APAN Advances and Perspectives in Auditory Neuroscience

Sponsored by TDT and NIDCD

Wyndham San Diego Bayside Hotel, San Diego, CA

Friday, November 11, 2016

8:00 – 9:00 **Registration and Poster set-up**

9:00 – 9:05 **Opening Remarks** (Chris Petkov)

Keynote Lecture

9:05 – 10:00 **Timothy D. Griffiths, Newcastle University**

Sound effects: Notes from the clinic

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

Poster Teaser Session I (Chairs: Bo Hong and Michelle Moerel)

10:05 – 10:20 **Four 3-minute Teasers**

- **Asymmetry in neural responses to "on-beat" and "off-beat" sounds in the gerbil inferior colliculus (10)** **Rajendran VG, Garcia-Lazaro JA, Harper NS, Lesica NA & Schnupp JWH*
- **Pitch perception in marmosets (58)** **Song J, Osmanski MS, Guo Y & Wang X*
- **Associative plasticity in the auditory cortex induced by fear conditioning (60)** **Zelenka O, Novak O & Syka*
- **The impact of visual gaze direction on human auditory scene analysis (98)** **Pomper U & Chait M*

10:20 – 11:40 **Morning Poster Session (Presentations by EVEN # Posters)** and Coffee Break

Slide Session I (Chairs: Jennifer Bizley and Bethany Plakke)

11:45 – 12:00 **L5 corticocollicular and L6 corticothalamic neurons support a parallel and complementary analysis of auditory stimulus features,** **Williamson RS & Polley DB*

12:00 – 12:15 **$GABA_A$ and $GABA_B$ mediated inhibition display distinct critical periods in auditory cortex,** **Mowery TM, Dimidschstein J, Fishell G, Kotak VC & Sanes DH*

12:15 – 12:30 **Task-Related Plasticity in the Inferior Colliculus of the Marmoset Monkey,** **Slee S & David S*

12:30 – 2:00 **Lunch** on your own (posters remain up through entire meeting)

Side Session II (Chairs: Steve Lomber and Richard Saunders)

2:15 – 2:30 **Functional organisation of the thalamo-cortical auditory system in awake ferrets using fast ultrasound imaging,** **Bimbard C, Demené C, Girard C, Radtke-Schuller S, Shamma S, Tanter M & Boubenec Y*

2:30 – 2:45 **Attenuation of responses to self-generated sounds in auditory cortical neurons,** **Rummell BP, Klee JL & Sigurdsson T*

2:45 – 3:00 **Targeted optogenetic stimulation in the auditory pathway enables access to the tonotopic axis,** **Narasimhan S, Hight A, Meng X, Edge A, Brown C & Lee D*

3:00 –3:15 **Neural entrainment during beat perception and its relation to psychophysical performance,** **Henry M & Grahn JA*

Young Investigator Spotlight (Chair: Jonas Obleser)

3:15 – 3:45 **Dr. Maria Geffen, University of Pennsylvania**

Cortical circuits supporting dynamic auditory processing

Poster Teaser Session II (Chairs: Jennifer Bizley and Mimi Phan)

3:45 – 4:00 **Four 3-minute Teasers**

- **Noise-robustness of cortical responses to natural sounds increases from primary to non-primary auditory cortex (3)** *Kell AJE & McDermott JH
- **A coactivation model to explain detection of audiovisual vocalizations at different intensities and delays (79)** **Chandrasekaran C & Gondan M*
- **Stimulus-Specific Adaptation in Distinct Inhibitory Populations in Auditory Cortex (83)** **Yarden TS, Mizrahi A & Nelken I*
- **Learning and Performance Variability in A Rodent Model of Multi-Channel Cochlear Implant Use (125)** **King J, Shehu I, Svirsky M & Froemke RC*

4:00 – 6:00 **Afternoon Poster Session (Presentations by ODD # Posters until 5:20 PM)** and Open Bar

6:00 – 6:10 **Travel Awards and Other Announcements** (Bo Hong, Yale Cohen, Liz Romanski, Xiaoqin Wang)

6:10 – 6:30 **Business Meeting** (Chris Petkov plus Programming, Event and Organizing Committee members)

APAN 2016 Poster Presentations:

1 Utilizing multisensory integration to improve auditory alarm design in the intensive care unit
Joseph Schlesinger, Sarah Baum, Katherine Nash, Dan Ashmead, Matthew Weinger, Mark Wallace

2 Role of Auditory Thalamus in the Cortical Frequency-specific Plasticity
Lingzhi Kong, Shaohui Wang, Xiuping Liu and Jun Yan

3 Noise-robustness of cortical responses to natural sounds increases from primary to non-primary auditory cortex
Alexander J E Kell, Josh H McDermott

4 NMDA receptor-dependent temporal processing plasticity in the developing auditory cortex requires GABA(B) receptor-mediated inhibition
Dongqin Cai, Rongrong Han, Miaomiao Liu, Fenghua Xie, Ling You, Yiwei Wang, Yin Yue, Kexin Yuan

5 Weighting perception of ambiguous motion stimuli: The curious case of audition trumping vision
Thelen A, Chadha M, Nidiffer AR, Ramachandran R, & Wallace MT,

6 Reward cues direct auditory attention and modulate fMRI activations in monkey auditory cortex
Patrik Wikman, Teemu Rinne, Chris Petkov

7 True deviance sensitivity in awake freely moving rats
Ana Polterovich, Maciej M. Jankowski, Israel Nelken

8 Effect of fear conditioning on stimulus specific adaptation to complex sounds in freely moving animals
Amit Yaron Maciek Jankowski , Rawan Badrieh, Israel Nelken

9 Predictability modulates excitation in the auditory cortex of macaques
Aggelopoulos NC, Selezneva E, Knyazeva S, Gorkin A, Brosch M

10 Asymmetry in neural responses to "on-beat" and "off-beat" sounds in the gerbil inferior colliculus
Vani G. Rajendran, Jose A. Garcia-Lazaro, Nicol S. Harper, Nick A. Lesica, Jan W. H. Schnupp

11 Cortical mechanisms of perceptual learning
Melissa Caras, Derek Wang, Dan H. Sanes

12 Histone modification enables song-specific auditory memories in an avian model.
Mimi L. Phan, Shafali Mahidadia, Jorge Jiménez Castillo, Syed Zammam Saad, David S. Vicario, Kasia M. Bieszczad

13 Affective representations of auditory stimuli in human insular cortex
Yang Zhang, Yue Ding, Juan Huang, Wenjing Zhou, Zhipei Lin, Bo Hong, Xiaoqin Wang

14 Neural noise in the human electroencephalogram predicts perceptual decisions
Leonhard Waschke, Malte Wöstmann, Jonas Obleser

15 Scalp EEG predicts listener's attentional focus and attentional demands under continuously varying signal-to-noise ratio
Lorenz Fiedler, Malte Wöstmann , Sophie Herbst, Carina Graversen, Thomas Lunner, Jonas Obleser

16 Early auditory experience modifies neuronal firing properties of neurons in zebra finch auditory cortex
Takashi Kudo, Yoko Yazaki-Sugiyama

17 Role of Auditory Cortex in Feedback-Dependant Vocal Control in Marmoset Monkeys
Steven J Eliades, Joji Tsunada

18 Evolution of a reference frame along a brain pathway: persistently hybrid coordinates of auditory signals in Frontal Eye Fields implicate the Superior Colliculus in computing eye-centered sound location
V.C. Caruso, D. S. Pages, M. A. Sommer, J.M. Groh

19 DREADD-mediated Silencing of Projections from Basolateral Amygdala To Nucleus Accumbens Disrupts Pre-Pulse Inhibition In Rats
Brittany Aguilar, Evan Wicker, Ludise Malkova, Patrick Forcelli

20 Dopaminergic modulation of vocalization-selective neurons in the inferior colliculus acts via D2-like receptors
Jeffrey M. Hoyt, David J. Perkel, Christine V. Portfors

21 Studying Vocal Communication of Marmoset Monkeys (Callithrix jacchus) in a Rich, Socially-interactive, Captive Environment
Lingyun Zhao, Xiaoqin Wang

22 Regularity-dependent changes in neuronal adaptation in the awake rat auditory cortex
Bernhard Gaese

23 Assessment of subcortical physiological discrimination and phase locking in infants
Katlyn Bostic, Alessandro Pressaco, Samira Anderson

24 Effects of L-dopa on the benefit from attention to memory
Sung-Joo Lim, Christiane Thiel, Bernhard Sehm, Lorenz Deserno, Jöran Lepsien, Jonas Obleser

25 The role of nitric oxide in modulating neuronal activity in the ventral cochlear nucleus
Adam Hockley, Joel I Berger, Paul A. Smith, Mark N Wallace and Alan R Palmer

26 Behavioral discrimination of channel specific microstimulation for central auditory neuroprostheses
Ryan Verner, Edward Bartlett

27 Use of the post auricular muscle response for measuring pre-pulse inhibition of the human acoustic startle reflex.
Caroline Wilson, Joel Berger, Jessica de Boer, Magdalena Sereda, Alan Palmer, Deborah Hall, Mark Wallace

28 Joint tuning to sound features emerges in superficial layers of human primary auditory cortex
Michelle Moerel, Federico De Martino, Kamil Ugurbil, Essa Yacoub, Elia Formisano

29 Investigating the functional organization of auditory pathway with high-resolution fMRI.
Omer Faruk Gulban, Elia Formisano, Federico De Martino

30 Adaptation in auditory cortex is actively shaped by somatostatin-positive and not parvalbumin-positive interneurons
Ryan G. Natan, Winnie Rao, Maria N. Geffen

31 Evolutionary origins of non-adjacent sequence processing in primate brain potentials
Alice Milne, Jutta Mueller, Claudia Männel, Adam Attaheri, Angela Friederici, Christopher Petkov

32 High-resolution intracranial recordings provide direct electrophysiological evidence for music and speech-selective neural populations in human auditory cortex
Sam V Norman-Haignere, Jenelle Feather, Peter Brunner, Anthony Ritaccio, Josh H McDermott, Nancy Kanwisher, Gerwin Schalk

33 Foreground stimuli affect Neuronal Adaptation to Sound Level Statistics In The Inferior Colliculus Of Behaving Macaques
Francesca Rocchi, Ramnarayan Ramachandran

34 On The Edge Of Your Ears: Investigating the Neural Correlates of Auditory Anticipatory Attention
Hesham A. ElShafei, Romain Bouet, Olivier Bertrand, Aurélie Bidet-Caulet

35 Using auditory brainstem responses to measure hearing loss-induced increases in neural gain and its implications with tinnitus
Alexander Hardy, Jessica de Boer, and Katrin Krumbholz

36 A computational model of temporal processing in human auditory cortex
Isma Zulfiqar, Michelle Moerel, Peter De Weerd, Elia Formisano

37 Differential tuning of the low- and high-frequency components of the neurophonic spectrum reveals the spike contribution of barn owl's nucleus laminaris neurons
P. T. Kuokkanen, A. Kraemer, H. Wagner, C. Koeppl, C. E. Carr , R. Kempter

38 Can transcranial direct current stimulation (tDCS) modulate auditory cortical oscillations? Simultaneous acquisition of tDCS and magnetoencephalography (MEG)
Martin Holding, Nathan Weisz, Gianpaolo Demarchi, Deb Hall, Martin Schurrman, Peyman Adjamian

39 Characterization of a novel analysis method for single trial analysis of fluctuating neural responses
Jeff T Mohl, Valeria C. Caruso, Chris Glynn, Surya Tokdar, Jennifer M. Groh

40 The effect of language familiarity on the cortical analysis of speech-specific temporal structure
Tobias Overath, Joon Hyun Paik

41 The contribution of cognition in speech-in-noise perception in younger and older normal hearing adult listeners
Adam Dryden , Harriet A. Allen, Helen Henshaw, Antje Heinrich

42 Neurophysiologial manifestation and characterization of the causative gene in a mouse line carrying hereditary deafness
Chenmeng Song, Wei Xiong

43 Early sensory experience directs the development of multisensory connections of primary sensory cortices
Julia U. Henschke, Anja M. Oelschlegel, Frank Angenstein, Frank W. Ohl, Jürgen Goldschmidt, Patrick O. Kanold, Eike Budinger

44 Rate coding of high frequency amplitude modulations during behavior
Justin D Yao, Dan H Sanes

45 Anaesthetic choice modulates basic auditory processing: A combined EEG/LFP study in guinea pigs
Oscar Woolnough, Joel I. Berger, Ben Coomber, Mark N. Wallace, Alan R. Palmer, Chris J. Sumner

46 Characterizing receptive fields in awake primate auditory cortex using principled correction of the spike-triggered average
James Bigelow, Ralph Beitel, Brian Malone

47 Primate BOLD data demonstrating fundamental bases for auditory figure-ground analysis
Pradeep Dheerendra, Fabien Balezeau, Sukhbinder Kumar, Andrew Blamire, Alexander Thiele, Timothy D. Griffiths

48 Direct human electrical recordings demonstrating fundamental bases for auditory figure-ground analysis
Phillip Gander, Sukhbinder Kumar, Kirill Nourski, Hiroyuki Oya, Hiroto Kawasaki, Matthew Howard, Timothy Griffiths

49 Mapping auditory information flow in the primate cortex: corticocortical and thalamocortical projections
Brian Scott, Yukiko Kikuchi, KS Saleem, Makoto Fukushima, Mortimer Mishkin, and Richard Saunders

50 Two-Scale Processing in Human Auditory Cortex: A Scale for Detection and a Scale for Tracking
Xiangbin Teng, David Poeppel

51 Ongoing dynamics of frequency-specific large-scale brain networks predict the speed of auditory decisions
Mohsen Alavash, Christoph Daube, Malte Wöstmann, Alex Brandmeyer, Jonas Obleser

52 Chronic calcium imaging reveals strong suppressive effects of anaesthesia on spontaneous and sound-evoked responses in dorsal inferior colliculus
Aaron Benson Wong, J. Gerard G. Borst

53 Contribution of correlated neural activity in the auditory cortex to the cocktail-party problem
Francisco Rodriguez Campos, Taku Banno, Sharath Bennur, Yale Cohen

54 Mechanism and Function of Physiologically Heterogeneous Cell Types in Caudolateral Mesopallium
Andrew N Chen, C. Daniel Meliza

55 A high-frequency tonotopic reversal in marmoset parabelt auditory cortex
Darik Gamble, Xiaoqin Wang

56 Distinct timescales for neural discrimination of sound envelope shape in three auditory cortical fields
A. F. Osman, C. M. Lee, M. A. Escabi, H. L. Read

57 Activity of medial prefrontal and striatal neurons in primates while remembering faces and vocalizations
Bethany Plakke, Liz Romanski

58 Pitch perception in marmosets
Xindong Song, Michael S. Osmanski, Yueqi Guo, Xiaoqin Wang

59 Electrophysiology of the human superior temporal sulcus during speech and language processing
Mitchell Steinschneider *, Kirill V. Nourski *, Ariane E. Rhone, Hiroto Kawasaki, Matthew A. Howard III

60 Associative plasticity in the auditory cortex induced by fear conditioning
Ondrej Zelenka, Ondrej Novak, Josef Syka

61 Slow rhythms in conspecific vocalizations are over-represented in the primary auditory cortex of common marmosets
Taku Banno, Wataru Suzuki, Naohisa Miyakawa, Toshiki Tani, Noritaka Ichinohe

62 Egocentric and Allocentric Representations in Auditory Cortex
Stephen Town, Owen Brimijoin, Jennifer Bizley

63 Sensory coding properties predict selective attention effects on single units in primary auditory cortex
Zachary P. Schwartz, Stephen V. David

64 Independent attentional modulation of compound auditory feature integration and segregation
K. N. O'Connor, A. J. Prabhu, J. S. Johnson and M. L. Sutter

65 Contrast gain control in auditory thalamus
Michael Lohse, Benjamin Willmore, Victoria Bajo, Andrew King

66 Task engagement induces shift from sensory to behavioral representations in primary auditory cortex
Sophie Bagur, Martin Averseng, Diego Elgueda, Jonathan Fritz, Pingbo Yin, Shihab Shamma,, Srdjan Ostojic*, Yves Boubenec*

67 Investigating the cortical encoding of phonological features of continuous speech in dyslexia
Giovanni M. Liberto, Varghese Peter, Marina Kalashnikova, Denis Burnham, Edmund C. Lalor

68 A System Identification Approach for Rapid Characterization of the Auditory Evoked Potential (AEP)
Denis Drennan, Edmund Lalor

69 The relation between neural entrainment and speech intelligibility
Jonas Vanthornhout, Lien Decruy, Jan Wouters, Jonathan Z. Simon, and Tom Francart

70 Auditory analogues of simple and complex cells: linearity of responses to periodic stimuli
Paweł Kuśmierek, Josef P. Rauschecker

71 Interactions of simultaneous sound representations in the primate inferior colliculus
Shawn M. Willett, Valeria C. Caruso, Surya T. Tokdar, Jennifer M. Groh

72 Information processing by synchronized neuronal ensembles in the primary auditory cortex
Jermyn See, Craig Atencio, Vikaas Sohal, Christoph Schreiner

73 Neural asymmetries demonstrate the influence of spectral cues on sound externalization
Robert Baumgartner, Darrin K. Reed, Brigitta Tóth, Virginia Best, Piotr Majdak, Gerald Kidd Jr., H. Steven Colburn, Barbara Shinn-Cunningham

74 Reward expectation influences the activity of auditory striatal neurons during decision making
Lan Guo, Billy Walker, Santiago Jaramillo

75 The influence of frequency on perceived temporal rate is larger in demanding listening situations
Björn Herrmann, Ingrid S. Johnsrude

76 Two types of cortical interneurons differentially modulate behavioral frequency discrimination acuity
Jennifer M Blackwell, Mark Aizenberg, Laetitia Mwilambwe-Tshilobo, Sara Jones, Ryan G Natan, Maria N Geffen

77 Learning Mid-Level Codes for Natural Sounds
Wiktor Mlynarski, Josh H. McDermott

78 Extraction of task-relevant events from acoustic stream in ferret frontal cortex
Jennifer Lawlor, Bernhard Englitz, Arne Meyer, Urszula Górska, Shihab Shamma, Yves Boubenec

79 A coactivation model to explain detection of audiovisual vocalizations at different intensities and delays
Chandramouli Chandrasekaran, Matthias Gondan

80 Dynamic faces suppress and reset local field potential responses in the macaque auditory cortex
Chandramouli Chandrasekaran, Asif Ghazanfar

81 Neural representation and hierarchical processing of phonemes in temporal cortex revealed by intracranial EEG
Chen Song, Rui Xu, Wenjing Zhou, Zhipei Ling, *Bo Hong

82 Implicit discrimination of embedded auditory regularities in mesio-temporal regions
Athina Tzovara, Laurent Spinelli Margitta Seeck Marzia De Lucia

83 Stimulus-Specific Adaptation in Distinct Inhibitory Populations in Auditory Cortex
Tohar Sion Yarden, Adi Mizrahi, Israel Nelken

84 Bridging the gap: stimulus-reinforcement plasticity emerges in the basal forebrain and drives Hebbian plasticity in the auditory cortex
Wei Guo, Daniel B. Polley

85 Electrophysiological correlates of speaker separation and foreground-background selection in ambiguous listening situations
Katharina Gandras, Alexandra Bendixen

86 Discrimination of Frequency Modulation in Artificial Vocalizations in CBA/CaJ Mice
Laurel A. Screven, Micheal L. Dent

87 The role of auditory thalamo-striatal and cortico-striatal neurons in amplitude modulation frequency discrimination
Nicholas D Ponvert, Santiago Jaramillo

88 Coordination of vocal interactions by marmoset monkeys in naturalistic social environments
Joji Tsunada, Benjamin Ballintyn, Steven Eliades

89 Neural decoding of attentional selection in multi-speaker environments without access to separated sources
James O'Sullivan, Zhuo Chen, Sameer Sheth, Guy McKann, Ashesh Mehta, Nima Mesgarani

90 Mind the Gaps: Neural Coding of Species Identity in Birdsong Prosody
Makoto Araki, M. M. Bandi, Yoko Yazaki-Sugiyama

91 Primate frontal cortex neurons predict the outcome of natural conversations
Vladimir Jovanovic, Samuel Nummela, Lisa de la Mothe, Cory Miller

92 Coding Loudness by Pulse Amplitude or Pulse Duration in cochlear implant: Does It Matter for Cortical Neurons?
Victor Adenis, Pierre Stahl, Dan Gnansia, Boris Gourevitch, Jean-Marc Edeline

93 Does Long Lasting Exposure to Non-Traumatic Industrial Noise Affect Differentially the Auditory Cortex in Adult vs. Immature Rats?
Florian Occelli, Jean-Marc Edeline, Boris Gourevitch

94 Characterizing Auditory Cortical Responses to Multidimensional Stimuli
Dustin Shigaki, David Sloas, Anna Chambers, Daniel Polley, & Kamal Sen

95 Responses to sinusoidal frequency modulation in the guinea pig ventral cochlear nucleus
Nihaad Paraouty, Arkadiusz Stasiak, Christian Lorenzi, Ian M. Winter

96 Different spatio-temporal EEG features drive the successful decoding of binaural and monaural cues for sound localization
Adam Bednar, Edmund C. Lalor

97 Decoding cocktail party attention using EEG signatures of hierarchical speech processing
Emily Teoh, Edmund C. Lalor

98 The impact of visual gaze direction on human auditory scene analysis
Ulrich Pomper, Maria Chait

99 Electrocorticographic delineation of human auditory cortical fields based on effects of propofol anesthesia
Kirill Nourski, Michael Todd, Mitchell Steinschneider, Matthew Banks, Ariane Rhone, Rashmi Mueller, Hiroto Kawasaki, Matthew Howard

100 Persistent activity in auditory cortex during passive listening
James Cooke, Julie Lee, Daniel Bendor

101 HDAC3 dynamically regulates discrimination learning and information storage in primary auditory cortex
Andrea Shang, Sooraz Bylipudi, Kasia M. Bieszczad

102 Prefrontal and sensory correlates of auditory spatial attention in the macaque
Corrie R. Camalier, Anna Leigh Brown, Jessica Jacobs, Mortimer Mishkin, Bruno B. Averbeck

103 Social consequences of interrupting marmoset conversations
Camille Toarmino, Cory Miller

104 Synaptic or intrinsic, that is the question; parsing out synaptic currents in mapping the auditory corticocollicular inputs with glutamate uncaging
Bernard J Slater, Stacy K Sons, and Daniel A Llano

105 First formant context information modulates speech segregation
Linda Garami, Jessica S. Arsenault, Gavin M. Eidelman, Joel S. Snyder, Claude Alain

106 Convergence of excitatory and inhibitory projections in the mouse medial geniculate body
Blaise A. Clarke, Olalekan M. Ogundele, Charles C. Lee

107 Spatial representation of speech in human auditory cortex
Prachi Patel, Laura Long, Jose Herrero, Ashesh Mehta, Nima Mesgarani

108 Changes of inhibitory and excitatory input to Layer 2/3 auditory cortex induced by developmental exposure to polychlorinated biphenyls
Christopher M Lee, Renee N Sadowski, Daniel A Llano, Susan L Schantz

109 Unsupervised learning and recognition of vowel sequences in the auditory cortex
Sundeep Teki, Benjamin D Willmore, Andrew J King

110 A low cost platform for large scale auditory behavioral experiments in mice
Yves Weissenberger, Martin C. Kahn, Peter Keating, Andrew. J. King, Johannes C. Dahmen

111 Avalanche dynamics during spontaneous and sound evoked activity in the auditory cortex of awake mice
Daniel E. Winkowski, Zac Bowen, Saurav Seshadri, Tiago Ribeiro, Dietmar Plenz, Patrick Kanold

112 Inactivation of primate dorsolateral prefrontal cortex during auditory working memory
Lizabeth Romanski, Bethany Plakke, Theodore Lincoln, Amy Poremba, James Bigelow

113 Auditory streaming of speech: acoustics, lexicality and neural signatures
Alexander J. Billig, Ingrid S. Johnsrude

114 Rapid Adaptation to Changing Signal Conditions in human auditory Cortex
Bahar Khalig, Haoyue Bai, Laura K. Long, Tasha Nagamine, Bahar Khalighinejad, Ashesh D. Mehta, Nima Mesgarani

115 Eye movement-related eardrum oscillations (EMREOs) suggest visual-auditory spatial integration begins in the auditory periphery
David LK Murphy, Kurtis G Gruters, David W Smith, Christopher A Shera, Jennifer M Groh

116 Motor system excitability fluctuations during rhythm and beat perception
Daniel J Cameron, Jana Celina Everling, T.C. Chiang, Jessica A Grahn

117 The relationship between perceptual timing and language skill in early and middle adolescence: the St Thomas More School Project
Manon Grube, Catherine Davison, Sukhbinder Kumar, Faye Smith, Timothy D. Griffiths

118 Perceptual boundaries for species-specific vocalizations in the common marmoset (Callithrix jacchus)
Michael S. Osmanski, Xiaoqin Wang

119 Dissociation of knowledge and performance during sensorimotor learning
Kishore Kuchibhotla, Tom Anton Hindmarsh Sten, Robert C. Froemke

120 Feature Selective Attention Enhances Population Coding in Primary Auditory Cortex
Josh Downer, Kevin O'Connor, Mitchell Sutter

121 The significance of nominally non-responsive cell activity in auditory perception and behavior
Michele N. Insanally, Ioana Carcea, Badr F. Albanna, and Robert C. Froemke

122 Frequency contour tuning reveals neural tolerance for vocal category variation in mouse A2
Kelly K Chong, Alex G Dunlap, Robert C Liu

123 Learning to hear with cochlear implants: role of noradrenaline
Erin Glennon, Ioana Carcea, Julia King, Mario Svirsky, and Robert C. Froemke

124 A physiological and behavioral system for hearing restoration with cochlear implants
Julia King, Ina Shehu, J. Thomas Roland Jr., Mario Svirsky, Robert C. Froemke

125 Learning and Performance Variability in A Rodent Model of Multi-Channel Cochlear Implant Use
Julia King, Ina Shehu, Mario A. Svirsky, and Robert C. Froemke

126 Contribution of population activity in the auditory cortex to the cocktail-party problem
Kate Christison-Lagay, Sharath Bennur, and Yale Cohen