

# POSTERS SFN 2017



## SATURDAY, NOVEMBER 11

1:00-5:00pm

**56.1.** Human Brainbow: Multi-color neuronal labeling in human Ex vivo brain slices for high-throughput morphological analysis in health and disease

\*S.-H. Sheu, P. Adstamongkonkul, J. T. Ting, L. Hoyo, I. Boothby, E. Lein, J. W. Lichtman, D. E. Clapham

**56.01.** The transcriptional signature of von Economo neurons in human fronto-insular cortex

\*R.D. Hodge, J.L. Close, T.E. Bakken, J.T. Ting, J.A. Miller, B.D. Aebermann, M. Novotny, S.I. Shehata, P. Venepally, K.A. Smith, D.N. Tran, J. Mccorison, F. Diez Fuertes, S.M. Sunkin, R.H. Scheuermann, R.S. Lasken, E.S. Lein

**56.02.** Characterization of human cortical neurons using an In vitro single cell characterization platform

\*J. Berg, S.A. Sorensen, J.T. Ting, C.A. Anastassiou, C. Cobbs, N. Dee, S.-L. Ding, N.W. Gouwens, R.P. Gwinn, C.D. Keene, A.L. Ko, C. Lee, M. Mcgraw, P.R. Nicovich, J.G. Ojemann, L. Potekhina, S.M. Sunkin, A. Szafer, Z. Zhou, C. Koch, H. Zeng, E. Lein

**56.03.** Single nucleus and single cell RNA-sequencing identify equivalent neuronal types in mouse visual cortex

\*J.A. Miller, T. Bakken, R.D. Hodge, Z. Yao, D. Bertagnolli, T. Casper, N. Dee, J. Goldy, L.T. Gray, K. Lathia, S. Parry, C. Rimorin, S. Shehata, M. Tieu, K. Smith, B. Tasic, H. Zeng, E. Lein

**56.04.** Divergent electrophysiological properties of supragranular pyramidal neurons in the human vs. mouse cerebral cortex

\*B.E. Kalmbach, R. De Frates, P.N. Chong, C. Cobbs, R.P. Gwinn, A.L. Ko, J.G. Ojemann, E.S. Lein, J.T. Ting

**56.05.** Single cell transcriptomics reveals pan-cortical GABAergic and region-specific glutamatergic cell types in adult primary visual cortex and anterior lateral motor cortex

\*L.T. Gray, Z. Yao, K. Smith, T.-N. Nguyen, E. Garren, D. Bertagnolli, J. Goldy, S. Viswanathan, M. Economo, C. Rimorin, K. Lathia, N. Shapovalova, D. Hirschstein, O. Fong, V. Menon, J. Miller, T. Bakken, M. Tieu, J. Gray, A. Williford, R. Larsen, P. Groblewski, A. Szafer, N. Dee, L. Looger, K. Svoboda, C. Koch, H. Zeng, B. Tasic

**56.06.** Verification of transcriptomic cell type markers and cell type location in mouse visual cortex and anterior lateral motor cortex by RNA In situ hybridization

\*E.J. Garren, T.-N. Nguyen, K. Bickley, L.T. Gray, Z. Yao, T.T. Daigle, H. Zeng, B. Tasic

**56.07.** Comprehensive census of human cortical cell types defined by single nucleus RNA-sequencing

\*T. Bakken, R.D. Hodge, J.A. Miller, J.L. Close, Z. Yao, L.T. Gray, S.I. Shehata, T. Nguyen, J. Goldy, D. Bertagnolli, C. Rimorin, K. Lathia, M. Tieu, J. Gray, T. Casper, E. Barkan, M. Kroll, N. Dee, K. A. Smith, B. Tasic, H. Zeng, S.M. Sunkin, C. Koch, E.S. Lein

**56.08.** Taxonomy of morpho-electric cell types in adult mouse Primary Visual Cortex

\*S.A. Sorensen, J. Berg, N.W. Gouwens, C. Lee, K. Godfrey, N. Dee, M. Mcgraw, P.R. Nicovich, L. Potekhina, Z. Zhou, C. Anastassiou, J. Ting, A. Szafer, S. Sunkin, C. Koch, E. Lein, H. Zeng

**56.09.** Towards a viral reporter toolbox for prospective marking of transcriptomic cell classes/types in human and mouse neocortex

J. Mich, B.P. Levi, J.T. Ting, A. Cetin, B.E. Kalmbach, B.M. Fall, Z. Yao, J.A. Miller, T.E. Bakken, S. Yao, M.T. Mortrud, B. Ouellette, L.T. Gray, T.N. Nguyen, R.P. Gwinn, C. Cobbs, A.L. Ko, B. Tasic, H. Zeng, E.S. Lein

**56.14.** Using high density extracellular recordings to classify spike waveforms in the mouse brain

\*X. Jia, J. Siegle, C. Bennett, S. Gale, D. Denman, C. Koch, S. Olsen

## SUNDAY, NOVEMBER 12

8:00am-12:00pm

**147.08.** A Brain Observatory for visual behavior: Development and scaling of a change detection task in mice

\*M. Garrett, P.A. Groblewski, J.T. Kiggins, D.R. Ollerenshaw, S. Manavi, S. Cross, D. Williams, S. Mihalas, S.R. Olsen



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**147.09.** The incorporation and uses of eye tracking in a large-scale pipeline for the allen institute's brain observatory  
*\*E.K. Lee, M. Ramadan, J.D. Larkin, C. White, F. Griffin, K. Roll, T. Nguyen, S. Caldejon, S. Cross, W.B. Wakeman, N. Sjoquist, J. Perkins, D. Feng, S.E. de Vries, C. Slaughterbeck, D. Sullivan, D. Williams, D. Millman, N.H. Cain, G.K. Ocker, P. Ledochowitsch, A. Steger, R. Valenza, K. Mace, S. Whiteside, E. Liang, L. Ng, C. Farrell, M.A. Buice, J. Lecoq*

**148.01.** Measuring cell-type specific layer 4 connectivity using high throughput conjugate array tomography and targeted multi-patch electrophysiology  
*F.C. Collman, B.R. Lee, A.D. Baden, S. Davis, O. Gliko, T. Karlsson, M.M. Naugle, K. Parker, E. Perlman, J. Schardt, R. Serafin, S. Seshamani, G.J. Soler-Llavina, R. Burns, S.J. Smith*

**148.02.** Investigation of synaptic connectivity in mouse visual cortex by two-photon optogenetic stimulation  
*\*C.A. Baker, A. Bosma-Moody, T.A. Hage, G.J. Murphy*

**148.03.** Connectivity in L5 of mouse primary visual cortex using a multi-patch pipeline  
*P.A. Davoudian, A. Hoggarth, L. Campagnola, \*S. Seeman, M. Schroedter, C. Farrell, H. Zeng, R. Larsen, G.J. Murphy, T. Jarsky*

**148.04.** Synaptic dynamics of the cortical layer 5 microcircuit  
*S.C. Seeman, L. Campagnola, A. Hoggarth, \*P.A. Davoudian, G.J. Murphy, T. Jarsky*

**148.05.** Distinct functional roles of layer 2/3 Somatostatin-expressing inhibitory interneurons in mouse primary visual cortex  
*\*L. Li, U. Knoblich, C. Reid, H. Zeng, C. Koch*

**148.17.** Spike time reliability across populations in mouse LGN and V1  
*\*D.J. Denman, G.K. Ocker, S. Durand, Y.N. Billeh, N.W. Gouwens, M.A. Buice, S.E. de Vries, R. Reid*

### 1:00-5:00pm

**207.02.** An anatomical correlate of the mouse default mode network  
*\*J.D. Whitesell, A. Liska, N. Graddis, P. Bohn, S. Mihalas, A. Gozzi, J. A. Harris*

**259.02.** Whole-brain reconstruction and classification of spiny claustrum neurons of mice  
*\*Y. Wang, H. Gong, Y. Li, X. Kuang, T.L. Daigle, L. Madisen, H. Gu, M. Mills, L. Gray, B. Tasic, A. Li, J.A. Harris, Q. Luo, C. Koch, H. Zeng*

**259.03.** The Allen Mouse Common Coordinate Framework: Providing spatial integration of data and knowledge on cells, circuits and function  
*D. Feng, Q. Wang, S.-L. Ding, N. S. Graddis, P. Lesnar, Y. Li, J. Royall, S.M. Sunkin, W. Wakeman, H. Zeng, C. Koch, \*J.A. Harris, L. Ng*

**259.04.** Anterograde tracing and anatomical template based brain-wide mapping of white matter fiber tracts in a 3-D common coordinate framework of mouse brain  
*\*S.-L. Ding, J. Royall, P. Lesnar, Q. Wang, K. Hirokawa, Y. Li, A. Ho, C. Koch, S. Sunkin, H. Zeng, L. Ng, J. A. Harris*

**259.05.** The Allen mouse common coordinate framework: A 3D delineation of the mouse gray matter with multi-modality references  
*\*Q. Wang, J. Royall, P. Lesnar, S.-L. Ding, K. Hirokawa, Y. Li, A. Ho, W. Wakeman, N. Graddis, S. Sunkin, C. Koch, L. Ng, H. Zeng, J.A. Harris*

## MONDAY, NOVEMBER 13

### 8:00am-12:00pm

**312.11.** The transformation of visual information through the mouse visual cortex  
*\*S.E. de Vries, M.A. Buice, J. Lecoq, G.K. Ocker, D. Millman, N.H. Cain, D. Feng, R. Reid*

**312.17.** The Allen Brain Observatory: A standardized and ongoing survey of evoked neuronal activity in the mouse visual cortex  
*\*J. Lecoq, J.D. Larkin, K. Roll, C. White, F. Griffin, T. Nguyen, S. Cross, R. Valenza, S. Caldejon, E.K. Lee, A. Steger, S.E. de Vries, M.A. Buice, M. Stoecklin, P.A. Groblewski, D. Sullivan, W. Wakeman, N. Bowles, J. Perkins, A. Williford, A. Ho, L. Kuan, D. Feng, C. Farrell, C. Slaughterbeck, H. Zeng, C. Koch*

**312.18.** Relationship among sensory tuning profiles across stimulus sets in mouse primary visual cortex  
*\*D. Millman, N. Cain, G. Ocker, P. Ledochowitsch, C. Reid, J. Lecoq, M. Buice, S. de Vries*

**313.1.** A link between brains, learning and recurrent neural networks  
*\*M. Stern, K. Champion, A. Rokem, D.R. Ollerenshaw, S. Manavi, S.R. Olsen, E.T. Shea-Brown*

**344.04.** The Crystal Skull: A chronic mouse preparation providing long-term optical access to neurons across the dorsal neocortex  
*\*T. Kim, Y. Zhang, J. Lecoq, J. Jung, J. Li, H. Zeng, C. M. Niell, M. Schnitzer*

**346.24.** Automated 3D EM and functional brain image co-registration using deep learning  
*\*F. Long, A. Bleckert, J. Reimer, E. Froudarakis, A. Tolias, R. Young, N. da Costa, C. Reid, L. Ng*

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1:00-5:00pm

**436.09.** Novel knockin mouse lines for Cre-dependent sparse labeling of genetically-defined, single neurons for brainwide morphological analyses

\*M.B. Veldman, N.N. Foster, M. Zhu, M. Becerra, T.L. Daigle, H. Zeng, H. Dong, X.W. Yang

## TUESDAY, NOVEMBER 14

8:00am-12:00pm

**474.18.** Physiology, morphology and biophysically-realistic computational models of the human epileptic hippocampus

\*A. Buchin, R. De Frates, P. Chong, C.S. Gerard, B.E. Kalmbach, S. McConoughey, U. Rutishauser, R. Gwinn, S. A. Sorensen, J.T. Ting, C.A. Anastassiou

**490.13.** Receptive field estimation from spikes using models of calcium dynamics

\*P. Ledochowitsch, N. Cain, R. Iyer, S. Durand, L. Huang, L. Li, J. Siegle, X. Jia, G. Ocker, D. Millman, K. Lepage, H. Zheng, S. Olsen, C. Reid, S. Mihalas, S. de Vries, M. Buice

**490.14.** Measuring cellular-level interactions across multiple areas in mouse visual cortex using parallel silicon probe recordings

\*J.H. Siegle, X. Jia, D.J. Denman, R. Dietzman, C. Koch, S.R. Olsen

**490.15.** High contrast tissue preparation for large scale serial section electron microscopy of mice and humans

\*M.M. Takeno, J. Buchanan, A. Bleckert, T. Daigle, R.P. Gwinn, C.S. Cobbs, H. Zeng, N.M. da Costa

**490.16.** New TIGRE 2.0 transgenic reporters for functional analysis of neural circuits

\*T.L. Daigle, L. Siverts, H. Gu, M. Mills, M. Walker, E. Garren, L. Gray, L. Madisen, B. Tasic, H. Zeng

**490.17.** Cell-type-dependent relationship between In vivo calcium events and spiking activity in transgenic mouse lines

U. Knoblich, \*L. Huang, P. Ledochowitsch, M.A. Buice, J. Waters, C. Reid, C. Koch, H. Zeng, L. Li

**491.07.** Functional and anatomical subdivisions of mouse visual thalamic area LP

\*C. Bennett, S.D. Gale, S.R. Olsen

**528.1.** Wavefront engineered multiphoton microscopy for functional imaging of mouse visual cortex during visual behavior

\*R. Liu, N. Ball, J. Brockill, S. Nishiwaki, A. Steger, D. Sullivan, C. Slaughterbeck, C. Farrell, J. Lecoq, P. Saggau

1:00-5:00pm

**622.08.** Automated antibody screening via probabilistic synapse detection

\*A.K. Simhal, K.D. Micheva, J.S. Trimmer, F.C. Collman, R.J. Weinberg, S.J. Smith, G. Sapiro

**622.09.** Comparing mouse and human synapses with automated probabilistic synapse analysis

\*K.D. Micheva, A.K. Simhal, J.T. Ting, A.L. Ko, W.W. Seeley, E.F. Chang, A. Nana Li, E. Lein, F.C. Collman, D.V. Madison, R. J. Weinberg, S.J. Smith, G. Sapiro

**624.17.** Batch processing of ultrathin sections for large-scale, serial section electron microscopy

\*T. Lee, D.J. Bumbarger, R. Reid, C. Forest

## WEDNESDAY, NOVEMBER 15

8:00am-12:00pm

**721.21.** Building a prototype application for visualizing neuroanatomy and quantitative cell features from the Allen Brain Atlas in virtual space

\*A. Bernard, B. Blanchard, F. Lee, T. Dolbeare, N. Graddis, D. Toloudis, N. Gouwens, D. Feng, L. Ng, C. Koch

1:00-5:00pm

**812.07.** Viral techniques for the next generation connectivity atlases and cell type characterization

\*S. Yao, B. Ouellette, T. Daigle, M. Mortrud, T.R. Reardon, P. Groblewski, A.J. Murray, E.M. Callaway, S. McConoughey, J.A. Harris, H. Zeng, A.H. Cetin

**813.03.** Methodology and software tools for building and simulating large-scale biophysically detailed models of cortical circuits

\*Y.N. Billeh, S.L. Gratiy, C. Mitelut, K. Dai, D. Feng, N.W. Gouwens, N.H. Cain, C. Koch, C.A. Anastassiou, A. Arkhipov

