester, NY

41. Comparison of face and non-face stimuli in an audio-visual discrimination task

42. MEG At The Movies: Auditory, Visual, And Audiovisual Theta-Phase Response Modulation
Huan Luo & David Poeppel
Chinese Academy of Sciences & NYU

43. Auditory theta band activity regulated by transients in the spectro-temporal structure of sounds
Yue Zhang, Nai Ding, David Poeppel
NYU & University of Maryland College Park

44. Emergent categorical representation of phonemes in the human superior temporal gyrus
Edward F. Chang, Jochem Rieger, Adeen Flinker, Keith Johnson, Nicholas M. Barbaro, Robert T. Knight
Department of Neurological Surgery, University of California, San Francisco, 505 Parnassus Ave, Room M779, San Francisco, CA 94143

45. Phonological processing in human auditory cortex
D. L. Woods*, A. Cate, T. Herron, E. W. Yund and X. J. Kang
Dept. of Neurology, UC Davis

Samira Anderson1, Bharath Chandrasekaran1, Han-Gyol Yi1, Nina Kraus1,2,3
1Department of Communication Sciences and Disorders, Northwestern University
47. Response patterns of syllable-evoked activity recorded directly from human auditory cortex
M. Steinschneider\(^1\), K. Nourski\(^2\), H. Kawasaki\(^2\), H. Oya\(^2\), and M. Howard\(^2\).
\(^1\)A. Einstein Coll. Med.\(^1\), Bronx, NY and Univ. of Iowa Coll. Med.\(^2\), Iowa City, IA.

48. Analysis of auditory bases for phonological and reading ability in a large school cohort.
Manon Grube, Freya Cooper, Sukhinder Kumar, Timothy D Griffiths
\(^\)Med. Sch., Newcastle Univ., Newcastle-upon-Tyne, United Kingdom

49. Behavior-dependent responses in marmoset frontal cortex during antiphonal calling
Cory Miller\(^1\) and Xiaoqin Wang\(^2\)
\(^1\)Cortical Systems and Behavior Laboratory, Department of Psychology, University of California, San
Diego
\(^2\)Laboratory of Auditory Neurophysiology, Department of Biomedical Engineering, Johns Hopkins
University

50. Vocal Control during Acoustic Interference in Common Marmosets
Sabyasachi Roy, Cory T. Miller, Dane Gottsch and Xiaoqin Wang
\(^\)Dept of Biomedical Engineering, Johns Hopkins University, Baltimore, MD

51. Altered auditory feedback with a biophysical model for sound production
Ana Amador (1), Jacobo D. Sitt (2), Franz Goller (3), and Gabriel B. Mindlin (2)
\(^1\)Department of Organismal Biology and Anatomy, U. Chicago, USA
\(^2\)Departamento de Fisica, FCEyN, U. Buenos Aires, Argentina
\(^3\)Department of Biology, U. Utah, USA.

52. Hearing the song in noise
R Channing Moore, Patrick R. Gill, Frédéric E. Theunissen
\(^\)UC Berkeley

53. Stimulus-dependent receptive field dynamics are influenced by extraclassical excitation and
natural stimulus statistics
David M. Schneider and Sarah M.N. Woolley
\(^\)Department of Psychology and Department of Neuroscience, Columbia University

54. Encoding properties of auditory midbrain neurons in awake and anesthetized songbirds
J. W. Schumacher\(^1\)\(^2\), D. M. Schneider\(^1\)\(^2\), S. M. N. Woolley\(^2\)
\(^1\)Doctoral Program in Neurobiology and Behavior, \(^2\)Psychology, Columbia University, New York, NY

55. Receptive Fields for Elements of Conspecific Song in the Starling Auditory Forebrain
C Daniel Meliza & Daniel Margoliash
\(^\)Department of Organismal Biology and Anatomy, University of Chicago, 1027 E 57th St, Chicago, IL 60637

56. Estrogen modulates neural coding and discrimination of auditory stimuli in female songbird
midbrain neurons
\(^*\)A. Vyas\(^1\), D. M. Schneider\(^2\), J. W. Schumacher\(^2\), S. M. N. Woolley\(^1\)
\(^*\)Psychology, \(^\)Doctoral Program in Neurobio. and Behavior, Columbia Univ., New York, NY

57. Developing a Rodent Model of Selective Auditory Attention
CX Rodgers, V Vu\(^*\), SE Kochik\(^*\), J Zhang, A Shah, A Rustagi, CQ Pham, J Murphy, T Li, T Hsu, C
Choi, MR DeWeese
\(^*\)These authors contributed equally to this work
\(^\)Helen Wills Neuroscience Institute, University of California-Berkeley

58. Attention-driven memory for task-relevant acoustic stimuli in the prefrontal cortex
Jonathan Fritz, Stephen David, Pingbo Yin, Shihab Shamma
\(^\)Institute of Systems Research, University of Maryland, College Park, MD 20742, USA
59. Effect of selective attention on gamma oscillations in the human auditory cortex
A. Bidet-Caulet\textsuperscript{1}, J. Besle\textsuperscript{1}, C. Mikyska\textsuperscript{1}, C.A. Schevon\textsuperscript{1}, G.M. McKhann\textsuperscript{5}, R.R. Goodman\textsuperscript{5}, A.D. Mehta\textsuperscript{1}, N.M. Barbaro\textsuperscript{5}, R.G. Emerson\textsuperscript{1,6}, R.T. Knight\textsuperscript{1,2}
\textsuperscript{1}Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, CA, USA
\textsuperscript{2}Department of Psychology, University of California at Berkeley, Berkeley, CA, USA
\textsuperscript{3}Columbia University, New York, NY, USA
\textsuperscript{4}Department of Neurology, Columbia University, New York, NY, USA
\textsuperscript{5}Department of Neurological Surgery, Columbia University, New York, NY, USA
\textsuperscript{6}Department of Pediatrics, Columbia University, New York, NY, USA
\textsuperscript{7}Comprehensive Epilepsy Center, Long Island Jewish Medical Center, New Hyde Park, NY, New York, NY, USA
\textsuperscript{8}Department of Neurological Surgery, University of California at San Francisco, San Francisco, CA, USA

60. Neuroplasticity during learning of an auditory working memory task in the primate lateral prefrontal cortex
Hyunsug Kang\textsuperscript{1}, Christos Constantinidis\textsuperscript{2}, Jonathan Isaac\textsuperscript{1}, Thane K. Plummer\textsuperscript{1}, Jonathan M. Crawford\textsuperscript{1}, David T. Blake\textsuperscript{1}
\textsuperscript{1}Brain and Behavior Discovery Institute, Medical College of Georgia, Augusta, GA
\textsuperscript{2}Department of Neurobiology & Anatomy, Wake Forest University School of Medicine, Winston-Salem, NC

K.M. Bieszczad\textsuperscript{*} & N.M. Weinberger.
Center for the Neurobiology of Learning and Memory and Dept. of Neurobiology and Behavior, University of California, Irvine, CA.

62. Behavioural specialisation for listening associated with structural changes in the ascending auditory pathway
Katharina von Kriegstein\textsuperscript{*1,2}, Lauren Stewart\textsuperscript{\textsuperscript{3}}, Sukhinder Kumar\textsuperscript{4}, Bogdan Draganski\textsuperscript{1}, Brian CJ Moore\textsuperscript{5}, Brian Capleton\textsuperscript{6}, Timothy D Griffiths\textsuperscript{1,7}
*contributed equally to the work
\textsuperscript{1}Max-Planck Inst. For Human Cognitive and Brain Sci., Leipzig, Germany; \textsuperscript{2}Berlin Sch. of Mind and Brain, Berlin, Germany; \textsuperscript{3}Dept. of Psychology, Goldsmiths, Univ. of London, London, United Kingdom; \textsuperscript{4}Univ. of Newcastle, Newcastle, United Kingdom; \textsuperscript{5}Univ. of Cambridge, Cambridge, United Kingdom; \textsuperscript{6}Inst. of Musical Instrument Technol., Croydon, United Kingdom; \textsuperscript{7}Wellcome Trust Ctr. for Neuroimaging, London, United Kingdom

63. Expression of neuroplasticity in primary auditory cortex is independent of neural activity during learning
Brain and Behavior Discovery Institute. Medical College of Georgia.

64. Plastic changes in the anterior and dorsal auditory fields induced by discrimination learning of synthetic vowels in rats
M. Kudoh, G. Ogawa
Dept Physiol, Teikyo Univ Sch Med, Tokyo, Japan

65. Plasticity in pup call evoked cortical inhibition reflects differences in maternal experience
F. G. Lin\textsuperscript{1}, E. E. Galindo-Leon\textsuperscript{2}, J. A. Miranda\textsuperscript{2}, R. C. Liu\textsuperscript{2}
\textsuperscript{1}Georgia Inst. of Technol., Atlanta, GA; \textsuperscript{2}Biol., Emory Univ., Atlanta, GA

66. Maternal context influences the timing of neural responses in the early auditory system
Jason A. Miranda, Kathryn N. Shepard and Robert C. Liu
Biology Department, Emory University

67. The effects of musical training on subcortical processing of a missing fundamental piano melody
Dana Strait1-2, Nina Kraus2-5, Alexandra Parbery-Clark2-3 & Richard Ashley1,6
1Beinen School of Music, 2Auditory Neuroscience Laboratory (www.brainvolts.northwestern.edu),
3Departments of Communication Sciences; 4Neurobiology & Physiology; 5Otolaryngology, 6Program of
Cognitive Science, Northwestern University

69. Biological bases for the musician advantage for speech-in-noise
Parbery-Clark, Alexandra, Skoe, Erika and Kraus, Nina
Auditory Neuroscience Laboratory, www.brainvolts.northwestern.edu, Departments of Communication
Sciences, Neurobiology and Physiology, Otolaryngology, Northwestern University, Evanston, Il 60208,
USA

70. Effect of acoustic trauma on auditory cortical responses to artificial and natural communication
sounds in awake guinea-pigs
Jean-Marc, Edeline, Maud, Guédin and Huetz, Chloé
NAMC, UMR8620 CNRS and University Paris-Sud, 91405 Orsay cedex

71. Reversing Pathological Neural Plasticity to Treat Tinnitus
N.D. Engineer1, J.R. Riley2, J.D. Seale2, J.A. Shetake2, S. Sudanagunta S2, W. Rosellini1, M.P. Kilgard2
1MicroTransponder, Inc. 2 The University of Texas at Dallas, Richardson, TX

72. Grey-matter size differences in hearing loss and tinnitus
F. T. Husain1,2, R. Medina1, N. M. Pajor3, B. Horwitz4;
1Univ. Illinois, Champaign, IL; 2Brain Imaging and Modeling Section, Natl. Inst. on Deafness and Other
Communication Disorders, Bethesda, MD