

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 Bandyopadhyay^{1,2}, Shihab A. Shamma² and Patrick O. Kanold^{1,2}
¹*Department of Biology, University of Maryland, College Park*
²*Institute 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 Xiaoqin 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 Poremba^{1,2}.
¹*Department of Psychology, Division of Behavioral and Cognitive Neuroscience, University of Iowa, Iowa City, IA 52242*, ²*Neuroscience 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
¹*Department of Psychological and Brain Sciences and Center for Cognitive Neuroscience, Dartmouth College*
²*Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine*
³*Neuroscience 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. Steinschneider^{*1}, 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
¹*Brain and Behavior Discovery Institute, Medical College of Georgia, Augusta, GA*
²*Department 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 21025, 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 21025, 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 Santina^{1,2} and Xiaoqin Wang¹
¹*Departments of Biomedical Engineering and* ²*Otolaryngology-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 Song^{a,b}, Erika Skoe^{a,b}, Karen Banai^e, Nina Kraus^{a-d}
^a*Auditory Neuroscience Laboratory,* ^b*Departments of Communication Sciences,* ^c*Neurobiology and Physiology,* ^d*Otolaryngology at Northwestern University, Evanston, IL 60208.*
^e*Department 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

Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing, 100084, China

- 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 Bandyopadhyay^{1,2}, Shihab A. Shamma² and Patrick O. Kanold^{1,2}
¹*Department of Biology, University of Maryland, College Park*
²*Institute 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. Shamma²;
¹*Neuroscience and Cognitive Science University of Maryland, College Park, MD;*
²*Institute for Systems Research., University Of Maryland, College Park, MD;*
³*National Institute for Applied Science., Lyon, France*
- 21. Laminal 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**

Evan D. Remington and Xiaoqin Wang
Laboratory of Auditory Neurophysiology, Department of Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, Maryland 21025, USA

- 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
¹*Princeton University, New Jersey, USA*
²*University of South Alabama, Alabama, USA*
- 28. Identification of the pitch system by dynamic causal modelling of human depth electrode data**
Sukhbinder Kumar¹, Will Sedley¹, Kirill Nourski¹, Hiroto Kawasaki², Hiroyuki Oya², John F Brugge², Karl J Friston³, Matthew A Howard III², Timothy D Griffiths¹
¹*Auditory Group, Newcastle Univ., Newcastle upon Tyne, United Kingdom*; ²*Univ. of Iowa, Iowa, IA*; ³*Functional 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 Poremba^{1,2}.
¹*Department of Psychology, Division of Behavioral and Cognitive Neuroscience, University of Iowa, Iowa City, IA 52242*, ²*Neuroscience 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 Poremba^{1,2}.
¹*Department of Psychology, Division of Behavioral and Cognitive Neuroscience, University of Iowa, Iowa City, IA 52242*, ²*Neuroscience 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. Fukushima¹, B. Scott¹, H. Vinal¹, P. Yin², M. Mishkin¹
¹*Lab. Neuropsychology, NIMH/NIH, Bethesda, MD*; ²*Univ. 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

¹*Dept. of Biology and Program in Neuroscience and Cognitive Science, University of Maryland, College Park, MD 20742, USA*

²*Institute of Systems Research, University of Maryland, College Park, MD 20742, USA*

- 36. Bilateral Auditory Cortex Lesions Impair Discrimination of Brief Speech Sounds**
B. A. Porter, T. R. Rosenthal, J. Wolf, A. C. Reed, W. A. Vrana, E. M. Renfroe, S. K. Ram, M. P. Kilgard
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. Cohen²
¹*Department of Psychological and Brain Sciences and Center for Cognitive Neuroscience, Dartmouth College*
²*Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine*
³*Neuroscience 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. Davis¹, Asif A. Ghazanfar³ and Yale E. Cohen¹
¹*Department of Otorhinolaryngology: Head and Neck Surgery, University of Pennsylvania School of Medicine*
²*Department of Psychological and Brain Sciences and Center for Cognitive Neuroscience, Dartmouth College*
³*Neuroscience 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**
*J. Hwang¹, L. M. Romanski²;
¹*Brain & Cognitive Sci., Univ. Rochester, Rochester, NY;*
²*Neurobio. & Anat., Univ. of Rochester Med. Ctr., Rochester, NY*
- 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
- 46. Cortical Evoked Auditory Processing: Index of Neural Efficiency in Speech-in-Noise Perception**
Samira Anderson¹, Bharath Chandrasekaran¹, Han-Gyol Yi¹, Nina Kraus^{1,2,3}
¹*Department of Communication Sciences and Disorders, Northwestern University*

²*Department of Neurobiology and Physiology, Northwestern University*

³*Department of Otolaryngology, Northwestern University*

- 47. Response patterns of syllable-evoked activity recorded directly from human auditory cortex**
M. Steinschneider^{*1}, 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.*
- 48. Analysis of auditory bases for phonological and reading ability in a large school cohort.**
Manon Grube, Freya Cooper, Sukhbinder 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 Miller¹ and Xiaoqin Wang²
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. Woolley²
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. Vyas¹, D. M. Schneider², J. W. Schumacher², S. M. N. Woolley¹
¹*Psychology,* ²*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-Caulet¹, J. Besle³, C. Mikyska¹, C.A. Schevon⁴, G.M. McKhann⁵, R.R. Goodman⁵, A.D. Mehta⁷, N.M. Barbaro⁸, R.G. Emerson^{4,6}, R.T. Knight^{1,2}
¹*Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, CA, USA*
²*Department of Psychology, University of California at Berkeley, Berkeley, CA, USA*
³*Columbia University, New York, NY, USA*
⁴*Department of Neurology, Columbia University, New York, NY, USA*
⁵*Department of Neurological Surgery, Columbia University, New York, NY, USA*
⁶*Department of Pediatrics, Columbia University, New York, NY, USA*
⁷*Comprehensive Epilepsy Center, Long Island Jewish Medical Center, New HydePark, NY, New York, NY, USA*
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 Kang¹, Christos Constantinidis², Jonathan Isaac¹, Thane K. Plummer¹, Jonathan M. Crawford¹, David T. Blake¹
¹*Brain and Behavior Discovery Institute, Medical College of Georgia, Augusta, GA*
²*Department of Neurobiology & Anatomy, Wake Forest University School of Medicine, Winston-Salem, NC*
- 61. 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.
- 62. Behavioural specialisation for listening associated with structural changes in the ascending auditory pathway**
Katharina von Kriegstein*^{1,2}, Lauren Stewart*³, Sukhbinder Kumar⁴, Bogdan Draganski¹, Brian CJ Moore⁵, Brian Capleton⁶, Timothy D Griffiths^{4,7}
*contributed equally to the work
¹*Max-Planck Inst. For Human Cognitive and Brain Sci., Leipzig, Germany;* ²*Berlin Sch. of Mind and Brain, Berlin, Germany;* ³*Dept. of Psychology, Goldsmiths, Univ. of London, London, United Kingdom;* ⁴*Univ. of Newcastle, Newcastle, United Kingdom;* ⁵*Univ. of Cambridge, Cambridge, United Kingdom;* ⁶*Inst. of Musical Instrument Technol., Croydon, United Kingdom;* ⁷*Wellcome Trust Ctr. for Neuroimaging, London, United Kingdom*
- 63. Expression of neuroplasticity in primary auditory cortex is independent of neural activity during learning**
E. P. Carpenter-Hyland, T. K. Plummer, A. Vazdarjanova, D. T. Blake.
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. Lin¹, E. E. Galindo-Leon², J. A. Miranda², R. C. Liu²;
¹*Georgia Inst. of Technol., Atlanta, GA;* 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**

Erika Skoe^{1,2}, Catherine A. Fábán^{1,2}, Nina Kraus^{1,2,3}
*Auditory Neuroscience Laboratory*¹ www.brainvolts.northwestern.edu, *Departments of Communication Sciences*²; *Neurobiology & Physiology*³; *Otolaryngology*³; *Northwestern University, Evanston IL*

68. Musical Experience Shapes Top-down Auditory Mechanisms: Evidence from Masking and Auditory Attention Performance

Dana Strait^{1,2}, Nina Kraus^{2,5}, Alexandra Parbery-Clark^{2,3} & Richard Ashley^{1,6}
¹*Beinen School of Music*, ²*Auditory Neuroscience Laboratory* (www.brainvolts.northwestern.edu),
³*Departments of Communication Sciences*; ⁴*Neurobiology & Physiology*; ⁵*Otolaryngology*, ⁶*Program 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
¹*MicroTransponder, Inc.* ²*The University of Texas at Dallas, Richardson, TX*

72. Grey-matter size differences in hearing loss and tinnitus

F. T. Husain^{1,2}, R. Medina¹, N. M. Pajor², B. Horwitz²;
¹*Univ. Illinois, Champaign, IL*; ²*Brain Imaging and Modeling Section, Natl. Inst. on Deafness and Other Communication Disorders, Bethesda, MD*