Advances and Perspectives in Auditory Neurophysiology (APAN)
Sponsored by Tucker-Davis Technologies and NIDCD
Marriott Marquis, Washington, DC
Friday, November 14, 2014
8:00 AM – 6:30 PM

8:00 – 9:00  Registration and Poster set-up
9:00 – 9:05  Opening Remarks (Robert C. Liu)

**Keynote Lecture**
9:05 – 10:00  Christoph E. Schreiner, UCSF

*What happened on the way to the forum: Traffic maps from auditory midbrain to forebrain*

10:00 – 10:05  NIDCD Announcements, Christopher Platt

**Poster Teaser Session I (Chairs: Robert Liu and Chris Petkov)**
10:05 – 10:25  Five 3-minute Teasers

Learning-related neuronal circuit dynamics in mouse auditory cortex investigated by chronic two-photon calcium imaging (40), *Balazs Laurenczy, Fritjof Helmchen, Henry Lütcke*

Neural correlates of auditory-tactile integration in meter perception: an EEG study (66), *Juan Huang, Tianxu Wu, Steven Hsiao, Xiaoqin Wang*

Neural encoding of noisy vocalizations in primary auditory cortex of the marmoset monkey (64), *Ruiye Ni, Noah M. Ledbetter, Jeffrey R. Gamble, David A. Bender, Dennis L. Barbour*

Modulation of core auditory cortex putative pyramidal neuron responses by vocalization categories depends on behavioral relevance (33), *Kathryn N. Shepard, Kelly Chong, Frank G. Lin, Charles Zhao, Robert C. Liu*

Relative contributions of the auditory and prefrontal cortices to auditory perceptual decision-making (17), *Joji Tsunoda, Andrew S. Liu, Joshua I. Gold, Yale E. Cohen*

10:25 – 11:25  Morning Poster Session and Coffee Break

**Slide Session I (Chairs: Jennifer Bizley and Bo Hong)**
11:30 – 11:45  Subcortical neuronal correlates of behavior during detection of signals in noise by nonhuman primates, *Ramnarayan Ramachandran, Margit Dylla, Peter Bohlen*

11:45 – 12:00  Thalamic encoding of dynamic audiovisual signals in the actively foraging mouse, *Ross S. Williamson, Kenneth E. Hancock, Barbara G. Shinn-Cunningham, Daniel B. Polley*

12:00 – 12:15  Complementary mechanisms contribute to the developmental plasticity of spatial hearing, *Peter Keating, Johannes C Dahmen, Andrew J King*

12:30 – 2:00  **Lunch** on your own (posters remain up through entire meeting). Check APAN website for options.

**Slide Session II** (Chairs: Dan Polley and Heather Read)

2:15 – 2:30  **Oxytocin receptors in left auditory cortex enable learned social behavior,** *Bianca J. Marlin, Mariela Mitre, James A. D’amour, Moses V. Chao, Robert C. Froemke*

2:30 – 2:45  **Responses to natural sounds reveal the functional organization of human auditory cortex,** *Samuel Norman-Haignere, Josh McDermott, Nancy Kanwisher*

2:45 – 3:00  **Cortical inhibition regulates frequency discrimination acuity and specialization of emotional learning,** *Mark Aizenberg, Laetitia Mwilambwe-Tshilobo, Maria Geffen*

**Young Investigator Spotlight**

3:00 – 3:30  **Jonas Obleser, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig**

  *The Listening Brain: Acoustic challenges and adaptive mechanisms*

**Poster Teaser Session II** (Chairs: Dan Polley and Heather Read)

3:30 – 3:45  **Four 3-minute Teasers**

**Specialized auditory temporal processing in the theta and gamma bands revealed by priming (96),** *Xiangbin Teng, David Poeppel*

**Cortical feedback modulates adaptive gain control in the midbrain (80),** *Charles-Henri P. Vila, Ross S. Williamson, Daniel B. Polley*

**Neural codes for pitch perception in the actively- and passively-listening state (100),** *Kerry M.M. Walker, Jennifer K. Bizley, Jan W.H. Schnupp, Fernando Nodal, Andrew J. King*

**A preparation for optogenetic photostimulation in marmoset cortex (39),** *Matthew MacDougall, Shanna Coop, Jude Mitchell, Cory Miller*

3:45 – 6:20  **Afternoon Poster Session** and Prepaid Bar

6:20 – 6:30  **Travel Awards and Other Announcements** (Yale Cohen, Liz Romanski and Xiaoqin Wang)
List of Posters:

1. Auditory-evoked unit responses of large GABAergic neurons in the inferior colliculus, Tetsufumi Ito
2. Multisensory context portends object memory, Antonia Thelen, Pawel J. Matusz, Micah M. Murray
3. Neural oscillatory correlates of detected concurrent spectrotemporal regularities in acoustic stimuli, Adam M. Gifford, Michael J. Kahana, Yale E. Cohen
4. Neural and behavioral correlates of auditory scene analysis, Kate L. Christison-Lagin, Yale E. Cohen
5. Sound response properties of the optogenetically identified GABAergic neurons in the inferior colliculus (IC) of mouse, Deborah C. Bishop, Douglas L. Oliver
7. Multisensory temporal processing is dependent upon stimulus intensity, Aaron R. Nidiffer, Qing Qing Zheng, Mark T. Wallace
8. Visual influences in cat auditory cortex are lamina-specific, Juliane Krueger Fister, LeAnne R. Kurela, Aaron R. Nidiffer, Troy A. Hackett, Mark T. Wallace
9. Examining the role of the serotonergic system in multisensory function, LeAnne R. Kurela, Juliane Krueger-Fister, Mark T. Wallace
10. Local field potential activity in rostral superior temporal cortex during auditory short-term memory, C.R. Camalier, B.H. Scott, P. Yin, M. Mishkin
11. Neural entrainment is less responsive to attentional demands in older listeners, Molly J. Henry, Bjoern Herrmann, Jonas Olesler
12. Population code for sound localization in the barn owl, Fanny Cazettes, Brian J. Fischer, Jose L. Pena
13. Neural amplitude fluctuations in multiple frequency bands predict auditory perception in a rhythmically variable context, Björn Herrmann, Molly J. Henry, Saskia Haegens, Jonas Olesler
16. An evolutionary origin for spatial hearing: by combining vestibular processing with somatosensory localization, the optic-tectum could localize sounds, Mark S. Riggle
17. Relative contributions of the auditory and prefrontal cortices to auditory perceptual decision-making, Joji Tsunada, Andrew S. Liu, Joshua I. Gold, Yale E. Cohen
18. Task-dependent modulations of the fMRI BOLD response in monkey auditory cortex, Ross Muers, Emma Salo, Heather Slater, Teemu Rinne, Christopher I. Petkov
20. Online building of hierarchical structure during speech perception, Nai Ding, Lucia Melloni, Hang Zhang, Xing Tian, David Poeppel
22. Inhibitory control of the maturation of cortical temporal processing, Xiaoyang Long, Rongrong Han, Dongqin Cai, Yang Liu, Miaomiao Liu, Limin Zhao, Kexin Yuan
24. Predictive mechanisms and speech perception in progressive non-fluent aphasia: A magnetoencephalography (MEG) study, Thomas Edmund Cope, Karalyn Patterson, Ediz Sohoglu, Catherine Dawson, Manon Grube, Matt Davis, James Rowe
25. The role of inhibition in auditory cortex for encoding temporal information, Daniel Bendor
26. Streaming of repeated embedded noise in ferret auditory cortex, Daniela Saderi, Brad N. Buran, Josh H. McDermott, Stephen V. David


29. Neural mechanisms underlying long-lasting contextual modulations in auditory cortex of awake marmoset studied by intracellular recording, Lixia Gao, Xiaojin Wang


31. Attentional modulation of repetition suppression effects in human face- and voice-sensitive cortex, Yukiko Kikuchi, Jennifer Ip, James C. Mossom, Nick Barracough, Christopher I. Petkov, Quoc C. Vuong

32. Syllabification and recognition of noisy speech using spiking neurons, Phillip B. Schaffer, Dezhe Z. Jin

33. Modulation of core auditory cortex putative pyramidal neuron responses by vocalization categories depends on behavioral relevance, Kathryn N. Shepard, Kelly Chong, Frank G. Lin, Charles Zhao, Robert C. Liu

34. Elevated cholinergic tone disrupts the balance of stability and plasticity in the auditory cortex of ChAT-ChR2-EYFP transgenic mice, Wei Guo, Barbara G. Shinn-Cunningham, Daniel B. Polley

35. Ontogeny of antiphonal calling in common marmosets, Cecilia P. Chow, Jude F. Mitchell, Cory T. Miller

36. Adaptive interpretation of sounds without the auditory cortex, Tyler L. Gimenez, Maja Lorenc, Santiago Jaramillo

37. Stimulus-specific adaptation and novelty detection in a Down syndrome mouse model overexpressing Dyrk1A, Daniel Duque, Maria Martinez de Lagran, Mara Dierssen, Manuel S. Malmierca

38. Comparing cortical pitch responses in humans and monkeys, Samuel Norman-Haignere, Josh McDermott, Nancy Kanwisher, B.R. Conway

39. A preparation for optogenetic photostimulation in marmoset cortex, Matthew MacDougall, Shanna Coop, Jude Mitchell, Cory Miller

40. Learning-related neuronal circuit dynamics in mouse auditory cortex investigated by chronic two-photon calcium imaging, Balazs Laurenczy, Fritjof Helmchen, Henry Lüttcke

41. Effects of noise-induced tinnitus on frequency discrimination acuity in mice, Laetitia Mwilambwe-Tshilobo, Andrew Davis, Maria N. Geffen


43. Supramodal processing in medial prefrontal cortex during audiovisual working memory, Bethany Plakke, Mark D. Diltz, Liz M. Romanski

44. Mapping developing subplate microcircuits in a mouse model of autism, Daniel A. Nagode, Xiangying Meng, Patrick O. Kanold

45. Crossmodal plasticity alters correlated neuronal activity in auditory cortex, Krystyna L Solarana, Patrick Kanold

46. Vocal signal processing and social categorization during natural communication in marmoset frontal cortex neurons, Vladimir Jovanovic, Shanna H. Coop, Cory T. Miller

47. Limitations in fine-grained within-category semantic auditory discrimination: insights from spatio-temporal analyses, Rosanna De Meo, Micah M. Murray, W. Reid Thompson, Stephanie Clarke


49. Critical period hearing loss disrupts subsequent amplitude modulation detection, Melissa L. Caras, Dan H. Sanes

50. Single-unit physiological characterization of putative auditory parabelt cortex in the marmoset monkey, Darik Gamble, Xiaojin Wang

51. Active retrieval of long-term auditory memories modulates neuronal activity in primary and secondary auditory cortices, Pingbo Yin, Dana L. Strait, Jonathan B. Fritz, Shihab A. Shamma
52. Spontaneous changes in state explain cortical and behavioral response variability, Matthew J. McGinley, Stephen V. David, David A. McCormick

53. Crossmodal plasticity of intracortical connections in auditory cortex, Xiangying Meng, Patrick O. Kanold

54. The role of perineuronal nets and Nogo signaling in auditory cortex-mediated fear learning, Sunayana B. Banerjee, Vanessa Gutzeit, Robert C. Liu, Kerry J. Ressler

55. Age-related changes of auditory brainstem responses in non-human primates, Chi-Wing Ng, Xochi Navarro, James R. Engle, Gregg H. Recanzone


58. The laminar profile of task-dependent plasticity in spiking and local field potentials from primary auditory cortex, Nikolas Francis, Diego Elgueda, Bernhard Englitz, Jonathan Fritz, Shihab Shamma

59. Neural mechanisms for preserving information about multiple sound items, V.C. Caruso, J. Lee, D.S. Pages, R. Estrada, J.M. Groh, S. Tokdar

60. Probing the perceptual and physiological mechanisms underlying an auditory delayed match-to-sample task in marmosets, Michael S. Osmanski, Xiaqin Wang

61. Compensatory gain control partially restores midbrain and cortical sound coding following profound peripheral nerve degeneration, Anna R. Chambers, Yasheng Yuan, Albert S. Edge, M. Charles Liberman, Daniel B. Polley

62. Training induced dynamic filtering of auditory distractors in the rat primary auditory cortex, K.A. Mirédin, C. Holman, M. Cisneros-Franco, E. de Villers-Sidani

63. Studying the neural basis of vocal communication in a naturalistic environment using wireless neural recording technology in marmoset monkeys (Callithrix jacchus), Lingyun Zhao, Hu Yi, Xiaqin Wang

64. Neural encoding of noisy vocalizations in primary auditory cortex of the marmoset monkey, Ruiye Ni, Noah M. Ledbetter, Jeffrey R. Gamble, David A. Bender, Dennis L. Barbour

65. Stability versus flexibility in the encoding of envelope cues in the awake-behaving gerbil, Gardiner von Trapp, Kamal Sen, Malcolm N. Semple, Dan H. Sanes

66. Neural correlates of auditory-tactile integration in meter perception: an EEG study, Tianxu Wu, Juan Huang, Steven Hsiao, Xiaqin Wang


68. Neural coding of multidimensional stimuli in auditory cortex, Nidal Hishmeh, Kenny Chou, Anna Chambers, Jennifer Resnick, Daniel Polley, Kamal Sen


70. Possible origins of human-like pitch perception mechanisms, Xindong Song, Michael S. Osmanski, Yueqi Guo, Xiaqin Wang

71. Adaptive control of signal production and reception in an active sensing system, Melville Wohlgemuth, Cynthia Moss

72. Effects of aging on the response of single neurons to amplitude modulated noise in primary auditory cortex of Rhesus macaque, Jacqueline A. Overton, Gregg H. Recanzone

73. Coding of vowels in the auditory midbrain of the budgerigar and rabbit, Kenneth S. Henry, Erikson G. Neilans, Joyce M. McDonough, Laurel H Carney

74. Perception changes in ultrasonic vocalization detection in CBA/CaJ mice across lifespan, Anastasiya Kobrina, Michael L. Dent

75. State-dependent changes in response selectivity gated by behavior in ferret higher order auditory cortex, Diego Elgueda, Stephen V. David, Susanne Radtke-Schuller, Shihab A. Shamma, Jonathan B. Fritz

76. Task-related attention affects the cortical processing of auditory spatial cues, Nathan C. Higgins, G. Chris Stecker
77. Saccade-related modulation of acoustic activity recorded from the external ear canal, K. Gruters, C.A. Shera, J.M. Groh
78. Contribution of transient neural responses to stimulus discriminability in auditory cortex, Wensheng Sun, Noah M. Ledbetter, Dennis L. Barbour
79. Co-modulation as a means of enhancing signal detection and object formation in mouse primary auditory cortex, Joseph Sollini, Alexander Morris, Paul Chadderton
80. Cortical feedback modulates adaptive gain control in the midbrain, Charles-Henri P. Vila, Ross S. Williamson, Daniel B. Polley
81. Isolating distinct top-down control circuits for auditory cortex, Zachary P. Schwartz, Stephen V. David
82. Functional characterization of thalamic input to the mouse auditory cortex, Y. Weissenberger, S.A. Vasquez-Lopez, P. Keating, A.J. King, J.C. Dahmen
83. Cortical networks for spatial attention in a dynamic auditory scene, Inyong Choi, Hari Bharadwaj, Hannah Goldberg, Barbara Shinn-Cunningham
84. Inhibition within the auditory-recipient striatum is reduced during associative conditioning to an amplitude-modulated cue, T.M. Mowery, G. von Trapp, C.L. Rodriguez-Deliz, V.C. Kotak, D.H. Sanes
85. Reconstructing vocalizations from motor cortical activity recorded during vocal production in the macaque, Makoto Fukushima, Matthew Mulraky, Alexandra M. Doyle, Richard C. Saunders, Naotaka Fujii, Bruno B. Averbeck, Mortimer Mishkin
86. Dynamic role of “top-down” influences during learning of a novel auditory discrimination task, Jonathan Cote, Etienne de Villers-Sidani
87. Inter- and intra-individual acoustic variation of vocalizations in macaque monkeys, Alex M. Doyle, Makoto Fukushima, Matthew Mulraky, Mortimer Mishkin
88. Ultrasonic pure tone sweep discrimination by CBA/CaJ mice, Laurel A. Screven, Micheal L. Dent
89. Distinct ultrasonic vocal repertoires are elicited by males and female chemosensory cues, Kelly M. Seagraves, Gordon J. Berman, S.E. Roian Egnor
90. Anterior visuotopic parietal maps recruited for auditory spatial short-term memory, S.W. Michalka, M.L. Rosen, L. Kong, B.G. Shinn-Cunningham, D.C. Somers
91. The effects of aging and noise exposure on adaptation to repetitive stimuli in A1, Miguel Cisneros-Franco, Maryse Thomas, Etienne de Villers-Sidani
93. Auditory network optimized for sound discrimination predicts hierarchical trends of the auditory system, Fatemeh Khatami, Monty A. Escabi
94. Using nonstationary contrast and intensity statistics for sound category identification, Rahul Narayan, Monty A. Escabi
95. Frequency tagging and neural correlates of the cocktail party effect in the monkey inferior colliculus, D.S. Pages, V.C. Caruso, S. Tokdar, J.M. Groh
96. Specialized auditory temporal processing in the theta and gamma bands revealed by priming, Xiangbin Teng, David Poeppel
98. Neural responses to spectrotemporal patterns in auditory midbrain: From simple to complex, Wenbo Tang, Rui Xu, Bo Hong
99. Categorical representation of Chinese lexical tone in human auditory cortex, Xiaopeng Shi, Wenjin Zhou, Bo Hong
100. Neural codes for pitch perception in the actively- and passively-listening state, Kerry M.M. Walker, Jennifer K. Bizley, Jan W.H. Schnupp, Fernando Nodal, Andrew J. King
101. Stimulus specific adaptation and deviance detection in inferior colliculus and auditory cortex, Leila Khouri, Bshara Awwad, Ilati Herschenhoeren, Israel Nelken
102. Functional connectivity between the prefrontal and auditory cortices, Jason Middleton, David Vumbaco