

# The Journal of Neuroscience

June 18, 2008 • Volume 28 Number 25 www.jneurosci.org

**Cover legend:** Intensity-invariant discrimination seen in spike distances visualized with a spike distance matrix and multidimensional scaling (MDS) for 35 recording sites in songbird field L, an auditory structure. Distance matrices (each identifiable by the diagonal line of zero distance) were generated from computing all of the van Rossum distances between each pair of spike trains from one neuron. Larger distances are represented by brighter colors. Below each distance matrix is a scatter plot of the two-dimensional MDS analysis. One bird song is shown as circles and another as triangles, and here bright colors indicate higher-intensity stimuli. The recordings are in reading order of decreasing invariance to intensity. The last 11 recordings are from sites that respond to the songs but show poor discrimination performance at all intensities tested. For more information, see the article by Billimoria et al. in this issue (pages 6304–6308).

## i This Week in The Journal

### Brief Communications

- 6304 Invariance and Sensitivity to Intensity in Neural Discrimination of Natural Sounds**  
Cyrus P. Billimoria, Benjamin J. Kraus, Rajiv Narayan, Ross K. Maddox, and Kamal Sen
- 6383 The Bed Nucleus of the Stria Terminalis Modulates Learning after Stress in Masculinized But Not Cycling Females**  
Debbie A. Bangasser and Tracey J. Shors
- 6388 Grape-Derived Polyphenolics Prevent A $\beta$  Oligomerization and Attenuate Cognitive Deterioration in a Mouse Model of Alzheimer's Disease**  
Jun Wang, Lap Ho, Wei Zhao, Kenjiro Ono, Clark Rosensweig, Linghong Chen, Nelson Humala, David B. Teplow, and Giulio M. Pasinetti
- 6402 GluR6/KA2 Kainate Receptors Mediate Slow-Deactivating Currents**  
Andrea Barberis, Shankar Sachidhanandam, and Christophe Mulle
- 6453 Loss of Resting Interhemispheric Functional Connectivity after Complete Section of the Corpus Callosum**  
James M. Johnston, S. Neil Vaishnavi, Matthew D. Smyth, Dongyang Zhang, Biyu J. He, John M. Zempel, Joshua S. Shimony, Abraham Z. Snyder, Marcus E. Raichle

### Articles

#### CELLULAR/MOLECULAR

- 6309 Developmental and Target-Dependent Regulation of Vesicular Glutamate Transporter Expression by Dopamine Neurons**  
Jose Alfredo Mendez, Marie-Josée Bourque, Gregory Dal Bo, Mathieu L. Bourdeau, Marc Danik, Sylvain Williams, Jean-Claude Lacaille, and Louis-Eric Trudeau
- 6342 The Dimensions and Composition of Stereociliary Rootlets in Mammalian Cochlear Hair Cells: Comparison between High- and Low-Frequency Cells and Evidence for a Connection to the Lateral Membrane**  
David N. Furness, Shanthini Mahendrasingam, Mitsuru Ohashi, Robert Fettiplace, and Carole M. Hackney
- 6393 Facilitation of P2X<sub>7</sub> Receptor Currents and Membrane Blebbing via Constitutive and Dynamic Calmodulin Binding**  
Sébastien Roger, Pablo Pelegrin, and Annmarie Surprenant
- 6407 Sulfated Steroids as Natural Ligands of Mouse Pheromone-Sensing Neurons**  
Francesco Nodari, Fong-Fu Hsu, Xiaoyan Fu, Terrence F. Holekamp, Lung-Fa Kao, John Turk, and Timothy E. Holy

- 6473 **Estrogen Facilitates both Phosphatidylinositol 3-Kinase/Akt and ERK1/2 Mitogen-Activated Protein Kinase Membrane Signaling Required for Long-Term Neuropeptide Y Transcriptional Regulation in Clonal, Immortalized Neurons**  
Danny Titolo, Christopher M. Mayer, Sandeep S. Dhillon, Fang Cai, and Denise D. Belsham
- 6483 **Corticostriatal and Thalamostriatal Synapses Have Distinctive Properties**  
Jun Ding, Jayms D. Peterson, and D. James Surmeier
- 6493 **Circadian Control of Membrane Excitability in *Drosophila melanogaster* Lateral Ventral Clock Neurons**  
Guan Cao and Michael N. Nitabach
- 6508 **Serotonin Evokes Endocannabinoid Release and Retrogradely Suppresses Excitatory Synapses**  
Aaron R. Best and Wade G. Regehr

#### DEVELOPMENT/PLASTICITY/REPAIR

- 6285 **Molecular Mechanisms Controlling Midline Crossing by Precerebellar Neurons**  
Thomas Di Meglio, Kim T. Nguyen-Ba-Charvet, Marc Tessier-Lavigne, Constantino Sotelo, and Alain Chédotal
- 6439 **A Dlx2- and Pax6-Dependent Transcriptional Code for Periglomerular Neuron Specification in the Adult Olfactory Bulb**  
Monika S. Brill, Marina Snapyan, Hilde Wohlfrom, Jovica Ninkovic, Melanie Jawerka, Grant S. Mastick, Ruth Ashery-Padan, Armen Saghatelian, Benedikt Berninger, and Magdalena Götz

#### BEHAVIORAL/SYSTEMS/COGNITIVE

- 6295 **Individual Differences in Psychotic Effects of Ketamine Are Predicted by Brain Function Measured under Placebo**  
Garry D. Honey, Philip R. Corlett, Anthony R. Absalom, Michael Lee, Edith Pomarol-Clotet, Graham K. Murray, Peter J. McKenna, Edward T. Bullmore, David K. Menon, and Paul C. Fletcher
- 6319 **The Processing of Color, Motion, and Stimulus Timing Are Anatomically Segregated in the Bumblebee Brain**  
Angelique C. Paulk, James Phillips-Portillo, Andrew M. Dacks, Jean-Marc Fellous, and Wulfila Gronenberg
- 6354 **Tactile Stimulation Evokes Long-Term Synaptic Plasticity in the Granular Layer of Cerebellum**  
Leda Roggeri, Bruno Riviaccio, Paola Rossi, and Egidio D'Angelo
- 6360 ***In Vivo* Modulation of Sensory Input to the Olfactory Bulb by Tonic and Activity-Dependent Presynaptic Inhibition of Receptor Neurons**  
Nicolás Pérez and Matt Wachowiak
- 6372 **Preferential Reactivation of Motivationally Relevant Information in the Ventral Striatum**  
Carie S. Lansink, Pieter M. Goltstein, Jan V. Lankelma, Ruud N. J. M. A. Joosten, Bruce L. McNaughton, and Cyriel M. A. Pennartz
- 6430 **Rapid Neural Adaptation to Sound Level Statistics**  
Isabel Dean, Ben L. Robinson, Nicol S. Harper, and David McAlpine
- 6459 **Inducible cAMP Early Repressor Acts as a Negative Regulator for Kindling Epileptogenesis and Long-Term Fear Memory**  
Nobuhiko Kojima, Gilyana Borlikova, Toshiro Sakamoto, Kazuyuki Yamada, Toshio Ikeda, Shigeyoshi Itoharu, Hiroaki Niki, and Shogo Endo

- 6502 **Self in Time: Imagined Self-Location Influences Neural Activity Related to Mental Time Travel**  
Shahar Arzy, Istvan Molnar-Szakacs, and Olaf Blanke
- 6516 **Presynaptic Inhibition of Diverse Afferents to the Locus Ceruleus by  $\kappa$ -Opiate Receptors: A Novel Mechanism for Regulating the Central Norepinephrine System**  
Arati S. Kreibich, Beverly A. S. Reyes, Andre L. Curtis, Laurel Ecke, Charles Chavkin, Elisabeth J. Van Bockstaele, and Rita J. Valentino

#### NEUROBIOLOGY OF DISEASE

- 6333 **Complement C3 Deficiency Leads to Accelerated Amyloid  $\beta$  Plaque Deposition and Neurodegeneration and Modulation of the Microglia/Macrophage Phenotype in Amyloid Precursor Protein Transgenic Mice**  
Marcel Maier, Ying Peng, Liying Jiang, Timothy J. Seabrook, Michael C. Carroll, and Cynthia A. Lemere
- 6419 ***Drosophila alicorn* Is a Neuronal Maintenance Factor Protecting against Activity-Induced Retinal Degeneration**  
Miloš R. Spasić, Patrick Callaerts, and Koenraad K. Norga
- 6526 **Functional Stability of Retinal Ganglion Cells after Degeneration-Induced Changes in Synaptic Input**  
David J. Margolis, Gregory Newkirk, Thomas Euler, and Peter B. Detwiler

Persons interested in becoming members of the Society for Neuroscience should contact the Membership Department, Society for Neuroscience, 1121 14th St., NW, Suite 1010, Washington, DC 20005, phone 202-962-4000.

Instructions for Authors are available at <http://www.jneurosci.org/misc/itoa.shtml>. Authors should refer to these Instructions online for recent changes that are made periodically.

*Brief Communications* Instructions for Authors are available via Internet ([http://www.jneurosci.org/misc/ifa\\_bc.shtml](http://www.jneurosci.org/misc/ifa_bc.shtml)).

Submissions should be submitted online using the following url: <http://sfn.manuscriptcentral.com>. Please contact the Central Office, via phone, fax, or e-mail with any questions. Our contact information is as follows: phone, 202-962-4000; fax, 202-962-4945; e-mail, [jn@sfn.org](mailto:jn@sfn.org).