Andreas Savas Tolias

Professor and Brown Foundation Endowed Chair of Neuroscience
Founder and Director of Center for Neuroscience and Artificial Intelligence
Department of Neuroscience, Baylor College of Medicine
Department of Electrical and Computer Engineering, Rice University
Houston, Texas

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http://toliaslab.org, ninai.org

Education

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Cambridge University, Cambridge, UK	B.A., M.A.	1993,1995	Natural Sciences
Massachusetts Institute of Technology	Ph.D.	2000	Systems/ Computational Neuroscience
Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany	Postdoctoral Training	2000-2006	Systems/ Computational Neuroscience

Positions

2018-present	Professor of Neuroscience, Department of Neuroscience, Baylor College of Medicine
2017-present	Brown Foundation Endowed Chair of Neuroscience Baylor College of Medicine, Houston, Texas
2016-present	Founder and Director, Center for Neuroscience and Artificial Intelligence (CNAI), Baylor College of Medicine, Houston, Texas
2013-present	Associate Professor, Department of Neuroscience, Baylor College of Medicine Department of Electrical and Computational Engineering, Rice University
2006-2013	Assistant Professor, Department of Neuroscience, Baylor College of Medicine Department of Computational and Applied Mathematics, Rice University, Houston TX.

2000-2006	Research Scientist, Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany. (Nikos Logothetis, Director).
1995-2000	Ph.D. Thesis in the Laboratory of Peter Schiller, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA.
1994	Teaching Assistant, Department of Applied Mathematics, Harvard University, Cambridge, MA.
1993-1994	Research Fellow, MIT Media Lab in lab of Alex Pentland
1993-1994	Research Fellow in the labs of C.F. Stomeyer III & Richard Kronauer School of Engineering and Applied Sciences, Harvard University, Cambridge, MA.
1991-1992	Research Assistant in the Laboratory of John Dowling, Harvard University, Cambridge, MA.

Honors

2017	Brown Foundation Chair of Neuroscience
2016	Michael E. DeBakey Excellence in Research Award
2016-2019	McKnight Memory and Cognitive Disorders Award
2013-2017	NIH-EUREKA Award
2013	Invitee at White House event for launch of BRAIN Initiative
2011-2016	NIH Director's Pioneer Award
2010-2013	McKnight Endowment Fund for Neuroscience Scholar Award
2009	Kavli Frontiers of Science Fellow, National Academy of Sciences, US
2008-2011	Beckman Foundation Young Investigator Award
2001-2004	NRSA-Postdoctoral fellowship (National Institutes of Health, USA)
1990-1993	Foreign and Commonwealth Office Scholar (Cambridge University, U.K)
1990-1993	Cambridge Commonwealth Trust Scholar (Cambridge University, U.K)

Research Publication

- Walker ET, Sinz FH, Foudarakis E, Fahey PG, Muhammad T, Ecker AS, Cobos E, Reimer J, Pitkow X, Tolias AS (2018) Inception in visual cortex: in vivo-silico loops reveal most exciting images *bioRxiv* **doi:** https://doi.org/10.1101/506956

- Scala F, Kobak D, Shan S, Bernaerts Y, Laturnus S, Cadwell CR, Hartamis L, Castro J, Tan ZH, Sandberg R, Berens P, Jiang X, Tolias AS. (2018) Neocortical layer 4 in adult mouse differs in major cell types and circuit organization between primary sensory areas *bioRxiv* **doi:** https://doi.org/10.1101/507293

- Edgar Y Walker, R. James Cotton, Wei Ji Ma, Andreas S Tolias (2018) A neural basis of probabilistic computation in visual cortex *bioRxiv* 365973; doi: https://doi.org/10.1101/365973

- Gido M. van de Ven, Andreas S. Tolias (2018). Generative replay with feedback connections as a general strategy for continual learning. *arXiv:* https://arxiv.org/abs/1809.10635

- Sinz FH, Ecker AS, Fahey PG, Walker EY, Cobos E, Froudarakis E, Yatsenko D, Pitkow X, Reimer J, Tolias AS (2018) Stimulus domain transfer in recurrent models for large scale cortical population prediction on video. *NIPS (Neural Information Processing Systems)* https://nips.cc/Conferences/2018/Schedule?showEvent=11693

- Subramaniyan M, Ecker AS, Patel SS, Cotton RJ, Bethge M, Pitkow X, Berens P, Tolias A J (2018) Faster processing of moving compared to flashed bars in awake macaque V1 provides a neural correlate of the flash lag illusion. *Journal of Neurophysiol.* Aug 22. doi: 10.1152/jn.00792.2017

- Dimitri Yatsenko, Edgar Y. Walker, Andreas S. Tolias (2018) DataJoint: A Simpler Relational Data Model *arXiv:* https://arxiv.org/abs/1807.11104

- Alexander S. Ecker, Fabian H. Sinz, Emmanouil Froudarakis, Paul G. Fahey, Santiago A. Cadena, Edgar Y. Walker, Erick Cobos, Jacob Reimer, Andreas S. Tolias, Matthias Bethge (2018) A rotation-equivariant convolutional neural network model of primary visual cortex *arXiv:* https://arxiv.org/abs/1809.10504

- E. Kelly Buchanan, Ian Kinsella, Ding Zhou, Rong Zhu, Pengcheng Zhou, Felipe Gerhard, John Ferrante, Ying Ma, Sharon Kim, Mohammed Shaik, Yajie Liang, Rongwen Lu, Jacob Reimer, Paul Fahey, Taliah Muhammad, Graham Dempsey, Elizabeth Hillman, Na Ji, Andreas Tolias, Liam Paninski (2018) Penalized matrix decomposition for denoising, compression, and improved demixing of functional imaging data *bioRxiv* 334706; doi: https://doi.org/10.1101/334706

- Denfield GH, Ecker AS, Shinn TJ, Bethge M, Tolias AS (2018) Attentional fluctuations induce shared variability in macaque primary visual cortex ***Nature Communications.*** (Jul 9;9(1):2654. doi: 10.1038/s41467-018-05123-6.).

- Berens P, … Tolias AS, Bethge M (2018) Community-based benchmarking improves spike rate inference from two-photon calcium imaging data. ***Plos Computational Biology*** May 21;14(5):e1006157. doi: 10.1371/journal.pcbi.1006157.

- Cadwell CR, Scala F, Li S, Livrizzi G., Shen S., Sandberg R, Jiang X & Tolias AS(2017) Multimodal profiling of single-cell morphology, electrophysiology, and gene expression using Patch-seq ***Nature Protocols.*** Dec;12(12):2531-2553. doi: 10.1038/nprot.2017.120.

- S. A. Cadena, G. H. Denfield, E. Y. Walker, L. A. Gatys, A. S. Tolias, M. Bethge, and A. S. Ecker (2017) Deep convolutional models improve predictions of macaque V1 responses to natural images ***bioRxiv,*** 2017

- Cadwell CR, Sandberg R, Jiang X, Tolias AS. (2017) Q&A: using Patch-seq to profile single cells. ***BMC Biol.*** 2017 Jul 6;15(1):58. doi: 10.1186/s12915-017-0396-0.

- Ouzounov DG, Wang T, Wang M, Feng D, Horton NG, Hernández JCC, Cheng Y, Reimer J, Tolias AS, Nishimura N, Xu C (2017) In Vivo Three-Photon Imaging of Activity of GCaMP6-Labeled Neurons in the Hippocampus of Intact Mouse Brain, ***Nature Methods.*** Feb 20. doi: 10.1038/nmeth.4183

- G. H. Denfield, A. S. Ecker, T. J. Shinn, M. Bethge, and A. S. Tolias (2017) Attentional fluctuations induce shared variability in macaque primary visual cortex ***bioRxiv, 2017***

- Quast KB, Ung K, Froudarakis E, Huang L, Herman I, Addison AP, Ortiz-Guzman J, Cordiner K, Saggau P, Tolias AS, Arenkiel BR. (2017) Developmental broadening of inhibitory sensory maps. **Nat Neurosci.** 2017 Feb;20(2):189-199. doi: 10.1038/nn.4467.

- Segev E, Reimer J, Moreaux LC, Fowler TM, Chi D, Sacher WD, Lo M, Deisseroth K, Tolias AS, Faraon A, Roukes ML (2017). Patterned photostimulation via visible-wavelength photonic probes for deep brain optogenetics. ***Neurophotonics.*** Jan;4(1):011002

- Jiang X, Shen S, Sinz F, Reimer J, Cadwell CR, Berens P, Ecker AS, Pater S, Denfield GH, Froudarakis E, Li S, Walker E, Tolias AS (2016). Response to Comment on "Principles of connectivity among morphologically defined cell types in adult neocortex. ***Science*** 353(6304):1108.

- Reimer J, McGinley MJ, Liu Y, Rodenkirch C, Wang Q, McCormick DA, Tolias AS (2016). Pupil fluctuations track rapid changes in adrenergic and cholinergic activity ion cortex. *Nature Commun.* 8;7:13289

- Denfield GH, Fahey PG, Reimer J, Tolias AS (2016). Investigating the Limits of Neuromuscular Coupling. *Neuron,* 7;91(5):954-6

- Cadwell CR, Palasantza A, Jiang X, Berens P, Deng Q, Yilmaz M, Reimer J, Shen S, Bethge M, Tolias KF, Sandberg R & Tolias AS (2016). Morphological, electrophysiological and transcriptomic profiling of single neurons using Patch-seq. *Nature Biotechnology,* 34(2), 199-203. doi: 10.1038/nbt.3445. Epub 2015 Dec 21.

- Theis L., Berens P., Froudarakis E., Reimer E., Roson MR., Baden T., Eurler T., Tolias AS., Bethge M (2016). Benchmarking spike reate inference in calcium population imaging. *Neuron* 90:3:471-82

- Ecker AS, Denfield GH, Bethge M, Tolias AS (2016). On the Structure of Neuronal Population Activity under Fluctuations in Attentional State. *Journal of Neuroscience,* 36(5):1775-89. doi: 10.1523/JNEUROSCI.2044-15.2016.

- Rossant C, Kadir SN, Goodman DFM, Schulman J, Hunter M, Saleem AB, Grosmark A, Belluscio M, Denfield GH, Ecker AS, Tolias AS, Solomon S, Buzsaki G, Carandini M, Harris KD (2016). Spike sorting for large, dense electrode arrays. *Nature Neuroscience,* 19(4): 623-41

- Jiang X., Shen S., Cadwell C.R., Berens P., Sinz F., Ecker A.S., Tolias A.S. (2015). Principles of Connectivity among Morphologically Defined Cell Types in Adult Neocortex. *Science*. Vol. 350 no. 6264 DOI: 10.1126

- McGinley MJ, Vinck M, Reimer J, Batista-Brito R, Zagha E, Cadwell CR, Tolias AS, Cardin JA, McCormick DA. (2015). Waking State: Rapid Variations Modulate Neural and Behavioral Responses. *Neuron*. 2015 Sep 23;87(6).

- Yatsenko, D., Josić, K., Ecker, A. S., Froudarakis, E., Cotton, R. J., & Tolias, A. S. (2015). Improved Estimation and Interpretation of Correlations in Neural Circuits. *PLoS Computational Biology*, *11*(3), e1004083-e1004083.

- Subramaniyan M., Ecker A.S., Patel S., Cotton R.J., Bethge M., Berens P., Tolias A.S. (2015). Faster processing of moving compared to flashed bars in awake macaque V1 provides a neural correlate of the flash lag illusion. *bioRxiv,* doi: http://dx.doi.org/10.1101/031146

- Theis, L., Berens, P., Froudarakis, E., Reimer, J., Roman-Roson, M., Baden, T., Euler T., Tolias A. & Bethge, M. (2015). Supervised learning sets benchmark for robust spike detection from calcium imaging signals. ***bioRxiv***, 010777.

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- Reimer, J., Froudarakis E., Cadwell, C.R., Yatsenko, D., Denfield, G.H., Tolias, A.S. (2014). Pupil Fluctuations Track Fast Switching of Cortical States during Quiet Wakefulness. ***Neuron.*** 2;84: 355-362.

- Ecker A.S., Tolias A.S. (2014) Is there signal in the noise? ***Nature Neuroscience*** 17(6), 750-1

- Froudarakis E., Berens P., Ecker A.S., Cotton R.J., Sinz F.H., Yatsenko D., Saggau P., Bethge M., Tolias A.S. (2014) Population code in mouse V1 facilitates readout of natural scenes through increased sparseness ***Nature Neuroscience*** doi:10.1038/nn.3707

- Ecker A.S., Berens P., Cotton R.J.,Subramaniyan M., Denfield G.H.,Cadwell C.R., Smirnankis S.M.,Bethge M.,Tolias A.S.(2014) State dependence of noise correlations in macaque primary visual cortex. ***Neuron***. 2;82(1):235-48.

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- Supramaniyan M., Ecker A.S, Berens P.,Tolias A.S. (2013) Macaque monkeys perceive the flash lag illusion. ***Plos One*** 8(3):e58788.

- Qamar A*., Cotton RJ*., Ryan G., Beck J., Laudano A., Tolias A.S., Ma WJ (2013) Uncertainty-based adjustment of decision boundaries in categorization ***PNAS*** 110(50): 20332-7. * equal contribution

- Berens P., Ecker A.S., Cotton R.J., Ma W.J., Bethge M., Tolias A.S. (2012). A fast and simple population code for orientation in primate V1. ***Journal of Neuroscience*** 31(31): 10618-10636.

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- Ecker A.S., Berens P., Tolias A.S., Bethge M (2011) The effect of noise correlations in populations of diversely tuned neurons. ***Journal of Neuroscience***. 5:31 (40): 14272-83

- Sultan F., Augath M., Murayama Y.,Tolias A.S.,Logothetis N.K.(2011) esfMRI of upper STS: further evidence for the lab of electrically induced polysynaptic propagation of activity in the neocortex ***Magn Reson Imaging***: 10: 1374-81

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- Tehovnik EJ, Slocum WM, Smirnakis SM, Tolias AS. (2009). Microstimulation of visual cortex to restore vision. ***Prog Brain Res*** 175:347-75.

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- Smirnakis S.M., Schmid M.C., Weber B., Tolias A.S., Augath M., Logothetis N.K. (2007). Spatial specificity of BOLD versus cerebral blood volume fMRI for mapping cortical organization. ***J Cereb. Blood Flow Metab***, 37(6), 1248-61.

- Tehovnik E.J., Tolias A.S., Sultan F., Slocum W.M., Logothetis N.K. (2006). Direct and Indirect Activation of Cortical Neurons by Electrical Microstimulation. ***J Neurophysiol***, 96(2), 512-21.

- Tolias A.S., Sultan F, Augath M, Oeltermann A, Tehovnik E.J., Schiller PH, Logothetis N.K. (2005). Mapping cortical activity elicited by electrical microstimulation using fMRI in the macaque. ***Neuron, 48, 901-11.***

- Smirnakis S.M, Schmid M.C, Brewer A.A, Tolias A.S., Schüz A., Augath M., Inhoffen W., Wandell B.A., Logothetis N.K. (2005). Reply to "Rewiring the adult brain". ***Nature***, 438(7065), E3-E4 (correspondence).

- Tolias A.S., Keliris G., Smirnakis S.M., Logothetis N.K. (2005). Reply to "Motion processing in macaque V4". ***Nature Neuroscience***, 8(9), 1125 (correspondence).

- Tolias A.S., Keliris G., Smirnakis S.M., Logothetis N.K. (2005). Neurons in macaque area V4 acquire directional tuning after adaptation to motion stimuli. ***Nature Neuroscience***, 8(5), 591-3.

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- Eichhorn E., Tolias A.S., Zien A., Matle K., Rasmussen C., Weston J., Logothetis N.K., Schoelkopf B. (2004). Prediction on spike data using kernel algorithms. Advances in ***Neural Information Processing Systems*** 16, 1367-1374. MIT Press, Cambridge, MA, USA

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Invited Talks and Workshops

NSF workshop on imaging and computation, Marine Biological Labs, MA	2018
NeuroSpin, Paris, France	2018
Brain Informatics Keynote speaker, Arlington, TX	2018
George Mason University, VA	2018
Lifelong learning machines, DARPA, Chicago, IL	2018
Kavli Futures Symposium: Next-Gen Neurotech research, Santa Monica, CA	2018
The Brain Prize conference on the cell types and brain function, Copenhagen, Denmark	2018
The BRAIN Initiative Working Group Workshop #3, Houston, TX	2018
Bernstein Computational Neuroscience Meeting, Berlin, Germany	2018
Yale University, Neuroscience Seminar Series, CT	2018
Kavli Foundation, IEEE Brain, University of Columbia, NY	2018
Allen Institute for Brain Sciences Symposium on Imaging, WA	2018
Kavli Institute for Theoretical Physics, Modeling Global Brain Activity, CA	2018
IARPA MICrONS Technical Meeting on advancing AI, DC	2018
The Neuroscience School of Advance Studies, Venice Italy	2018
SFN Virtual Conference Live Data Event	2018
JHU Department of Biomedical Engineering, MD	2018
NYU Center for Neural Science Colloquium, NY	2018

UC Berkeley, Hellen Wills Neuroscience Institute, CA	2018
Life Long Learning Machines, DARPA, DC	2018
MICrONS meeting, IARPA, Houston TX	2018
VisioNYC Featured Speaker, NY	2018
Brown University, Rhode Island	2018
Keystone Symposia, State of the Brain	2018
Keynote speaker Neuroscience functional imaging group meeting, Thorlabs, DC	2017
BRAIN Initiative Cell Census Network kick-off, Janelia Research Campus	2017
MIT Neurotech 2017, Cambridge, MA	2017
Neuroscience Graduate Program Distinguished Speaker, USC, CA	2017
Kavli Future Symposium: Toward Open Source, Next-Gen Neurotechnology, CA	2017
Center for Functional Connectomics, Korea Inst. of Science & Technology, Seoul, Korea	2017
Cajal Summer Course in Comp. Neurosc., Champalimaud Inst., Lisbon, Portugal	2017
HHMI, Janelia Research Campus, Primate probe design workshop	2017
Keynote speaker, Statistical Analysis of Neural Data, University of Pittsburg, PA	2017
Keynote AddressMarch for Science, Houston, TX	2017
Argon National Labs and Grossman Institute, University of Chicago, Chicago, IL	2017
Department of Neuroscience, Washington University School of Medicine, St. Louis, MO	2017
5th Neuro Inspired Computational Elements Workshop (NICE), San Jose, CA	2017
Keynote speaker, Rush Record retreat, Galveston, TX	2017
DARPA NESD Kick off meeting, Arlington, VA	2017
UTSW, Dallas, TX	2017
MICrONS, IARPA Technical meeting, Bethesda, MD	2017
DARPA Brain Machine Interface team workshop, Columbia University, NY	2017
NIPS, Brain and Bits: Neuroscience meets Machine Learning, Barcelona, Spain	2016
Rita Levi-Montalcini Annual Meeting, Rome, Italy	2016
SFN Short Courses, San Diego, CA	2016
FENS Winter School, Obergurgl, Austria	2016
Scuola Normale Superiore di Pisa, Italy	2016
NIH Brain Initiative Annual Meeting, Bethesda, MD	2016
NIH High Risk High Reward Symposium, Bethesda, MD	2016
Department of Bioengineering, Georgia Tech	2016
Weisman Institute, Neurobiology Retreat, Israel	2016
Karolinska Institute, Sweden	2016
Ernst Strungmann Institute for Neuroscience, MPS, Frankfurt, Germany	2016
Cajal Summer Course in Comp. Neurosc., Champalimaud Inst., Lisbon, Portugal	2016
Allen Institute for Brain Science, WA	2016
University of Utah, UT	2016
Conference on the Neurobiology of Mental Health, Geneva, Switzerland	2016
Mahoney Institute for Neurosciences, UPenn, PA	2016
Brains and Machines, Future of Comp. in Science and Engineering, Harvard Univ., MA	2016
Human Brain Mapping Workshop, Paris, France	2016
NIPS Workshop, Montreal, Canada	2015
Brain Initiative Annual Meeting, Bethesda, MD	2015
Department of Neurobiology, University of Texas, Houston, TX	2015
Max-Planck Society Primate Research Meeting, Goettingen, Germany	2015
McKnight Conference on Neuroscience, Aspen, CO	2015
Bernstein Sparks Workshop on Machine Learning and the Brain, Tuebingen, Germany	2015
Calcium imaging data analysis, Simons Foundation, NY	2015
Center for Imaging Science, John Hopkins University, MD	2015
Large scale optical physiology, NIPS, Montreal Canada	2014
Neurotechnologies Kavli Futures Symposium, Columbia University, NY	2014
AREADNE, Santorini, Greece	2014
University of Tuebingen, Tuebingen, Germany	2014

Neuroscience Seminar Series, University of Texas, Austin, TX   2014
Acquiring and analyzing the activity of large neural ensembles NIPS, NV   2013
Quantifying structure in large neural datasets Grossman Center, Columbia University, NY 2013
Grand Rounds Neurosurgery BCM, MD Anderson, Houston, TX   2013
Sensory Systems and Coding, Mathematical Bioscience Institute,OH   2013
SINTN Seminar, Stanford University, CA   2013
Computation and Neural Systems Seminar California Institute of Technology, CA   2013
Lawrence Berkeley National Laboratory, Berkeley, CA   2012
Howard Hughes Medical Institute, Janelia Farm, VA   2012
Department of Mathematics, University of Houston   2012
The Methodist Hospital Research Institute, Houston, TX   2012
SIAM Conference on the Life Sciences, San Diego, CA   2012
Institute for Exp. Medicine, Hungarian Academy of Sciences, Budapest, Hungary   2012
FENS-IBRO, Neural Coding in sensory systems, Obergurgl, Austria   2012
Kavli NeuroNano-Technology Workshop, Los Angeles, CA   2012
NeuroNano-Technology Workshop, Grenoble, France   2011
Beckman Foundation, Irvine, CA   2011
Institut De La Vision, Paris, France   2011
Neuronal Response Variability and Cortical Computation, CSHL, NY   2011
Neural dynamics and coding, Banff International Research Station for Mathematics
Innovation and Discovery, Canada   2010
Italian Institute of Technology, Genova, Italy   2010
Bodian Seminar Lecture Series, The Zanvyl Krieger Mind/Brain Mind Inst. Johns Hopkins 2010
HHMI, Janelia Farm, Challenges in Extracellular Electrophysiology: Data Extraction 2010
Washington University, Anatomy & Neurobiology and Neuroscience Seminar   2010
CoSyNe,Optical tools applied in vivo: cell classes, correlations, and functional   2010
    connectivity in cortical populations, Snowbird, Utah
Institute of Neuroscience, Shanghai, China   2009
Chinese-Americal Kavli Frontiers of Science, Kunming China   2009
Beckman Foundation Young Investigator Meeting, Irvine, CA   2009
Military Health Research Forum, Kansas City, Missouri   2009
University of Texas, St Antonio   2009
Louisiana School of Medicine, New Orleans   2008
Brain Research Institute, University of Zurich, Switzerland   2008
Beckman Foundation Young Investigator Meeting, Irvine, CA   2008
NIPS Workshop, Probabilistic Models for Visual Cortical Processing, Whistler, Canada 2007
The University of Texas, Health Science Center at Houston Medical School   2007
Neural Coding, Computational and Dynamics, Hossegor, France   2007
Gulf Coast Consortia, Theoretical and Computational Neuroscience   2006
Sleep Research Workshop, National Center on Sleep Disorder (NIH), Bethesda   2006
AREADNE, Santorini, Greece   2006
McGovern Institute for Neuroscience, Massachusetts Institute of Technology   2006
Dept. of Neurobiology, Pharmacology and Neuroscience, University of Chicago   2006
Department of Neuroscience, Baylor College of Medicine   2005
Center for Neural Basis of Cognition, University of Pittsburg   2005
Department of Mathematical Sciences, New Jersey Institute of Technology   2005
CoSyNe, Information Coding and Computation Workshop, Utah   2005
GATSBY, Computational Unit, University College London, UK   2004
Society for Neuroscience, Mini-symposium, San Diego   2004
McGovern Institute for Neuroscience, Massachusetts Institute of Technology   2003
CNS, California Institute of Technology   2003
Neuroscience Seminar. Princeton University, NJ   2002
Oberseminar. University of Duesseldorf, Germany   2001
NIPS-workshop: fMRI data analysis and modeling, Brekenridge, CO   2000

Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany   1998
Harvard University, Department of Psychology, Cambridge, MA   1994

Review panels for grants and awards, volunteer work outside home institution

MIT Educational Council Member

Study section for NIH RO1 and BRAIN Initiative grants;

NSF/NIH Collaborative Research in Computational Neuroscience, USA;

Swiss National Science Foundation, Switzerland;

Italian ministry of Education, Universities and Research, Italy;

Beckman Institute postdoctoral fellows, Caltech, California, USA;

Israeli Science Foundation, Israel;

Bernstein Award for Computational Neuroscience, Germany.

Beckman Foundation Young Investigator Award.

Ad Hoc journal reviewer

Science, Nature, Neuron, Nature Neuroscience, NIPS, Plos Computational Biology, Plos Biology, Neural Computation, Journal of Neuroscience, Journal of Neurophysiology, Current Biology, Plos Biology, Frontiers in Neuroscience Journals

Current Funding

IARPA – Machine Intelligence from Cortical Networks (MICrONS)
(PI: Tolias, A, co-PI X. Pitkow)   01/15/2016 - 01/14/2021
IARPA-D16PC0003 $21,226,553
Reverse engineering neocortical intelligence

DARPA - Lifelong Learning Machines   01/01/2018 - 01/01/2022
(PI: Tolias, A, co-PI J Reimer) $2,085,000
Continual Learning across Synapses, Neurons and Brain Areas

NIH - U19 RFA-MH-17-225:
(PIs: Anderson D, Zhuang X, Ngai J, Pachter L,   09/01/2017 – 08/31/2022
Tolias AS, Zeng H) $65M (PI:A. Tolias: $4,137,070)
  A comprehensive whole-brain atlas of cell types in the mouse

NIH (PI: Tolias, A)   04/01/2017 – 03/31/2022
R01 EY026927 $1,952,270
Probabilistic coding in cortical populations

NIH (PIs: Tolias, A, Tolias, K., and Sandberg)   09/01/2017 – 08/31/2022
R01 MH109556 $3,490,444
Deciphering the building blocks of hippocampal circuits

NSF (PIs: Josic, Pitkow, Allen, Patel, co-PI Tolias)   01/01/2018 – 01/01/2023
NeuroNex NSF 16-569 $1,131,929 (Tolias Lab)
Collaborative Theory Research Center:
Inferring interactions between neurons, stimuli, and behavior

DARPA (PI: Shepard, co-PI: Tolias A)   06/01/2017 – 05/31/2021
NESD, DARPA-AA-16-09 $1,610,000 (Tolias Lab)
BISC: Bioelectronic Interfacing to Sensory Cortex using massive, fully implanted, flexible, wireless CMOS surface recording and stimulating arrays

National Science Foundation   10/01/2015 – 09/30/2019
NSF BIGDATA IIS-1546273 $150,000 (Tolias Lab)
BIGDATA: Collaborative Research: IA: Hardware and software for spike detection and sorting in massively parallel electrophysiological recording systems for the brai

NSF (PI: St-Pierre, co-PI Tolias)   09/01/2017 – 09/01/2019
NeuroNex NSF 16-569 $800,000
Innovation Award:
Voltage to Light Transducers (VoLT) Collaborative

The McKnight Endowment Fund for Neuroscience
McKnight Memory and Cognitive Disorders Award   02/01/2016 – 01/31/2019
0.12 calendar
(PIs: Tolias, K and Tolias, A) $300,000
Studying Global Memory Traces at Single Synapse Resolution