

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

Friday, November 11, 2011
8:30 AM – 6:00 PM

Constitution Ballroom, Grand Hyatt Washington, 1000 H Street NW, Washington, DC

8:30 – 9:00 Registration and Poster set-up for Morning Poster Session

9:00 – 9:05 Introduction (Liz Romanski)

9:05 – 10:00 **Keynote Lecture: Paula Tallal, Ph.D.**, Board of Governors Professor of Neuroscience, Co-Director Center for Molecular and Behavioral Neuroscience, Rutgers University

“It’s About Time: In the Perception of Speech, Time is of the Essence”

10:00 – 11:30 **Morning Poster Session** and Coffee Break

Slide Session I (Chairs: Robert Liu & Tim Griffiths)

11:30 – 11:45 **Auditory working memory in rhesus monkeys**

B.H. Scott, P. Yin, M. Mishkin

11:45 – 12:00 **Invariant cortical representation of attended speaker in multitalker speech perception**

N. Mesgarani and E. Chang

12:00 – 12:15 **A study on rat vocal interactions and syntax**

D.A. Laplagne, M. Elias Costa, A.M. Widmer, M. Sigman, M.N. Geffen, Y. Sirotin

12:15 – 12:30 **Comparison of task related plasticity in ferret primary and secondary auditory cortex**

J.N. Fritz, S. Davis, S. Atianio, M. Locastro, D. Elgueda, S. Radtke-Schuller, S.A. Shamma

12:30 – 12:45 **How the auditory cortex drives decisions**

P. Znamenskiy and A.M. Zador

12:45 – 2:00 Lunch on your own (morning posters can remain up through lunch)

2:00 – 2:15 Poster set-up for Afternoon Poster Session

Slide Session II (Chairs: Jennifer Linden & Mitch Sutter)

2:15 – 2:30 **Increasing specificity for complex acoustic stimuli towards the temporal pole of the cat cerebrum**

S.G. Lomber and A.J. McMillan

2:30 – 2:45 **Spectro-temporal neural coding of speech in human auditory cortex**

N. Ding and J.Z. Simon

2:45 – 3:00 **Single-unit and population activity of A1 during auditory recognition memory performance in primates**

A Poremba, J. Bigelow, R. Opheim

3:00 – 3:15 **Dissociating representation of spectrotemporal features from perceived unpleasantness of aversive sound stimuli in the amygdala: a human fMRI study**

S. Kumar, K. von Kriegstein, T. Griffiths

3:15 – 3:30 **Cross-modal context-sensitive responses to combined face-vocalization stimuli in ventrolateral prefrontal cortex of non-human primates**

J. Hwang and L.M. Romanski

3:30 – 3:45 **Neural correlates of pitch discrimination during passive and active listening**

J.K. Bizley, K.M. Walker, F.R. Nodal, A.J. King, J.W. Schnupp

3:45 – 4:00 **Behavioural and functional imaging analysis of ‘artificial-grammar’ sequence learning in Rhesus macaques**

B. Wilson, M.G. Collison, H. Slater, D.M. Hunter, K. Smith, W. Marslen-Wilson, C.I. Petkov

4:00 – 4:10 Announcements and Travel Awards (Yale Cohen, Xiaoqin Wang)

4:10 – 6:00 **Afternoon Poster Session** and Refreshments

Morning Posters:

1. **Repetition suppression for pitch using fMRI**, Baumann, S.; Overath, T.; Kumar, S.; Griffiths, T.D.
2. **Prototype-based cerebral representation of voice identity**, Belin, P.; Latinus, M.
3. **Biasing the content of hippocampal replay during sleep using task-related sounds**, Bendor, D.; Wilson, M.
4. **Psychophysical correlates of co-modulation masking release in a macaque**, Bennur, S.; Cohen, Y.E.
5. **Primary sensory cortex predicts the utility of specific sensory information in a behavioral learning set by enhancing the cortical representation of the critical signal**, Bieszczad, K.M.; Weinberger, N.M.
6. **Auditory recognition memory correlates and stimulus-selectivity of local field potentials in primate lateral prefrontal cortex**, Bigelow, J.; Plakke, B.; Poremba, A.
7. **Task demands and motivation affect neuronal activity in the auditory cortex of nonhuman primates**, Brosch, M.; Babanin, M.; Selezneva, E.; Huang, Y.; Scheich, H.
8. **Golgi-architecture of the subcortical auditory structures in the Mongolian gerbil**, Budinger, E.; Scheich, H.; Mylius, J.
9. **Arc in sensory cortex is necessary for learning and physiological plasticity**, Carpenter-Hylan, E.; Vazdarjanova, A.; Blake, D.
10. **Neuronal activation pattern across cortical laminae in cat primary auditory cortex**, Carrasco, A.; Brown, T.A.; Lomber, S.G.
11. **Encoding of conspecific vocalizations in the rat auditory cortex**, Carruthers, I.M.; Menko, J.G.; Laplagne, D.A.; Geffen, M.N.
12. **Reference frame of visual and auditory signals in the primate frontal eye fields**, Caruso, V.; Pages, D.; Groh, J.M.
13. **Differential sensitivity to appearing and disappearing objects in complex acoustic scenes**, Chait, M.; Cervantes-Constantino, F.; Kashino, M.
14. **Dynamic faces speed up vocal processing in the auditory cortex of behaving monkeys**, Chandrasekaran, C.; Lemus, L.; Ghazanfar, A.A.
15. **Stimulation of the amygdala facilitates cortical memory traces by inducing dual forms of representation plasticity**, Chavez, C.M.; McGuagh, J.L.; Weinberger, N.M.
16. **Automatic phoneme categorization in the dorsal auditory pathway**, Chevillet, M.A.; Jiang, X.; Rauschecker, J.P.; Riesenhuber, M.
17. **Stimulus-specific adaptation measured in the guinea pig using magnetoencephalography**, Christianson, G.B.; Chait, M.; deCheveigné, A.; Linden, J.F.
18. **Neural correlates of acoustic variability in conspecific vocalizations**, Christison-Lagay, K.L.; Bennur, S.; Cohen, Y.E.
19. **The basal ganglia in perceptual timing: timing performance in Multiple System Atrophy and Huntington's Disease**, Cope, T.E.; Grube, M.; Singh, B.; Burn, D.J.; Griffiths, T.D.
20. **Modeling of harmonic sensitive neurons in the primary auditory cortex of marmoset monkeys**, Dekel, E.; Feng, L.; Wang, X.; Zhang, K.
21. **Effects of congruent and incongruent face and vocalization pairs on neurons in ventral prefrontal cortex**, Diehl, M.M.; Diltz, M.D.; Romanski, L.M.
22. **Intracranial neural correlates of auditory perceptual awareness**, Dykstra, A.R.; Halgren, E.; Gutschalk, A.; Golby, A.J.; Eskandar, E.; Cash, S.S.
23. **Spike-timing reliability and cross correlations are enhanced by a partial blockage of GABA_A inhibitions in the guinea pig auditory cortex**, Edeline, J-M.; Gaucher, Q.; Gourévitch, B.; Huetz, C.
24. **Population representation of Shepard tones in the auditory cortex of the awake ferret**, Englitz, B.; Yin, P.; Akram, S.; David, S.V.; Chambers, C.; Pressnitzer, D.; Depireux, D.; Fritz, J.B.; Shamma, S.A.
25. **Neural coding of harmonic complex tones in auditory cortex of awake marmosets**, Feng, L.; Wang, X.
26. **Temporal dynamics of the tonotopic maps in awake primates**, Fukushima, M.; Saunders, R.C.; Leopold, D.A.; Mishkin, M.; Averbeck, B.B.
27. **Neuronal adaptation in the awake rat auditory cortex depends on the spectrotemporal features of structured sound stimuli**, Gaese, B.H.; Schmale, K.; Klein, C.
28. **Modulation of slow oscillations to the sound coding in auditory thalamus**, Gao, L.; He, J.
29. **Synaptic inputs to large tectothalamic projection neurons of the mouse inferior colliculus**, Geis, H-R.; Borst, G.G.
30. **Structural correlates of auditory and phonological skill in school children**, Grube, M.; Kumar, S.; Cooper, F.; Griffiths, T.D.
31. **Noise-invariant representation of speaker identity in human auditory cortex**, Hausfeld, L.; DeMartino, F.; Bonte, M.; Formisano, E.

32. **Crossmodal thalamocortical connections of the primary auditory, somatosensory and visual cortex in the Mongolian gerbil**, Henschke, J.; Scheich, H.; Budinger, E.
33. **Intracellular correlates of stimulus-specific adaptation**, Hershenhoren, I.; Taaseh, N.; Yaron, A.; Nelken, I.
34. **Frequency tuning in mouse auditory cortex depends on the sequencing of probe tones**, Hildebrandt, J.K.; Anderson, L.A.; Sahani, M.; Linden, J.F.
35. **Relationships among speech-evoked cortical oscillations, speech-evoked brainstem responses, and reading-related skills in children**, Hornickel, J.; Touny, M.; Escobedo Quiroz, R.; Kraus, N.
36. **Neural correlates of rapid changes in sound categorization**, Jaramillo, S.; Znamenskiy, P.; Zador, A.M.
37. **Auditory object recognition using sparse spike codes and network dynamics**, Jin, D.Z.; Schafer, P.
38. **Comparison between single neuron responses to cochlear implant and acoustic stimulation in auditory cortex of awake primate**, Johnson, L.; Della Santina, C.; Wang, X.
39. **The segregation of simultaneous broadband sources in elevation using envelope cues: behavior and modeling**, Johnson, J.S.; O'Conner, K.N.; Sutter, M.
40. **Hearing-impairment in adult ferrets induces partial crossmodal conversion of core auditory cortex**, Keniston, L.; Allman, B.; Meredith, M.A.
41. **Harmonic preference in the lateral belt of rhesus monkey auditory cortex**, Kikuchi, Y.; Horwitz, B.; Mishkin, M.; Rauschecker, J.P.
42. **Directing cortical plasticity to understand and repair the central auditory system**, Kilgard, M.
43. **Subcortical representation of sound is enhanced in bilinguals**, Krizman, J.; Marian, S.A.; Skoe, E.; Kraus, N.
44. **Population analysis reveals specialization for "what" processing in early rostral areas of macaque auditory cortex**, Kusmierek, P.; Ortiz, M.; Rauschecker, J.P.
45. **Role of pup experience and hormones on auditory system plasticity in the maternal context**, Lin, F.G.; Miranda, J.A.; Galindo-Leon, E.E.; Shepard, K.N.; Ivanova, T.N.; Liu, R.C.
46. **Neural deficits in auditory temporal processing in auditory thalamus of ectopic BXSb/MpJ mice**, Linden, J.F.; Anderson, L.A.

Afternoon Posters:

1. **Psychophysical behavior during an auditory frequency contour discrimination task**, Liu, A.; Tsunada, J.; Gold, J.; Cohen, Y.E.
2. **Discrimination of acoustic sequences in songbird auditory forebrain**, Lu, K.; Ziv; Vicario
3. **Factors accounting for variation in the degree of contralateral preference in human auditory cortical processing of binaural cues: a functional magnetic resonance imaging study**, McLaughlin, S.A.
4. **Context-specific responses in primate prefrontal cortex neurons during natural behavior: antiphonal calling**, Miller, C.T.; Thomas, A.; Morill, R.
5. **Tonotopic map of human inferior colliculus unraveled by functional MRI at 7T**, Moerel, M.; De Martino, F.; Ugurbil, K.; van de Moortele, P-F.; Formisano, E.; Yacoub, E.
6. **Inclusion or exclusion: encoding concurrent acoustic events in auditory cortex**, Zhou, Y.; Wang, X.
7. **Activity correlated to animals' decision in primary auditory cortex (A1)**, Niwa, M.; O'Connor, K.N.; Johnson, J.; Sutter, M.L.
8. **Regions of human auditory cortex exhibit pitch-selective responses across a wide variety of sounds**, Norman-Haignere, S.; McDermott, J.; Fedorenko, E.; Kanwisher, N.
9. **Spectral contrast sensitivity of primary auditory cortical neurons: effects of bandwidth and ripple frequency**, O'Conner, K.N.; Yin, P.; Petkov, C.I.; Sutter, M.L.
10. **Synaptic inputs to inferior colliculus (IC) neurons underlying coding of interaural level differences in mouse**, Ono, M.; Oliver, D.
11. **Cochleotopic mapping of macaque auditory cortex with functional magnetic resonance imaging at 3 Tesla**, Ortiz, M.; Artchakov, D.A.; Dewitt, I.; Kusmierek, P.; Cui, D.; Vanmeter, J.; Rauschecker, J.P.
12. **Dual mechanisms for processing pitch in marmosets (Callithrix jacchus)**, Osmanski, M.S.; Bendor, D.A.; Wang, X.
13. **Sensitivity to temporal structure in the human auditory system**, Overath, T.; McDermott, J.H.; Zarate, J.M.; Poeppel, D.
14. **Cochleotopic organization of human Heschl's gyrus as defined by intracranial gamma-band responses**, Oya, H.; Nourski, K.V.; Kawasaki, H.; Brugge, J.F.; Reale, R.A.; Griffiths, T.D.; Steinschneider, M.; Howard, M.A. III.
15. **Phonetic encoding by intracranial signals in human auditory cortex**, Pasley, B.N.; Crone, N.E.; Knight, R.T.; Chang, E.F.
16. **Spectral and temporal processing of 'vocalized' communication signals in the monkey brain**, Petkov, C.I.; Obleser, J.

17. **Sensitivity for sound-movement direction in the macaque auditory cortex**, Poirier, C.; Baumann, S.; Petkov, C.I.; Rees, A.; Thiele, A.; Griffiths, T.D.
18. **Modeling the influence of inhibition in shaping temporal coding in the medial geniculate body (MGB)**, Rabang, C.F.; Bartlett, E.L.
19. **Spectral dependence of contrast gain control**, Rabinowitz, N.C.; Willmore, B.D.B.; Schnupp, J.W.H.; King, A.J.
20. **Effects of silencing parvalbumin-positive interneurons on tone-evoked responses in auditory cortex in vivo**, Reid, A.; Hromadka, T.; Zador, A.M.
21. **Temporal integration of faces and vocalizations in the ventrolateral prefrontal cortex of non-human primates**, Romanski, L.M.; Hwang, J.
22. **Adaptation of neuronal responses to repeated tones in auditory cortex of awake freely moving mice implanted with tetrode arrays**, Rutledge, M.T.; O'Keefe, J.; Linden, J.F.
23. **State-dependent interactions in auditory thalamocortical network**, Sakata, S.
24. **Neural coding of vocalizations in auditory scenes transforms along the auditory pathway**, Schneider, D.M.; Woolley, S.M.N.
25. **Phonological working memory and FOXP2**, Schulze, K.; Vargha-Khadem, F.; Mishkin, M.
26. **Subcortical connections of the supratemporal plane and rostral superior temporal gyrus in macaque monkeys**, Scott, B.H.; Yin, P.; Mishkin, M.
27. **Comparison of invasive depth electrode and magnetoencephalographic virtual electrode recordings of induced gamma responses to pitch**, Sedley, W.; Teki, S.; Kumar, S.; Overath, T.; Barnes, G.; Griffiths, T.
28. **Change of frequency tuning underlies stimulus-specific adaptation in the inferior colliculus of rat**, Shen, L.; Zhao, L.; Hong, B.
29. **Brainstem correlates of pattern learning**, Skoe, E.; Spitzer, E.; Kraus, N.
30. **Linear and nonlinear spectral processing underlying auditory spatial tuning in nontonopic regions of the inferior colliculus**, Slee, S.
31. **Functional magnetic resonance imaging of binaural cues in human auditory cortex: nonmonotonic response tuning to interaural level difference**, Stecker, G.C.; McLaughlin, S.A.
32. **Current-source density and multiunit analysis across layers of primary auditory cortex following systemic salicylate administration in the rat**, Stolzberg, D.; Salvi, R.; Allman, B.
33. **Using optimal experimental design for capturing parameters of neural networks in the inferior colliculus of the common marmosets**, Tam, W.; Dekel, E.; Dimattina, C.; Young, E.D.; Zhang, K.
34. **Auditory figure-ground segregation using a complex stochastic stimulus**, Teki, S.; Chait, M.; Williams, D.; Siddiq, A.; Barascud, N.; Kumar, S.; Shamma, S.A.; Griffiths, T.D.
35. **Altered perception after noise exposure during development**, Teng, C-L.; Strickland, K.; Block, E.; Penn, R.; Gastrell, P.; Patel, B.; Park, S.; Gaskins, G.; Anderson, L.; Baden, J.
36. **Social recognition during dynamic vocal interactions: antiphonal calling in common marmosets**, Thomas, A.W.; Miller, C.T.
37. **Differential representation of speech sound categories between cell classes in the primate superior temporal gyrus**, Tsunada, J.; Lee, J.H.; Cohen, Y.E.
38. **Postnatal development of the auditory colliculo-thalamic inhibitory synapse**, Venkataraman, Y.; Bartlett, E.L.
39. **Multiplexed and robust representations of sound features in auditory cortex**, Walker, K.M.; Bizley, J.K.; Schnupp, J.W.H.; King, A.J.
40. **Auditory thalamic neurons show nonlinear sensitivity to stimulus context**, Williamson, R.S.; Anderson, L.A.; Christianson, G.B.; Sahani, M.; Linden, J.F.
41. **Tonotopic organization of the human lateral superior temporal gyrus: basic response patterns**, Nourski, K.V.; Steinschneider, M.; Oya, H.; Kawasaki, H.; Howard, M.A.
42. **Tonotopic organization of the human lateral superior temporal gyrus: implications for complex sound processing**, Steinschneider, M.; Nourski, K.V.; Oya, H.; Kawasaki, H.; Howard, M.A.
43. **Changing microcircuits in the subplate of the neonatal cortex**, Viswanathan, S.; Kao, J.P.Y.; Kanold, P.O.
44. **Human auditory cortex activations to phoneme and nonphoneme vowels during discrimination and memory tasks**, Rinne, T.; Harinen, K.
45. **Behavioral state modulates accuracy of stimulus reconstruction from single-trial neural activity in auditory cortex**, David, S.; Englitz, B.; Fritz, J.B.; Shamma, S.A.