This Week in The Journal

Journal Club

4436 The Fetal Functional Connectome Offers Clues for Early Maturing Networks and Implications for Neurodevelopmental Disorders
Anthi C. Krontira and Cristiana Cruceanu

Research Articles

CELLULAR/MOLECULAR

4439 Intracellular Calcium Responses Encode Action Potential Firing in Spinal Cord Lamina I Neurons
Erika K. Harding, Bruno Boivin, and Michael W. Salter

4457 Disruption of tmc1/2a/2b Genes in Zebrafish Reveals Subunit Requirements in Subtypes of Inner Ear Hair Cells
Eliot T. Smith, Itallia Pacentine, Anna Shipman, Matthew Hill, and Teresa Nicolson

SYSTEMS/CIRCUITS

4469 Experience-Dependent Coding of Time-Dependent Frequency Trajectories by Off Responses in Secondary Auditory Cortex
Kelly K. Chong, Dakshitha B. Anandakumar, Alex G. Dunlap, Dorottya B. Kacsoh, and Robert C. Liu

4483 Network Architecture of Gap Junctional Coupling among Parallel Processing Channels in the Mammalian Retina

4512 Spike Afterpotentials Shape the in-Vivo Burst Activity of Principal Cells in Medial Entorhinal Cortex
Dóra E. Csordás, Caroline Fischer, Johannes Nagele, Martin Stemmler, and Andreas V.M. Herz

4525 Parietal Cortex Integrates Saccade and Object Orientation Signals to Update Grasp Plans
Bianca R. Baltaretu, Simona Monaco, Jena Velji-Ibrahim, Gaelle N. Luabeya, and J. Douglas Crawford

Cover legend: This image shows a computer rendering of 145 rabbit ON cone bipolar cells contained within Retinal Connectome 1 (RC1), color coded according to class. We defined seven classes of bipolar cells based on ultrastructural reconstruction of morphology and circuit connectivity in a 0.25 mm diameter volume of rabbit retina captured at synaptic resolution. Cells were classified based on morphology and connectivity, including novel gap junctional coupling motifs, and are colored according to class: CBb3 (red), CBb3n (orange), CBb4 (lime), CBb4w (green), CBb5 (cyan), CBb6 (purple), and CBbwf (gray). Gap junctions between ON cone bipolar cells provide extensive lateral paths both within and across these parallel visual processing channels of the mammalian retina. For more information, see the article by Sigulinsky et al. (pages 4483–4511).
BEHAVIORAL/COGNITIVE

4536  The Domain-General Multiple Demand (MD) Network Does Not Support Core Aspects of Language Comprehension: A Large-Scale fMRI Investigation
Evgeniia Diachek, Idan Blank, Matthew Siegelman, Josef Affourtit, and Evelina Fedorenko

4551  Conserved Serotonergic Background of Experience-Dependent Behavioral Responsiveness in Zebrafish (Danio rerio)
Zoltán K. Varga, Diána Pejtsik, László Biró, Áron Zsigmond, Máté Varga, Blanka Tóth, Vilmos Salamon, Tamás Annus, Éva Mikics, and Manó Aliczki

4565  Pupil Diameter Tracks Statistical Structure in the Environment to Increase Visual Sensitivity
Caspar M. Schwiedrzik and Sandrin S. Sudmann

NEUROBIOLOGY OF DISEASE

4576  Structural Variant in Mitochondrial-Associated Gene (MRPL3) Induces Adult-Onset Neurodegeneration with Memory Impairment in the Mouse
Lindsay S. Cahill, Jessie M. Cameron, Julie Winterburn, Patrick Macos, Johnathan Hoggarth, Misko Dzamba, Michael Bradno, Lauryl M.J. Nutter, Thomas J. Sproule, Robert W. Burgess, R. Mark Henkelman, and John G. Sled

4586  An Epilepsy-Associated SV2A Mutation Disrupts Synaptotagmin-1 Expression and Activity-Dependent Trafficking
Callista B. Harper, Christopher Small, Elizabeth C. Davenport, Darryl W. Low, Karen J. Smillie, Ramón Martinez-Mármol, Frédéric A. Meunier, and Michael A. Cousin

4596  Reduced Expression of the PP2A Methylesterase, PME-1, or the PP2A Methyltransferase, LCMT-1, Alters Sensitivity to Beta-Amyloid-Induced Cognitive and Electrophysiological Impairments in Mice
Agnieszka Staniszewski, Hong Zhang, Kesava Asam, Rose Pitstick, Michael P. Kavanaugh, Ottavio Arancio, and Russell E. Nicholls

4609  Idebenone Has Distinct Effects on Mitochondrial Respiration in Cortical Astrocytes Compared to Cortical Neurons Due to Differential NQO1 Activity
Sausan M. Jaber, Shealinnia X. Ge, Joshua L. Milstein, Jonathan W. VanRyzin, Jaylyn Waddell, and Brian M. Polster

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