

# SATRAJIT SUJIT GHOSH

## *Curriculum Vitae*

McGovern Institute for Brain Research  
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### **Degrees**

PhD, Cognitive and Neural Systems, Boston University, 2005, Prof. Frank Guenther  
B.S. (Honors), Computer Science, National University of Singapore, 1997, Prof. Lonce L. Wyse

### **Employment**

Principal Research Scientist, McGovern Institute for Brain Research, MIT, 2015 – Current  
Assistant Professor, Department of Otology and Laryngology, Harvard Medical School, 2014 – Current  
Research Scientist, McGovern Institute for Brain Research, MIT, 2011 – 2014  
Research Scientist, Research Laboratory of Electronics, MIT, 2007 – 2011  
Postdoctoral Associate, Research Laboratory of Electronics, MIT, 2004 – 2007, Dr. Joseph S. Perkell  
Software Engineer, Kent Ridge Digital Labs, Singapore, 1997-1998

### **External Positions held**

Massachusetts Eye and Ear, Harvard Medical School, 2014 – Current, Research Associate  
Speech and Hearing Biosciences and Technology, (now in) Division of Medical Sciences, Harvard Medical School, 2008 – Current, Member of the Faculty  
Standards for Datasharing Taskforce, International Neuroinformatics Coordinating Facilities, 2010 – 2016  
Executive board, TankThink Labs, LLC, 2011 – 2015  
Department of Cognitive and Neural Systems, Boston University, 2005-2010, Research Fellow

### **Honors**

Phase I winner for the Open Science Prize competition, NIH, HHMI, Wellcome Trust, 2016  
Educational stipend, International Society for Magnetic Resonance in Medicine, 2008  
Graduate Teaching Fellow Award, Boston University, 2000  
Presidential University Graduate Fellowship, Boston University, 1998

### **UROP Students supervised**

Alkhairy, Samiya, Fall, 2009, Spring 2010  
Zhang, Mark, Spring 2012  
Ung, William, Spring 2012  
Smith, Ashley, Spring 2015  
Biswas, Jyotishka, Spring 2016  
Suh, Michelle, Spring 2016  
Taylor, Tilly, Spring 2016  
Jackson, Blake, Spring 2016  
Batmunkh, Zulsar, Spring 2016

## Ph.D. Students Supervised

Sitek, Kevin, in progress (NIDCD/NIH NRSA F31 fellowship)  
Ciccarelli, Gregory, in progress (MIT Lincoln Scholar)

## Teaching experience

6.541/SHBT.204, Speech Communication, Spring 2009, 2011- 2016  
6.551/SHBT.200, Acoustics of Speech and Hearing, Fall 2007- 2015

## Service

### *Internal service:*

Admissions committee, Speech and Hearing Biosciences and Technology Program (HST), 2010 – Current  
Curriculum committee, Speech and Hearing Biosciences and Technology Program (HST), 2009 – Current

### *External service:*

Associate Editor      Frontiers in Brain Imaging Methods, 2012 – Current  
                                 Frontiers in Human Neuroscience, 2015 – Current  
                                 Frontiers in Neuroinformatics, 2016 - Current

### Ad hoc grant reviewer

National Science Foundation, 2008, 2010, 2013  
National Medical Research Council, Singapore, 2007, 2009, 2011-2012  
Department of Defense, 2011

### Ad hoc editorial reviewer

Biological Psychiatry, Brain, Brain and Language, Current Biology, European Journal of Neuroscience, Frontiers in Computational Neuroscience, Frontiers in Systems Neuroscience, Frontiers in Neuroinformatics, Human Brain Mapping, Journal of the Acoustical Society of America, Journal of Neuroscience, Journal of Speech, Language and Hearing Research, Magnetic Resonance in Medicine, NeuroImage  
Editorial board, Special Research Topic, Python in Neuroscience, Frontiers in Neuroscience  
Nipype teaching workshops, Edinburgh 2011, Magdeburg 2012  
Speaker, Educational workshop, Organization for Human Brain Mapping, Seattle, 2013  
Organizer, HBM Hackathon, Organization for Human Brain Mapping, Seattle, 2013  
Local organizing committee, 4<sup>th</sup> Biennial Conference on Resting State Connectivity, Boston, 2014

## Technological and Other Scientific Innovations

Nipype: Brain imaging analysis framework 2008-      Gorgolewski K, Burns CD, Madison C, Clark D, Halchenko YO, Waskom ML, Ghosh SS. (2011). Nipype: a flexible, lightweight and extensible neuroimaging data processing framework in Python. *Front. Neuroinform.* 5:13.  
Nipype provides an environment that encourages interactive exploration of algorithms from different packages (e.g., SPM, FSL, FreeSurfer, Camino, MRtrix, AFNI, Slicer), eases the design of workflows within and between packages, and reduces the learning curve necessary to use different packages. I continue develop and oversee the development of the software, funded initially through an R03, as an opensource collaborative project.

MURFI: a realtime      Hinds, O., Ghosh, S., Thompson, T.W., Yoo, J.J., Whitfield-Gabrieli, S.,

MR biofeedback software 2007-	<p>Triantafyllou, C., Gabrieli, J.D. (2011) Computing moment-to-moment BOLD activation for real-time neurofeedback. <i>Neuroimage</i>. 54(1):361-8. PMID: 20682350.</p> <p>This software framework allows biofeedback of activation based on the BOLD signal. I provided that testing and validation framework for the software and contributed to its design and implementation. We are now using this software for three ongoing projects and I have secured additional funding to continue its development.</p>
Realtime voice modification setup 2005-2007	<p>Cai, S, Boucek, M, Ghosh, S.S., Guenther, F.H., Perkell, J.S. (2008) A System for Online Dynamic Perturbation of Formant Trajectories and Results from Perturbations of the Mandarin Triphthong /iau/. International Seminar in Speech Production, Strassbourg, France.</p> <p>This system was initially implemented on a Texas instruments DSP board and later transferred to a solution that involved commodity ASIO capable sound cards and a standard software stack based on RtAudio.</p>
Noise suppression for MRI patient microphone input 2004-2005	<p>Two provisional patents were applied for but not pursued after expiry.</p> <p>2007 Online noise suppression software for Magnetic Resonance Imaging</p> <p>2007 Bidirectional noise suppressing communication setup for Magnetic Resonance Imaging</p> <p>The goal of this software was to provide a mechanism to suppress MR noise. This is still being used in research projects at MIT.</p>
Carotid artery diameter estimation from ultrasound images 1999-2000	<p>Current usage status is unknown. I built the graphical interface for the software to provide a semi-automated method for artery diameter estimation that reduced human intervention significantly and validated it against manual measurements.</p>
FlexEffex: Interactive sound effects and music 1997-1998	<p>I contributed to the development of the FlexEffex architecture and rewrote the internal sound effects plugin api and hardware libraries. The software was subsequently sold to a company, MindMaker Inc.</p>

## Publications

1. Guenther, F.H., Nieto-Castanon, A., Tourville, J.A. and **Ghosh, S.S.** (2001) The effects of categorization training on auditory perception and cortical representations. Proceedings of the Speech Recognition as Pattern Classification (SPRAAC) Workshop, Nijmegen, The Netherlands.
2. Guenther, F.H. and **Ghosh, S.S.** (2003) A model of cortical and cerebellar function in speech. Proceedings of the XVth International Congress of Phonetic Sciences (pp. 169-173). Barcelona, Spain: 15th ICPhS Organizing Committee.
3. Guenther, F.H., **Ghosh, S.S.** and Nieto-Castanon, A. (2003) A neural model of speech production. Proceedings of the 6th International Seminar on Speech Production. Sydney, Australia
4. Nieto-Castanon, A., **Ghosh, S.S.**, Tourville, J.A., Guenther, F.H. (2003) Region of interest based analysis of functional imaging data. *Neuroimage*. 19(4):1303-16. PMID: 12948689.
5. Guenther, F.H., Nieto-Castanon, A., Ghosh, S.S., Tourville, J.A. (2004) Representation of sound categories in auditory cortical maps. *J Speech Lang Hear Res*. 47(1):46-57. PMID: 15072527.

6. Max, L., Guenther, F.H., Gracco, V.L., **Ghosh, S.S.** and Wallace, M.E. (2004) Unstable or insufficiently activated internal models and feedback-biased motor control as sources of dysfluency: A theoretical model of stuttering. *Contemporary Issues in Communication Science and Disorders*. 31.
7. Klein, A., Mensh, B., **Ghosh, S.**, Tourville, J., Hirsch, J. (2005) Mindboggle: automated brain labeling with multiple atlases. *BMC Med Imaging*. 5:7. PMID: PMC1283974.
8. Guenther, F.H., **Ghosh, S.S.**, Tourville, J.A. (2006) Neural modeling and imaging of the cortical interactions underlying syllable production. *Brain Lang*. 96(3):280-301. PMID: PMC1473986.
9. Guenther, F.H., **Ghosh, S.S.**, Nieto-Castanon, A. and Tourville, J.A. (2006) A neural model of speech production. In: J. Harrington & M. Tabain (eds.), *Speech Production: Models, Phonetic Processes, and Techniques*. London: Psychology Press.
10. Tiede, M., Shattuck-Hufnagel, S., Johnson, B., **Ghosh, S.**, Matthies, M., Zandipour, M. and Perkell, J. (2007) Gestural phasing in /kt/ sequences contrasting within and cross word contexts. *Proceedings of the XVIth International Congress of Phonetic Sciences*. Saarbrücken, Germany.
11. **Ghosh, S.S.**, Tourville, J.A., Guenther, F.H. (2008) A neuroimaging study of premotor lateralization and cerebellar involvement in the production of phonemes and syllables. *J Speech Lang Hear Res*. 51(5):1183-202. PMID: PMC2652040.
12. Cai, S., Boucek, M., **Ghosh, S.S.**, Guenther, F.H., Perkell, J.S. (2008) A System for Online Dynamic Perturbation of Formant Trajectories and Results from Perturbations of the Mandarin Triphthong /iau/. *International Seminar in Speech Production*, Strassbourg, France.
13. Balci, S.K., Sabuncu, M.R., Yoo, J., **Ghosh, S.S.**, Whitfield-Gabrieli, S., Gabrieli, J.D., Golland, P. (2008) Prediction of Successful Memory Encoding from fMRI Data. *Med Image Comput Comput Assist Interv*. 2008(11):97-104. PMID: PMC2855196.
14. Perkell, J.S., Lane, H., **Ghosh, S.S.**, Matthies, M.L., Tiede, M., Guenther, F., Ménard, L. (2008) Mechanisms of Vowel Production: Auditory Goals and Speaker Acuity. *International Seminar in Speech Production*, Strassbourg, France.
15. Klein, A., **Ghosh, S.S.**, Avants, B., Yeo, B.T., Fischl, B., Ardekani, B., Gee, J.C., Mann, J.J., Parsey, R.V. (2010) Evaluation of volume-based and surface-based brain image registration methods. *Neuroimage*. 51(1):214-20. PMID: PMC2862732.
16. Cai, S., **Ghosh, S.S.**, Guenther, F.H., Perkell, J.S. (2010) Adaptive auditory feedback control of the production of formant trajectories in the Mandarin triphthong /iau/ and its pattern of generalization. *J Acoust Soc Am*. 128(4):2033-48. PMID: PMC2981117.
17. **Ghosh, S.S.**, Kakunoori, S., Augustinack, J., Nieto-Castanon, A., Kovelman, I., Gaab, N., Christodoulou, J.A., Triantafyllou, C., Gabrieli, J.D., Fischl, B. (2010) Evaluating the validity of volume-based and surface-based brain image registration for developmental cognitive neuroscience studies in children 4 to 11 years of age. *Neuroimage*. 53(1):85-93. PMID: PMC2914629.
18. **Ghosh, S.S.**, Matthies, M.L., Maas, E., Hanson, A., Tiede, M., Ménard, L., Guenther, F.H., Lane, H., Perkell, J.S. (2010) An investigation of the relation between sibilant production and somatosensory and auditory acuity. *J Acoust Soc Am*. 128(5):3079-87. PMID: PMC3003728.
19. Golfinopoulos, E., Tourville, J.A., Bohland, J.W., **Ghosh, S.S.**, Nieto-Castanon, A., Guenther, F.H. (2011) fMRI investigation of unexpected somatosensory feedback perturbation during speech. *Neuroimage*. 55(3):1324-38. PMID: PMC3065208
20. Silver, A.L., Nimkin, K., Ashland, J.E., **Ghosh, S.S.**, Van der Kouwe, A.J., Brigger, M.T., Hartnick, C.J. (2011) Cine magnetic resonance imaging with simultaneous audio to evaluate pediatric velopharyngeal insufficiency. *Arch Otolaryngol Head Neck Surg*. 137(3):258-63.
21. Brunner, J., **Ghosh, S.**, Hoole, P., Matthies, M., Tiede, M., Perkell, J. (2011) The influence of auditory acuity on acoustic variability and the use of motor equivalence during adaptation to a perturbation. *J Speech Lang Hear Res*. 54(3):727-39. PMID: 20966388.

22. Cai, S., **Ghosh, S.**, Guenther, F., Perkell, J. (2011). Focal manipulations of formant trajectories reveal a role of auditory feedback in the online control of both within-syllable and between-syllable speech timing. *J Neurosci* 31: 45. 16483-16490. PMID: 22072698.
23. Hinds, O., **Ghosh, S.**, Thompson, T.W., Yoo, J.J., Whitfield-Gabrieli, S., Triantafyllou, C., Gabrieli, J.D. (2011) Computing moment-to-moment BOLD activation for real-time neurofeedback. *Neuroimage*. 54(1):361-8. PMID: 20682350.
24. Gorgolewski, K., Burns, C.D., Madison, C., Clark, D., Halchenko, Y.O., Waskom, M.L., **Ghosh, S.S.** (2011). Nipype: a flexible, lightweight and extensible neuroimaging data processing framework in Python. *Front. Neuroinform.* 5:13.
25. Perrachione, T.K., Del Tufo, S.N., **Ghosh, S.S.**, Gabrieli, J.D.E. (2011) "Phonetic variability in speech perception and the phonological deficit in dyslexia." 17th Meeting of the International Congress of Phonetic Sciences, (Hong Kong, August 2011).
26. Poline, J., Breeze, J.L., **Ghosh, S.S.**, Gorgolewski, K., Halchenko, Y.O., Hanke, M., Haslegrove, C., Helmer, K.G., Marcus, D.S., Poldrack, R.A., Schwartz, Y., Ashburner, J. and Kennedy, D.N. (2012). Data sharing in neuroimaging research. *Front. Neuroinform.* 6:9.
27. **Ghosh, S.S.**, Klein, A., Avants, B. and Millman, K.J. (2012). Learning from open source software projects to improve scientific review. *Front. Comput. Neurosci.* 6:18
28. Cai, S., Beal, D.S., **Ghosh, S.S.**, Tiede, M.K., Guenther, F.H., Perkell, J.S. (2012) Weak responses to auditory feedback perturbation during articulation in persons who stutter: Evidence for abnormal auditory-motor transformation. *PLoS One*.
29. \* Doehrmann, O., \* **Ghosh, S.S.**, Polli, F.P., Reynolds, G., Horn, F., Keshavan, A., Whitfield-Gabrieli, S., Hofmann, S.G., Pollack, M., Gabrieli, J.D. (2013) Predicting treatment response in social anxiety disorder from functional magnetic resonance imaging. *JAMA Psychiatry*. (\* Joint first authors)
30. Hinds, O., Thompson, T., **Ghosh, S.S.**, Yoo, J., Whitfield-Gabrieli, S., Triantafyllou, C., Gabrieli, J. (2013) Roles of Default-Mode Network and Supplementary Motor Area in Human Vigilance Performance: Evidence from Real-Time fMRI. *Journal of Neurophysiology*.
31. Tustison NJ, Johnson HJ, Rohlfing T, Klein A, **Ghosh SS**, Ibanez L and Avants B (2013). Instrumentation bias in the use and evaluation of scientific software: Recommendations for reproducible practices in the computational sciences. *Front. Neurosci.* 7:162.
32. **Ghosh, S.S.**, Keshavan, A., Langa, G (2013). Predicting Treatment Response from Resting State fMRI Data: Comparison of Parcellation Approaches. 3rd International Workshop on Pattern Recognition in NeuroImaging (Philadelphia, June 2013).
33. Perrachione, T.K. and **Ghosh, S.S.** (2013). Optimized design and analysis of sparse-sampling fMRI experiments. *Front. Neurosci.* 7:55. doi: 10.3389/fnins.2013.00055
34. Cai, S., Beal, D.S., **Ghosh, S.S.**, Guenther, F.H., Perkell, J.S. (2014) Impaired timing adjustments in response to time-varying auditory perturbation during connected speech production in persons who stutter. *Brain and Language*.
35. Cai, S., Tourville, J.A., Beal, D.S., Perkell, J.S., Guenther, F.H. and **Ghosh, S.S.** (2014). Diffusion Imaging of Cerebral White Matter in Persons Who Stutter: Evidence for Network-Level Anomalies. *Front. Hum. Neurosci.* 8:54
36. Christodoulou JA, Del Tufo SN, Lymberis J, Saxler PK, **Ghosh SS**, Triantafyllou C, Whitfield-Gabrieli S, Gabrieli JD. (2014). Brain bases of reading fluency in typical reading and impaired fluency in dyslexia. *PLoS One*. 9(7):e100552. doi: 10.1371/journal.pone.0100552. eCollection 2014.
37. Stoeckel, L.E., Garrison, K.A., **Ghosh, S.S.**, Wighton, P., Hanlon, C.A., Gilman, J.M., Greer, S., Turk-Browne, N.B., deBettencourt, M.T., Scheinost, D., Craddock, C., Thompson, T., Calderon, V., Bauer, C.C., George, M., Breiter, H.C., Whitfield-Gabrieli, S., Gabrieli, J.D., LaConte, S.M., Hirshberg, L., Brewer, J.A., Hampson, M., Van Der Kouwe, A., Mackey, S., Evins, A.E. (2014).

Optimizing real time fMRI neurofeedback for therapeutic discovery and development, *NeuroImage: Clinical*

38. Gabrieli, J.D.E., **Ghosh, S.S.**, Whitfield-Gabrieli, S. (2015). Prediction as a Humanitarian and Pragmatic Contribution from Human Cognitive Neuroscience. *Neuron*.
39. Gorgolewski KJ, Varoquaux G, Rivera G, Schwartz Y, Sochat VV, **Ghosh SS**, Maumet C, Nichols TE, Poline JB, Yarkoni T, Margulies DS, Poldrack RA (2015). NeuroVault.org: A repository for sharing unthresholded statistical maps, parcellations, and atlases of the human brain. *Neuroimage*.
40. Gorgolewski KJ, Varoquaux G, Rivera G, Schwarz Y, **Ghosh SS**, Maumet C, Sochat VV, Nichols TE, Poldrack RA, Poline JB, Yarkoni T, Margulies DS. (2015). NeuroVault.org: a web-based repository for collecting and sharing unthresholded statistical maps of the human brain. *Front Neuroinform*. 10;9:8.
41. Langs G, Golland P, **Ghosh SS**. (2015) Predicting Activation Across Individuals with Resting-State Functional Connectivity Based Multi-Atlas Label Fusion. *Med Image Comput Comput Assist Interv*. 9350:313-320.
42. Williamson JR, Quatieri TF, Helfer BS, Perricone J, **Ghosh SS**, Ciccarelli G, Mehta DD. (2015) Segment-dependent dynamics in predicting Parkinson's disease. In Sixteenth Annual Conference of the International Speech Communication Association.
43. Christodoulou JA, Murtagh J, Cyr A, Perrachione TK, Chang P, Halverson K, Hook P, Yendiki A, **Ghosh S**, Gabrieli JD. (2016) Relation of White-Matter Microstructure to Reading Ability and Disability in Beginning Readers. *Neuropsychology*.
44. Sitek KR, Cai S, Beal DS, Perkell JS, Guenther F and **Ghosh SS** (2016). Decreased cerebellar-orbitofrontal connectivity correlates with stuttering severity: Whole-brain functional and structural connectivity associations with persistent developmental stuttering. *Front. Hum. Neurosci*. 10:190. doi: 10.3389/fnhum.2016.00190
45. Whitfield-Gabrieli S, **Ghosh SS**, Nieto-Castanon A, Saygin Z, Doehrmann O, Chai XJ, Reynolds GO, Hofmann SG, Pollack MH, Gabrieli JD. (2016) Brain connectomics predict response to treatment in social anxiety disorder. *Mol Psychiatry*.
46. Allen GI, Amoroso N, Anghel C, Balagurusamy V, Bare CJ, Beaton D, Bellotti R, Bennett DA, Boehme K, Boutros PC, Caberlotto L, Caloian C, Campbell F, Chaibub Neto E, Chang YC, Chen B, Chen CY, Chien TY, Clark T, Das S, Davatzikos C, Deng J, Dillenberger D, Dobson RJB, Dong Q, Doshi J, Duma D, Errico R, Erus G, Everett E, Fardo DW, Friend SH, Fröhlich H, Gan J, George-Hyslop P, **Ghosh SS**, Glaab E, Green RC, Guan Y, Hong MY, Huang C, Hwang J, Ibrahim J, Inglese P, Jiang Q, Katsumata Y, Kauwe JSK, Klein A, Kong D, Krause R, Lalonde E, Lauria M, Lee E, Lin X, Liu Z, Livingstone J, Logsdon BA, Lovestone S, Lyappan A, Ma M, Malhotra A, Mangravite LM, Maxwell TJ, Merrill E, Nagorski J, Namasivayam A, Narayan M, Naz M, Newhouse SJ, Norman TC, Nurtdinov RN, Oyang YJ, Pawitan Y, Peng S, Peters MA, Piccolo SR, Praveen P, Priami C, Sabelnykova VY, Senger P, Shen X, Simmons A, Sotiras A, Stolovitzky G, Tangaro S, Tateo A, Tung YA, Tustison NJ, Varol E, Vradenburg G, Weiner MW, Xiao G, Xie L, Xie Y, Xu J, Yang H, Zhan X, Zhou Y, Zhu F, Zhu H, Zhu S. (In press) Crowdsourced estimation of cognitive decline and resilience in Alzheimer's disease, *Alzheimer's & Dementia*, Available online 11 April 2016, ISSN 1552-5260, <http://dx.doi.org/10.1016/j.jalz.2016.02.006>.
47. Cameron Craddock R, S Margulies D, Bellec P, Nolan Nichols B, Alcauter S, A Barrios F, Burnod Y, J Cannistraci C, Cohen-Adad J, De Leener B, Dery S, Downar J, Dunlop K, R Franco A, Seligman Froehlich C, J Gerber A, **Ghosh SS**, J Grabowski T, Hill S, Sólón Heinsfeld A, Matthew Hutchison R, Kundu P, R Laird A, Liew SL, J Lurie D, G McLaren D, Meneguzzi F, Mennes M, Mesmoudi S, O'Connor D, H Pasaye E, Peltier S, Poline JB, Prasad G, Fraga Pereira R, Quirion PO, Rokem A, S Saad Z, Shi Y, C Strother S, Toro R, Q Uddin L, D Van Horn J, W Van Meter J, C Welsh R, Xu T (2016). Brainhack: a collaborative workshop for the open neuroscience community. *Gigascience*.

5:16. doi: 10.1186/s13742-016-0121-x. eCollection 2016. PubMed PMID: 27042293; PubMed Central PMCID: PMC4818387.

48. Gorgolewski KJ, Auer T, Calhoun VD, Craddock RC, Das S, Duff EP, Flandin G, **Ghosh SS**, Glatard T, Halchenko YO, Handwerker DA, Hanke M, Keator D, Li X, Michael Z, Maumet C, Nichols BN, Nichols TE, Pellman J, Poline JB, Rokem A, Schaefer G, Sochat V, Triplett W, Turner JA, Varoquaux G, Poldrack RA. (2016) The brain imaging data structure, a format for organizing and describing outputs of neuroimaging experiments. *Sci Data*. 3:160044. doi: 10.1038/sdata.2016.44. PubMed PMID: 27326542.
49. Ciccarelli G, Quatieri TF, **Ghosh SS** (2016) Neurophysiological Vocal Source Modeling for Biomarkers of Disease. In Seventeenth Annual Conference of the International Speech Communication Association.

### **Conference abstracts** (available upon request)

#### **Invited Presentations**

*Predicting Treatment Outcome in Social Anxiety Disorder and Tracking Major Depression and Parkinson State Using Behavioral Information*

ACNP 55<sup>th</sup> Annual Meeting, Florida, USA, 2016

*Standardized Provenance for Reproducible Dataflows in Neuroscience*

Japan Neuroscience Society, Yokohama, Japan, 2016

*Speaking one's mind: Vocal biomarkers of depression and Parkinson disease*

Acoustical Society of America, Salt Lake City, USA, 2016

*Predicting Treatment Outcome in Anxiety and Depression*

McLean Hospital, Belmont, USA, 2015

Organization for Human Brain Mapping, Hawaii, USA, 2015

*Linking Knowledge and Reproducible Research Via Standardized Provenance Models*

Workshop at the Bernstein Computational Neuroscience conference, Heidelberg, Germany, 2015

Tools for Integrating and Planning Research in Neuroscience, UCLA, Los Angeles, USA, 2014

*A Neuroinformatics Bridge to Personalized Healthcare*

Boston University, Hearing research seminar, Boston, USA, 2014

Vanderbilt University, Nashville, USA, 2014

*Enabling knowledge generation and reproducible research by embedding provenance models in metadata stores*

Neuroinformatics Congress, Stockholm, Sweden, 2013

*Python Tools for Reproducible Research in Brain Imaging*

PyData conference, Boston, USA, 2013

*Nipype: Opensource platform for unified and replicable interaction with existing neuroimaging tools*

Brigham and Womens Hospital, Boston, USA, 2009

Massachusetts General Hospital, Boston, USA, 2010, 2012, 2013

Radiology, U of Washington, Seattle, USA, 2011,  
PICSU, U of Pennsylvania, Philadelphia, USA, 2011  
Scientific Python Conference in India, Hyderabad, India, 2010  
INCF Datasharing Workshop, Quebec, Canada, 2011  
Python in Neuroscience Workshop, Paris, France, 2011

*Leveraging scientific computation to bridge neuroimaging and clinical applications*

Radiology, U of Pennsylvania, Philadelphia, USA, 2011  
Haskins Laboratories, New Haven, Connecticut, USA 2012

*Datasharing and reproducible research: Barriers and solutions*

Janelia Farm Bioimage Informatics II Conference, Washington DC, USA, 2011  
University de Montreal, Montreal, Canada, 2013

*Using high-resolution fMRI to identify individual-specific speech motor regions*

Surgical Brain-Mapping laboratory, Brigham and Womens Hospital, Boston, USA, 2010

*Region of interest analysis of functional Magnetic Resonance Imaging data*

New York State Psychiatric Institute, Columbia University, New York, USA, 2007  
Singapore General Hospital, Singapore, Singapore, 2007

*Exploring speech motor control through computational modeling and neuroimaging*

Center for Life Sciences, National University of Singapore, Singapore, 2007

## **Research contracts and grants**

### **Current**

- 2016 – 2019 Nipype: Dataflows for Reproducible Biomedical Research  
NIH/NIBIB/R01 EB020740  
PI
- 2016 – 2021 ReproNim: Center for Reproducible Neuroimaging Computation  
NIH/NIBIB/P41 EB019936 (PI: David Kennedy, UMass Medical School)  
Director: Technology, Research and Development Project 2  
Member administrative and training core  
Subaward PI
- 2015 – 2019 Connectomes related to anxiety and depression in adolescents.  
NIH/NIMH/U01 MH108168 (PI: Susan Whitfield-Gabrieli, John Gabrieli)  
Project Coordinator
- 2015 – 2016 Genetic Determinants of Schizophrenia Intermediate Phenotypes  
NIH/NIMH/R01 (Supplement) MH092380 (PI: Tracey Petryshen, MGH)  
Subaward PI
- 2011 – 2016 Using Real-Time Functional Brain Imaging and Computer Training To Enhance Recovery  
from Traumatic Brain Injury (TBI) (PI: John Gabrieli)  
DOD/Clinical trial award PT100120  
Investigator
- 2012 – 2016 A randomized controlled trial of intranasal oxytocin as an adjunct to behavioral therapy for  
autism spectrum disorder (PI: John Gabrieli)



DOD/Clinical Trial Award AR110329  
 Subaward PI  
 2012 – 2016 Blast Induced Traumatic Brain Injury  
 DOD/Institute for Soldier NanoTechnologies  
 Investigator  
 2014 – 2016 Brain basis for voice-based tracking of neurological disorders  
 MIT McGovern Institute Neurotechnology Program  
 MIT Lincoln Lab Funds  
 Co-PI

**Past**

2008-2010 Dissemination of cross-platform software for artifact detection and region of interest  
 analysis of fMRI data  
 NIH/NIBIB/R03 EB008673  
 Co-PI  
 2012 - 2014 Learned regulation of the limbic network via combined EEG and fMRI (PI: John Gabrieli)  
 NIH/NIMH/R21 MH092564  
 Investigator  
 2012 – 2015 MURFI: An Optimized Platform for Realtime fMRI Neurofeedback  
 MIT McGovern Institute Neurotechnology Program  
 Co-PI