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Current Positions

2015-present	Post-Doctoral Fellow, Columbia Department of Statistics Advised by Professor Liam Paninski
2015-present	Research Scientist, Stanford Department of Bioengineering Advised by Professor Karl Deisseroth
Appointed 2016	Simons Society of Fellows Junior Fellow

Education

2005	BS in Biology (Advisor: Russell Fernald), Stanford
2005	BA in Psychology (Advisor: Ewart A. C. Thomas), Stanford
2008	MSc in Statistics (Advisors: Bradley Efron and Joseph Romano), Stanford
2015	PhD in Neurosciences (Advisors: Karl Deisseroth and Patrick Suppes), Stanford

Publications

2016

Emily A. Ferenczi, Kelly A. Zalocusky, Conor Liston, **Logan Grosenick**, Melissa R. Warden, Debha Amatya, Kiefer Katovich, Hershel Mehta, Brian Patenaude, Charu Ramakrishnan, Paul Kalanithi, Amit Etkin, Brian Knutson, Gary H. Glover, and Karl Deisseroth. Prefrontal cortical regulation of brainwide circuit dynamics and reward-related behavior. *Science*, 351(6268), 2016.

2015

Sophie Aimon, Takeo Katsuki, **Logan Grosenick**, Michael Broxton, Karl Deisseroth, and Ralph J Greenspan. Activity sources from fast large-scale brain recordings in adult drosophila. *bioRxiv*, 2015.

John S Ho, Yuji Tanabe, Shrivats Mohan Iyer, Amelia J Christensen, **Logan Grosenick**, Karl Deisseroth, Scott L Delp, and Ada SY Poon. Self-tracking energy transfer for neural stimulation in untethered mice. *arXiv preprint arXiv:1503.01493*, 2015.

Kate L Montgomery, Alexander J Yeh, John S Ho, Vivien Tsao, Shrivats Mohan Iyer, **Logan Grosenick**, Emily A Ferenczi, Yuji Tanabe, Karl Deisseroth, Scott L Delp, et al. Wirelessly powered, fully internal optogenetics for brain, spinal and peripheral circuits in mice. *Nature methods*, 2015.

Logan Grosenick*, James H. Marshal*, and Karl Deisseroth. Closed-loop and activity-guided optogenetic control. *Neuron*, 86(1):106–39, 2015 (*equal contributors).

Raju Tomer, Matthew Lovett-Barron, Isaac Kauvar, Aaron Andalman, Vanessa M Burns, Sethuraman Sankaran, **Logan Grosenick**, Michael Broxton, Samuel Yang, and Karl Deisseroth. Sped light sheet microscopy: Fast mapping of biological system structure and function. *Cell*, 163(7):1796–1806, 2015.

2014

Genevera I. Allen, **Logan Grosenick**, and Jonathan E. Taylor. A generalized least squares matrix decomposition. *Journal of the American Statistical Association*, 109:145–159, 2014.

Noy Cohen, Samuel Yang, Aaron Andalman, Michael Broxton, **Logan Grosenick**, Karl Deisseroth, and Marc Levoy. Enhancing the performance of the light field microscope using wavefront coding. *Optics Express*, 22(20):24817–24839, 2014.

Leif E. Fenno*, Joanna Mattis*, Charu Ramakrishnan*, Minsuk Hyun, Soo Yeun Lee, Miao He, Jason Tucciarone, Aslihan Selimbeyoglu, Andre Berndt, **Logan Grosenick**, Kelly A. Zalocusky, Hannah Bernstein, Haley Swanson, Chelsey Perry, Ilka Diester, Frederick Boyce, Caroline E. Bass, Rachel Neve, Z. Josh Huang, and Karl Deisseroth. Targeting cells with single vectors using multiple-feature Boolean logic. *Nature Methods*, 11:763–772, 2014 (*equal contributors).

Lisa A. Gunaydin*, **Logan Grosenick***, Joel C. Finkelstein*, Isaac V. Kauvar*, Lief E. Fenno, Avishek Adhikari, Stephan Lammel, Julie J. Mirzabekov, Raag D. Airan, Kelly A. Zalocusky, Kay M. Tye, Polina Anikeeva, Rob C. Malenka, and Karl Deisseroth. Natural neural projection dynamics underlying social behavior. *Cell*, 157:1535–1551, 2014 (*equal contributors).

2013

M. Broxton, **Logan Grosenick**, Samuel Yang, Noy Cohen, Andaman Andalman, Karl Deisseroth, and Marc Levoy. Wave optics theory and 3-D deconvolution for the light field microscope. *Optics Express*, 21(21):25418–25439, 2013.

Randal Burns, William G. Roncal, Dean Kleissas, Kunal Lillaney, Priya Manavalan, Eric Perlman, Daniel R. Berger, Davi D. Bock, Kwanghun Chung, **Logan Grosenick**, Narayanan Kasthuri, Nick C. Weiler, Karl Deisseroth, Michael Kazhdan, Jeff Lichtman, R. Clay Reid, Stephen J. Smith, Alexander S. Szalay, Joshua T. Vogelstein, and R. Jacob Vogelstein. The Open Connectome Project data cluster: scalable analysis and vision for high-throughput neuroscience. *Proceedings of the 25th International Conference on Scientific and Statistical Database Management (SSDBM)*, Article No. 27, 2013.

Kwanghun Chung, Jenelle Wallace, Sung-Yon Kim, Sandhiya Kalyanasundaram, Aaron S. Andalman, Tom J. Davidson, Julie J. Mirzabekov, Kelly A. Zalocusky, Joanna Mattis, Aleksandra K. Denisin, Sally Pak, Hannah Bernstein, Charu Ramakrishnan, **Logan Grosenick**, Viviana Gradinaru, and Karl Deisseroth. Structural and molecular interrogation of intact biological systems. *Nature*, 497:332–337, 2013.

Logan Grosenick, Brad Klingenberg, Jonathan E. Taylor, and Brian Knutson. Intepretable whole-brain prediction analysis with GraphNet. *NeuroImage*, 72(15):304–321, 2013.

2012

Hatef Monajemi, Sina Jafarpour, Matan Gavish, Stat 330/CME 362 Collaboration*, David L. Donoho, and (*Stat 330/CME 362 Collaboration is S Ambikasaran, S Bacallado, D Bharadia, Y Chen, Y Choi, M Chowdhury, S Chowdhury, A Damle, W Fithian, G Goetz, **L Grosenick**, S Gross, G Hills, M Hornstein, M Lakkam, J Lee, J Li, L Liu, C Sing-Long, M Marx, A Mittal, H Monajemi, A No, R Omrani, L Pekelis, J Qin, KS Raines, E Ryu, A Saxe, D Shi, K Siilats, D Strauss, G Tang, C Wang, Z Zhou, and Z Zhu). Deterministic matrices matching the compressed sensing phase transitions of Gaussian random matrices. *PNAS*, 110(4):1181–1186, 2012.

2011

Polina Anikeeva, Aaron S. Andalman, Illana Witten, Warden Melissa, Inbal Goshen, **Logan Grosenick**, Lisa Gunaydin, Loren M. Frank, and Karl Deisseroth. Optetrode: A multichannel readout for optogenetic control in freely moving mice. *Nature Neuroscience*, 15:163–170, 2011.

Kay M. Tye*, Rohit Prakash*, Sung-Yon Kim*, Leif E. Fenno*, **Logan Grosenick**, Hosniya Zarabi, Kimberly R. Thompson, Viviana Gradinaru, Charu Ramakrishnan, and Karl Deisseroth. Amygdala circuitry mediating reversible and bidirectional control of anxiety. *Nature*, 471:358–362, 2011 (*equal contributors).

2009

Claudio G. Carvalhaes, Marcos Perreau Guimaraes, **Logan Grosenick**, and Patrick Suppes. EEG classification by ICA source selection of laplacian-filtered data. *Proceedings of the 6th IEEE International Symposium on Biomedical Imaging*, pages 1003–1006, 2009.

Logan Grosenick, Todd Anderson, and Stephen J. Smith. Elastic Source Selection for in vivo imaging of neuronal ensembles. *Proceedings of the 6th IEEE International Symposium on Biomedical Imaging*, pages 1263–1266, 2009.

2008

Logan Grosenick, Stephanie Greer, and Brian Knutson. Interpretable classifiers for FMRI improve prediction of purchases. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 16(6):539–549, 2008.

2007

Colleen A. Flanagan, Chun-Chun Chen, Marla Coetsee, Siphon Mamputha, Kathleen E. Whitlock, Nicholas Bredenkamp, **Logan Grosenick**, Russell D. Fernald, and Nicola Illing. Expression, structure, function, and evolution of gonadotropin-releasing hormone (GnRH) receptors GnRH-R1SHS and GnRH-R2PEY in the teleost, *Astatotilapia burtoni*. *Endocrinology*, 148(10):5060–5071, 2007.

Logan Grosenick, Tricia S. Clement, and Russell D. Fernald. Fish can infer social rank by observation alone. *Nature*, 445:429–432, 2007.

Marcos Perreau Guimaraes, Dik Kin Wong, E. Uy, Timothy, **Logan Grosenick**, and Patrick Suppes. Single-trial classification of MEG recordings. *IEEE Transactions on Biomedical Engineering*, 54(3):436–443, 2007.

Dik Kin Wong*, **Logan Grosenick***, Tim Uy, Marcos Perreau Guimaraes, Claudio G. Carvalhaes, Peter Desain, and Patrick Suppes. Quantifying inter-subject agreement in brain-imaging analyses. *NeuroImage*, 39(3):1051–1063, 2007 (*equal contributors).

Book Chapters

2006

Dik Kin Wong, Marcos Perreau Guimaraes, E. Uy, Timothy, **Logan Grosenick**, and Patrick Suppes. Multichannel classification of single EEG trials with Independent Component Analysis. In J. Wang et al., editor, *Advances in Neural Networks*, pages 541–547. Springer, Berlin/Heidelberg, 2006.

Conference Posters

2015

Benjamin Poole, **Logan Grosenick**, Michael Broxton, Karl Deisseroth, and Surya Ganguli. Robust non-rigid alignment of volumetric calcium imaging data. *COSYNE*, 2015.

2014

Sophie Aimon, Takeo Katsuki, **Logan Grosenick**, Michael Broxton, Karl Deisseroth, and Ralph Greenspan. Fruit fly functional imaging. *Society for Neuroscience (SfN)*, 2014.

Tom J. Davidson, Anderson E. B., Talia N. Lerner, Charu Ramakrishnan, Joanna Mattis, **Logan Grosenick**, Isaac Kauvar, Loren M. Frank, and Karl Deisseroth. Subsecond cholinergic dynamics underlying hippocampal network state in freely-behaving rats. *Society for Neuroscience (SfN)*, 2014.

Emily Ferenczi, Conor Liston, Kelly Zalocusky, Kiefer Katovich, Melissa Warden, Debha Amatya, Brian Patenaude, **Logan Grosenick**, Charu Ramakrishnan, Paul Kalanathi, Amit Etkin, Brian Knutson, Gary Glover, and Karl Deisseroth. Brain-wide imaging of an anhedonic state using awake optogenetic functional MRI (ofMRI). *Society for Neuroscience (SfN)*, 2014.

Logan Grosenick*, Michael Broxton*, Christina K. Kim*, Conor Liston*, Ben Poole, Paul Kalanathi, Emily Ferenczi, Samuel Yang, Aaron Andalman, Todd Anderson, Louis Leung, Edward Scharff, Joshua T. Vogelstein, Noy Cohen, Romaine Madelaine, Zhengyun Zhang, Ofer Yizhar, Anselm Levskaya, Charu Ramakrishnan, Surya Ganguli, Akira Muto, Koichi Kawakami, Philippe Mourrain, Stephen J. Smith, Patrick Suppes,

Marc Levoy, and Karl Deisseroth. Identification of cellular-activity timing relationships spanning large tissue volumes during behavior. **Society for Neuroscience (SfN)**, 2014 (*equal contributors).

Alexander Yeh, Kate Montgomery, John Ho, Vivien Tsao, Emily Ferenczi, Shrivats Iyer, **Logan Grosenick**, Yuji Tanabe, Karl Deisseroth, Scott Delp, and Ada Poon. Fully internal wireless optogenetics for truly untethered stimulation. **Society for Neuroscience (SfN)**, 2014.

2013

Aaron S. Andalman*, Vanessa M. Burns*, **Logan Grosenick**, Michael Broxton, Samuel Yang, Noy Cohen, Louis C. Leung, Roman Madelaine, Brian Grone, Philippe Mourrain, Marc Levoy, and Karl Deisseroth. Whole-brain calcium imaging during contextual fear learning in juvenile zebrafish using light field tomography. **Society for Neuroscience (SfN)**, 2013 (*equal contributors).

Lisa A. Gunaydin*, Isaac V. Kauvar*, **Logan Grosenick***, and Karl Deisseroth. Real-time optical measurement of projection activity: dynamics of genetically- and anatomically-defined neuronal afferents predict social behavior in freely moving mice. **Society for Neuroscience (SfN)**, 2013 (*equal contributors).

Logan Grosenick*, Michael Broxton*, Christina K. Kim*, Conor Liston*, Samuel Yang, Aaron Andalman, Noy Cohen, Louis Leung, Ben Poole, Joshua T. Vogelstein, Todd Anderson, Zhengyun Zhang, Ofer Yizhar, Brian Grone, Charu Ramakrishnan, Akira Muto, Koichi Kawakami, Philippe Mourrain, Stephen J. Smith, Patrick Suppes, Marc Levoy, and Karl Deisseroth. Synchronous 3-D imaging of large neural populations with single-neuron resolution at video rates in vitro and in vivo with light field microscopy. **Society for Neuroscience (SfN)**, 2013 (*equal contributors).

Charlene C. Wu, **Logan Grosenick**, and Brian Knutson. Multiple neural circuits predict different types of financial risk taking. **Society for Neuroscience (SfN)**, 2013.

2011

Genevera I. Allen, **Logan Grosenick**, and Jonathan Taylor. Whole-brain spatio-temporal dimension reduction via Sparse Generalized PCA. **Organization of Human Brain Mapping (OHBM)**, 2011.

2010

Logan Grosenick, Brad Klingenberg, Brian Knutson, and Jonathan Taylor. Interpretable multivariate models for whole-brain fMRI. **Organization of Human Brain Mapping (OHBM)**, 2010.

Kay M. Tye, Fenno Lief E., Sung-Yon Kim, Rohit Prakash, Hosnia Zarabi, Kimberly Thompson, **Logan Grosenick**, Viviana Gradinaru, Charu Ramakrishnan, and Karl Deisseroth. Endogenous anxiolytic mechanisms identified by projection-specific optogenetic control of amygdala microcircuitry. **Society for Neuroscience (SfN)**, 2010.

2009

Logan Grosenick, David Brynjar Franzson, Marcos Perreau Guimaraes, Lene Harbott, and Patrick Suppes. Single-trial classification and representation of melody in the brain. **Association for Psychological Science (APS)**, 2009.

Logan Grosenick, Brad Klingenberg, Stephanie Greer, Jonathan Taylor, and Brian Knutson. Whole-brain sparse penalized discriminant analysis for predicting choice. **Organization of Human Brain Mapping (OHBM)**, 2009.

Nick C. Weiler, Brad Busse, **Logan Grosenick**, Nancy O'Rourke, Kristina Micheva, and Stephen J. Smith. Single synapse classification in the cerebral cortex using array tomography. **Society for Neuroscience (SfN)**, 2009.

Grants, Honors and Awards

National Merit Finalist and AP National Scholar
Ethical Dimensions in Neuroscience Award, Stanford BioX Initiative, Stanford
Honors, Department of Biological Sciences, Stanford
Firestone Medal for Excellence in Undergraduate Research, Stanford
Graduate Fellowship (IGERT), National Science Foundation
Organization for Human Brain Mapping Trainee Abstract Award
CNRS Jacques Monod Conference Travel Award
FENS Spring Brain Conference Travel Award

Invited Talks

- 2014 NIPS workshop: Large scale optical physiology. "Synchronous 3D functional imaging and estimation of neural dynamics at cellular resolution."
- 2014 Olympus Fifth Annual Neuroimaging Symposium. "Synchronous 3D functional imaging and estimation of neural dynamics at cellular resolution in rodents and humans."
- 2014 CNRS Jacques Monod Conference. "Optical deconstruction of inter-regional neural dynamics at cellular resolution during behavior."
- 2014 FENS Spring Brain Conference. "Identification of cellular-activity timing relationships spanning large tissue volumes during behavior."
- 2013 Olympus Fourth Annual Neuroimaging Symposium at SfN. "Synchronous 3D imaging of large neural populations with single-neuron resolution at video rates *in vitro* and *in vivo* with light field microscopy."
- 2012 Redwood Center for Theoretical Neuroscience, Berkeley. "Acquisition, creation, and analysis of 4D light fields with applications to calcium imaging and optogenetics."
- 2011 COSYNE Workshops, Snowbird. "Towards closed-loop system identification and control of neural circuits with optogenetics."
- 2010 Organization for Human Brain Mapping (OHBM), Barcelona. "Fast, interpretable multivariate methods for whole-brain fMRI."

- 2010 Columbia Department of Statistics, Columbia University. “Fast classification, regression, and multivariate methods for sparse but structured data with applications to whole-brain fMRI and volumetric calcium imaging.”
- 2010 Johns Hopkins Whiting School of Engineering, Baltimore. “Fast, interpretable multivariate models for whole-brain fMRI regression and classification.”
- 2009 IEEE International Symposium on Biomedical Imaging, Boston. “Elastic Source Selection for *in vivo* imaging of neuronal ensembles”.

Teaching

- 2011-2013 SAT Tutor with Boys and Girls Club of the Peninsula
2005-2007 Princeton Review Tutor: Individual SAT Tutor
2002-2005 Princeton Review Instructor: SAT, SATII (Biology, Mathematics), and Grammar (Class size 10-30 students).

Professional Activities

Affiliations

American Association for the Advancement of Science (AAAS)
Institute of Electrical and Electronics Engineers (IEEE), Student Member
Institute of Mathematical Statistics (IMS)
Organization for Human Brain Mapping (OHBM)
Society for Neuroscience (SfN), Student Member

Ad-Hoc Reviewer

Animal Behavior
Communications in Nonlinear Science and Numerical Simulation
IEEE Trans Medical Imaging
Journal of Computational and Graphical Statistics
NeuroImage
Pattern Recognition
Pattern Recognition in NeuroImaging

References

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