



1.1 A 3D digital human brain common coordinate framework: manual annotation of cortical and subcortical regions of MNI_ICBM152 MRI template

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1.2 Human dentate gyrus granule cell morpho-electric properties are correlated with the severity of hippocampal sclerosis

A. Buchin*, A. Nandi, R. de Frates, P. Chong, R. Mann, J. Berg, K. Dai, U. Rutishauser, R. Gwinn, S. Sorensen, J. Ting, C. A. Anastassiou

1.3 RSeq Core 2018

A. Glandon*, A. Torkelson*, C. Rimorin*, D. Bertagnolli, D. McMillen*, J. Goldy, K. Ward*, M. Tieu*, T. Pham, N. Dee, T. Casper, FACS Core, K. Smith

1.4 A large-scale, standardized physiological survey reveals higher order coding throughout the visual cortex

S. de Vries*, J. Lecoq, M. Buice*, P. Groblewski, G. Ocker, M. Oliver*, D. Feng, N. Cain, P. Ledochowitsch, D. Millman et al.

1.5 Stimulus and state-dependence of interactions between vip and sst cells in mouse primary visual cortex

D. Millman*, G. Ocker, N. Cain, P. Ledochowitsch, R. Larsen, M. Oliver, R. Reid, M. Buice, S. de Vries

1.6 Ca²⁺ imaging favors bursty neurons.

P. Ledochowitsch*, N. Cain, J. Siegle, X. Jia, G. Ocker, M. Oliver, S. Olsen, S. de Vries, M. Buice

1.7 Optimization of a multipurpose removeable cranial window

J. Luviano*, G. Heller*, J. Siegle, A. Williford, P. Groblewski

1.8 Neuropixels Brain Observatory: Operations

S. Durand*, J. Siegle*, G. Heller*, T. Ramirez*, R. Nicovich, X. Jia, S. Olsen

1.9 N-way cell matching for visual behavioral experiments

F. Long*, M. Garrett, S. de Vries, J. Lecoq, L. Kuan, C. Thompson, D. Feng, W. Wakeman, J. Galbraith, L. Ng

1.10 Motion correction of high noise 2P video

J. Galbraith*, L. Kuan

1.11 Morphological features and classification algorithm for 2P segmentation

L. Kuan*, J. Galbraith

1.12 Mapping neurons to CCF - registration of the fMOST brain volume

Y. Li*, J. Galbraith, W. Wakeman, Z. Zhou, Y. Wang, J. Royall, S. Sorensen, J. Harris, H. Zeng, L. Ng

1.13 Registration of laminar borders across individuals improves the relative positioning of neurons

C. Lee*, R. Dalley, A. Mukora, D. Sandman, G. Williams, S. Kebede, S. Sorensen, U. Sümbül

1.14 Generating all-active biophysical models for human and mouse neurons

A. Nandi*, A. Buchin, C.A. Anastassiou

1.15 Reconstucting for IVSCC-MET

R. Dalley*, D. Sandman*, G. Williams*, A. Mukora*, S. Kebede*, K. Link, J. Berg, B. Lee, J. Ting, M. McGraw, K. Smith, B. Tasic, L. Potekhina, R. Nicovich, N. W. Gouwens, C. Lee, S-L Ding, A. Szafer, H. Peng, H. Zeng, J. A. Harris, S. Sorensen

1.16 Tissue preparation, image acquisition and analysis protocols for high-throughput array tomography

J. Schardt*, L. Elabbady, R. Serafin, M. T. Karlsson, S. J Smith

1.17 Brain Cell Data Center: Towards a comprehensive brain cell atlas integrating molecular, anatomical, and physiological properties of brain cell types

L. Ng, P. Leahy*, C. Thompson, D. Feng, G. Hsu, G. Acharya, T. Arnett, C. Barber, T. Mollenkopf, S. Mufti, M. Hawrylycz

1.18 The ins and outs of Ophys' Brain Observatory

T. V. Nguyen*, S. Caldejon, J. Larkin, E.K. Lee, S. Seid, J. Luviano, I. Kato, R. Valenza, J. Lecoq

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1.19 Deep imaging in volume labeled cortex for functional connectomics

K. Takasaki, J. Larkin, R. Abbasi-Asl, D. Denman, D. Millman, S. de Vries, M. Takeno, N.M. da Costa, R.C. Reid, J. Waters*

1.20 Comparison between model and experiments: features of the extracellular spike waveform vary with different cell types

Y. Wei, X. Jia, A. Nandi, K. Dai, S. Olsen, C.A. Anastassiou*

1.21 Novel genomic approaches to quantify morphological and physiological properties of single neurons within cell-type defined neural projections

S. Yao, P. Balaram, B. Ouellette, T. Zhou, M. Mortrud, S. Chatterjee, T. L. Daigle, P. Groblewski, J. A. Harris, B. Tasic, Y. Wang, H. Zeng, A. Cetin*

1.22 Towards a viral reporter toolbox for prospective marking human and mouse neocortical cell classes and types

B. P. Levi, J. K. Mich*, J. T. Ting*, L. T. Graybuck, A. Cetin, B. E. Kalmbach, S. Yao, E. H. Hess, S. Somasundaram, J. A. Miller, M. T. Mortrud, J.T. Mahoney, R. P. Gwinn, C. Cobbs, A. L. Ko, C. D. Keene, B. Tasic, H. Zeng, E.S. Lein*

1.23 Identification of genetic markers for cortical areas using a Random Forest classification routine and the Allen Mouse Brain Atlas

N. Weed, T. Bakken, N. Graddis, N. Gouwens, D. Millman, M. Hawrylycz, J. Waters*

1.24 Establishing correspondence between morphology, electrophysiology, synaptic connectivity and gene expression in specific cell types in local human cortical networks

M. Kim, E. Thomsen, C. Radaelli, B. Long, R. Nicovich, C. Lee, S. Kebede, S. Sorensen, N. Gouwens, J. Berg, B. Kalmbach, R. Hodge, J. Close, J. Miller, T. Bakken, J. Ting, B. Levi, L. Campagnola, C. Koch, T. Jarsky, G. Murphy, E.S. Lein

1.25 Patterns of synaptic connectivity within and across layers of V1 revealed by two-photon optogenetic stimulation

T. Hage, C. Baker, A. Bosma-Moody, L. Huang, G. Murphy*

1.26 Characterization of short-term synaptic plasticity in mouse primary visual cortex

J. Lee, L. Campagnola, S. Seeman, P. Davoudian, A. Hoggarth, T. Jarsky, S. Mihalas*

1.27 Recurrent excitatory connectivity in mouse and human cortex

S. Seeman, L. Campagnola, P. Davoudian, A. Hoggarth, T. Hage, A. Bosma-Moody, C. Baker, J. Lee, S. Mihalas, C. Teeter, A. Ko, J. Ojemann, R. Gwinn, D. Silbergeld, C. Cobbs, J. Phillips, E. Lein, G. Murphy, C. Koch, H. Zeng, T. Jarsky*

1.28 Multi-modal investigation of subthreshold and spiking entrainment to externally imposed electric fields in mouse V1

F. Baftizadeh, S.Y. Lee, S.L. Gratiy, T. Cunnington, K. Dai, C.A. Anastassiou*



2.1 Testing the astronomical observatory model in systems neuroscience: The Allen Brain Observatory - Openscope

J. Lecoq, C. L. Thompson, G. K. Ocker, M. Valley, Y. N. Billeh, J. Perkins, S. Naylor, C. Koch*

2.2 Interoperation, enrichment and information discovery of the Allen Institute for Brain Science data corpus through an integrated data framework

P. Leahy, G. Acharya, G. Hsu, C. Barber, T. Arnett, D. Feng, C. Thompson, L. Ng, T. Mollenkopf, A. Bernard, M. Hawrylycz, S. Mufti*

2.3 Model of motion detection predicts direction selectivity dependence on spatial and temporal stimulus parameters as observed in the mouse visual cortex.

Y. N. Billeh, R. Iyer*, G.K. Ocker, M.A. Buice, S. Mihalas, A. Arkhipov, S. de Vries**

2.4 Behind the scenes of the brain-map.org portal: Data-driven, data-centric product development

L. Ng, T. Mollenkopf, D. Feng, F. Collman, J. Kiggins, P. Leahy, T. Dolbeare, B. Blanchard, F. Lee, J. Pawlosky, J. Evans, J. Hernandez, M. Hemeyer, S. Down, B. Baker, A. Bernard*

2.5 A scoring system for evaluating automated image segmentation of amyloid beta plaques in mouse models of Alzheimer's disease

A. Mukora, A. Buckley, J. Whitesell, L. Kuan, N. Graddis, J. Knox, P. Bohn, K. Hirokawa, J. Harris*

2.6 Building and simulating a biophysically detailed network model of the mouse primary visual cortex

Y. N. Billeh, S. L. Gratiy, K. Dai, R. Iyer, N. W. Gouwens, S. Mihalas, C. Koch, A. Arkhipov*

2.7 2018: A year in imaging

S. Ransford, K. Berry, M. Gorham, S. Lee, L. Potekhina, R. Nicovich*

2.8 Cross-resolution scalable circuit modeling with the Brain Modeling Toolkit (BMTK) and SONATA data format

K. Dai, Y. Billeh, S. Gratiy, M. Buice, N. Cain, D. Feng, N. Gouwens, R. Iyer, F. Bafizadeh, S. Mihalas, A. Arkhipov*

2.9 Imaging of cortical column interaction in behaving mouse using multi-plane two-photon mesoscopy

N. Orlova, D. Tsyboulski, S. Seid, S. Caldejon, J. Lecoq, P. Saggau*

2.10 Functional interrogation of claustrum involvement in a visual change detection task

D.R. Ollerenshaw, J. Davis, A.M. Shelton, Y. Wang, H. Zeng, S.R. Olsen, C. Koch*

2.11 Longitudinal imaging of mesoscale cortical activity across training on visually-guided task

S. Manavi, M. Stern, M. Valley, D. Ollerenshaw, K. Champion, E. Shea-Brown, S.R. Olsen*

2.12 Dual-plane two-photon mesoscopy: system design and characterization

D. Tsyboulski, N. Orlova, J. Lecoq, F. Griffin, S. Seid, P. Saggau*

2.13 Large-scale calcium imaging reveals cell class-specific activity in a visual change detection task

M. Garrett, S. Manavi*, P. Groblewski, J. Kiggins, D. Ollerenshaw, K. Roll, L. Casal, A. Cho, A. Leon, K. Mace, C. Thompson, A. Williford, S. Olsen*

2.14 Generation of vectors and characterization of transgenic mouse driver lines

L. Siverts, M. Walker*, G. Lenz*, T. Nguyen, E. Szelenyi, H. Zeng, B. Tasic, and T. L. Daigle*

2.15 Prospective, brain-wide labeling of specific neuronal cell types with enhancer-driven AAVs

L. Graybuck, A. Sedenio-Cortes*, T.N. Nguyen, M. Walker, E. Szelenyi, G. Lenz, L. Sieverts, T.K. Kim, E. Garren, B. Kalmbach, S. Yao, M. Mortrud, J. Mich, K. Smith, Z. Yao, A. Cetin, B. Levi, E. Lein, J. Ting, H. Zeng, T. Daigle, B. Tasic*

2.16 Machine learning techniques for the automatic segmentation of sparse and dense neurites

K. Link, R. Gala, S. Kinn, S. Sorensen, R.C. Reid, U. Sümbül*

2.17 Adapting the 'Patch-seq' protocol to scaled morphological, electrophysiological, and transcriptomic data generation: keys to maximizing triple modality data

K. Hadley, B. Lee, A. Budzillo, T. Jarsky, T. Braun, D. Hill, L. Kim, R. Mann, L. Ng, A. Oldre, R. Rajanbabu, R. Dalley, N. Gouwens, T. K. Kim, O. Penn, K. Smith, S. Sorensen, B. Tasic, J. Ting, Z. Yao, C. Farrell, J. Berg, G. Murphy, H. Zeng*

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2.18 Cost efficient, sensor-matched, even-field illumination for single molecule fluorescent imaging

K. Berry, B. Long, M. Taormina, R. Nicovich*

2.19 Single-cell multimodal correspondence typing through patch clamp electrophysiology, two-photon optogenetics, and multiplexed FISH in thick tissue

R. Nicovich, B. Long, M. Taormina, T. Nguyen, E. Thomsen, B. Levi, C. A. Baker, T. A. Hage, A. Bosma-Moody, B. Tasic, J. Close, E. Lein, H. Zeng*

2.20 Exploring neuronal cell types in mouse and human brain using multiplex fluorescence *in situ* hybridization

B. R. Long, J. L. Close, B. Tasic, B. P. Levi, E. J. Garren, Z. Maltzer, T. Nguyen, E. Thomsen, T. Bakken, J. A. Miller, P. R. Nicovich, E. Lein, H. Zeng*

2.21 Mapping human neuronal subtypes with spatial transcriptomics

Z. Maltzer, E. Thomsen, T. Nguyen, E. Garren, E. Lein, H. Zeng, B. Long, B. Levi, R. Nicovich, B. Tasic, J. Close*

2.22 Machine learning for conjugate light-electron array tomography

O. Gliko, S. Seshamani, F. Collman, L. Elabbady, M. Karlsson, M. Naugle, R. Serafin, J. Schardt, S.J. Smith

2.23 Transcriptomic evidence for dense peptidergic neuromodulation networks within mouse neocortex

S. J. Smith, U. Sümbül, R. Gala, F. Collman, L. Elabbady, O. Gliko, L. T. Graybuck, J. Miller, T. Bakken, M. Karlsson, R. Serafin, J. Schardt, Z. Yao, E. Lein, B. Tasic, H. Zeng, M. Hawrylycz*

2.24 Sample preparation for high throughput functional connectomics using calcium imaging and transmission electron microscopy

J. Buchanan, M. M. Takeno, A. L. Bodor, D. J. Bumbarger, A. A. Bleckert, M. Froudarakis, J. Reimer, A. S. Tolia, R. Reid, N. M. Da Costa

2.25 Modeling a human layer 2/3 network with realistic recurrent connectivity and active dendritic properties

T. Chartrand, A. Nandi, C. Anastassiou*

2.26 A coupled autoencoder framework for statistical descriptions of cell types

R. Gala, U. Sümbül*

2.27 Use of a centralized transgenic mouse breeding colony to maximize breeding productivity and operational efficiency

V. Wright, R. Larsen*, M. Robertson*, D. Suh, A. Nelson, C. Halterman, M. Desierto, K. Ronellenfitch, T. Daigle, L. Esposito**

2.28 The ideal mouse - breeding, genotyping, and selection of transgenic mice at the Allen Institute

J. Timberlake, C. Phalen, R. Ferrer, J. Pendergraft, A. Nelson, C. Halterman, D. Suh, M. Desierto, M. Robertson, K. Ronellenfitch, V. Wright

2.29 Expanding the mouse genetic toolkit: New transgenic and viral strategies for cell type-specific investigations

E. Szelenyi, L. Siverts, M. Walker, G. Lenz, L. Graybuck, A. Seden-Cortes, R. Larsen, L. Madisen, S. Yao, A. Cetin, H. Zeng, B. Tasic, T.L. Daigle*