

## CURRICULUM VITAE

**Martin A. Lindquist**

### PERSONAL DATA

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### EDUCATION AND TRAINING

- 2001                    PhD, Department of Statistics, *Rutgers University, New Brunswick, NJ*  
GPA: 3.97/4.0  
Dissertation: Fast Functional MRI Using Two-Dimensional Prolate Spheroidal  
Wavefunctions. Advisors: Larry Shepp, PhD. & Cun-Hui Zhang, PhD.
- 1997                    MSc., Engineering Physics, *Royal Institute of Technology (KTH); Stockholm, Sweden*  
Concentration: Applied Mathematics. Thesis: Non-Homogenous Type II Counter  
Models for the Release of Neurotransmitters.
- 1996                    Department of Mathematics and Statistics, *University of Sydney; Australia*  
Master's Thesis Research
- 1990-1992            Department of History and History of Ideas, *Stockholm University; Sweden*

### PROFESSIONAL EXPERIENCE

- 2015 - Present        Professor. Department of Biostatistics, *Johns Hopkins University, Baltimore, MD*
- 2012 - 2015           Associate Professor. Department of Biostatistics, *Johns Hopkins University, Baltimore, MD*
- 2008 - 2012           Associate Professor. Department of Statistics, *Columbia University, New York, NY*
- 2002 - 2008           Assistant Professor. Department of Statistics, *Columbia University, New York, NY*
- Spring 2002           Visiting Assistant Professor. Department of Mathematics, *University of Minnesota, Minneapolis, MN*. Responsible for two undergraduate mathematics courses.
- 2001-2002            Post-Doctoral Associate. Center for Magnetic Resonance Research, *University of Minnesota, Minneapolis, MN*. Research on statistical problems relating to fMRI.
- 2000-2001            Course Instructor. Department of Statistics, *Rutgers University, New Brunswick, NJ*  
Introduction to Computers for Statistics (Fall 2000 & Spring 2001)
- 2000                    Visiting Scholar. Department of Statistics, *Stanford University, Palo Alto, CA*

## PROFESSIONAL EXPERIENCE (continued)

- 1999-2000      Consultant. Center for NMR Research, *Hershey Medical Center, Hershey, PA*  
Developed new algorithms and software for fMRI.
- 1998            Internship. Performance Analysis Department, *Lucent Technologies, Holmdel, NJ*  
Developed software reliability model tailored to Lucent system-testing data.
- 1997            Internship. Performance Analysis, *Ericsson Mobile Communications AB, Kista, Sweden*  
Automated modem testing procedures.
- 1996            Researcher. Department of Mathematics and Statistics, *University of Sydney, Australia*  
Conducted research involving statistical models for the release of neurotransmitters.

## PROFESSIONAL ACTIVITIES

### Conference Program Committee:

- June 2017      Organization for Human Brain Mapping, *Vancouver, Canada*  
June 2016      Organization for Human Brain Mapping, *Geneva, Switzerland*  
June 2015      Organization for Human Brain Mapping, *Honolulu, HI*  
August 2014    Joint Statistical Meetings, *Boston, MA*  
March 2014    Eastern North American Region/International Biometric Society, *Baltimore, MD*  
October 2009   2nd International Conference on Image and Signal Processing, *Tianjin, China*

### Conference Session Chair:

- August 2014    The Graphical Modeling and Longitudinal Analysis of fMRI Data; JSM, *Boston, MA*  
August 2013    Advanced Methods in Brain Imaging Research; JSM, *Montreal, Canada*  
June 2013      Big Data in Neuroimaging: Big Opportunities or Just a Big Hassle - The Skeptical  
Neuroimagers View, Human Brain Mapping, *Seattle, WA*  
August 2010    Statistical Learning in Biology; JSM, *Vancouver, Canada*  
June 2009      Modeling & Analysis: Neuroinformatics; Human Brain Mapping, *San Francisco, CA*

### Journal Referee:

- Journal of the American Statistical Association
- Annals of Applied Statistics
- Journal of the Royal Statistical Society, Series B
- Biometrics
- Biostatistics
- Statistica Sinica
- Statistical Science
- Computational Statistics and Data Analysis
- Statistics in Medicine
- International Journal of Imaging Systems and Technology
- IEEE Transactions on Medical Imaging
- NeuroImage
- NeuroImage: Clinical
- Human Brain Mapping
- Brain Imaging and Behavior

Journal Referee (continued)

- Social Cognitive and Affective Neuroscience
- Journal of Neuroscience Methods
- IEEE Journal of Selected Topics in Signal Processing
- Journal of Magnetic Resonance Imaging
- Journal of Cerebral Blood Flow & Metabolism
- Biological Psychology
- Statistical Analysis and Data Mining
- Frontiers in Neuroscience
- Brain Connectivity
- Current Biology
- Nature Reviews Neuroscience
- JAMA Psychiatry
- Proceedings of the National Academy of Sciences

Book Referee:

- Prentice Hall
- Chapman & Hall/CRC I Taylor and Francis Group

Grant Panels:

- NSF/NIH/BMBF - Collaborative Research in Computational Neuroscience (CRCNS)
- NIH NIBIB – Career Development Award

Grant Referee:

- CHDI Foundation, Independent Statistical Standing Committee (ISSC), Member
- National Science Foundation – Division of Mathematical Sciences
- National Science Foundation – Information & Intelligent Systems (IIS) Division
- National Science Foundation – Cognitive Neuroscience Program
- King Abdullah University of Science and Technology (KAUST) Competitive Research Grants (CRG) program
- W. M. Keck Foundation
- Research Foundation Flanders (FWO)
- Leibniz Association

Professional Memberships:

- American Statistical Association
- Eastern North American Region/International Biometric Society
- Organization for Human Brain Mapping

Other Professional Activities:

- Chair of the Statistics in Imaging ASA section 2017-18.
- Founding member of the Statistics in Imaging ASA section.
- Program chair of the Statistics in Imaging ASA section 2013-14.
- ENAR Student Paper Committee 2013-2015
- ENAR Regional Advisory Board (RAB) 2014-2016
- OHBM Council 2014-2017
- OHBM Program Committee 2014-2017

Other Professional Activities (continued)

- OHBM Education Chair 2015
- CHDI Working Group on Statistical Power

**EDITORIAL ACTIVITIES**

Editorial Board:

- Human Brain Mapping (2016-present)
- JASA – Theory and Methods (2011-2017)
- Statistica Sinica (2014-2017)
- NeuroImage (2009-2012)
- Statistics Surveys (2011-present)
- International Journal of Imaging Systems and Technology (2010- present)

**HONORS AND AWARDS**

Awards

- |                       |  |
|-----------------------|--|
| 2016                  | Fellow of the American Statistical Association   |
| 2013-2014,<br>2015-17 | JHSPH Recognition for Excellence in Teaching   |
| 2001                  | Conference Travel Award<br><i>Rutgers University; The Graduate School New Brunswick</i>                                  |
| 2000                  | Travel Stipend for Visiting Scholar position<br><i>Rutgers University; The Graduate School New Brunswick</i>             |
| 1997-1999             | Excellence Fellowship for Graduate Studies in Statistics<br><i>Rutgers University; The Graduate School New Brunswick</i> |
| 1996                  | Travel Stipend for Study Abroad<br><i>Royal Institute of Technology (KTH); Stockholm, Sweden</i>                         |

**PATENTS**

Tor Wager and Martin Lindquist. "FMRI-BASED NEUROLOGIC SIGNATURE OF PHYSICAL PAIN." U.S. Patent 20,160,054,409, issued February 25, 2016.

## PUBLICATIONS

(\* - Student first author mentored by Lindquist)

### Journal Articles

Qing Yang, Martin Lindquist, Lawrence Shepp, Cun-Hui Zhang, Jianli Wang and Michael Smith (2002). "The Two Dimensional Prolate Spheroidal Wave Function for MRI". *Journal of Magnetic Resonance*, 158, 43-51.

Essa Yacoub, Timothy Duong, Pierre-Francoise Van De Moortele, Martin Lindquist, Gregor Adriany, Seong-Gi Kim, Xiaoping Hu and Kamil Ugurbil (2003). "Spin Echo fMRI in Humans Using High Spatial Resolutions and High Magnetic Fields". *Magnetic Resonance in Medicine* 49, 655-664.

Martin Lindquist (2003). "Optimal Data Acquisition in fMRI Using Prolate Spheroidal Wave Functions". *International Journal of Imaging Systems and Technology*, 13, 803-812.

Martin Lindquist, Cun-Hui Zhang, Gary Glover, Lawrence Shepp and Qing Yang (2006). "A Generalization of the Two Dimensional Prolate Spheroidal Wave Function Method for Non-Rectilinear MRI Data Acquisition Methods". *IEEE Transactions in Image Processing* 15(9), 2792-2804.

Martin Lindquist and Tor Wager (2007). "Validity and Power in Hemodynamic Response Modeling: A comparison study and a new approach". *Human Brain Mapping*, 28(8) 764-784.

Martin Lindquist, Christian Waugh and Tor Wager (2007). "Modeling state-related fMRI activity using change-point theory". *NeuroImage* 35, 1125-1141.

Tor Wager, Martin Lindquist and Lauren Kaplan (2007). "Meta-analysis of functional neuroimaging data: Current and future directions", *Social Cognitive and Affective Neuroscience* 2: 150-158.

Martin Lindquist, Cun-Hui Zhang, Gary Glover and Lawrence Shepp (2008). "Rapid Three-Dimensional Functional Magnetic Resonance Imaging of the Negative BOLD Response". *Journal of Magnetic Resonance*, 191, 100-111.

Martin Lindquist and Tor Wager (2008). "Spatial Smoothing in fMRI using Prolate Spheroidal Wave Functions". *Human Brain Mapping*, 29(11), 1276-1287.

Ji-Meng Loh, Martin Lindquist and Tor Wager (2008). "Residual Analysis for Detecting Mis-modeling in fMRI". *Statistica Sinica*, 18, 1421-1448.

Martin Lindquist, Cun-Hui Zhang, Gary Glover and Lawrence Shepp (2008). "Acquisition and Statistical Analysis of Rapid 3D fMRI data". *Statistica Sinica*, 18(2008), 1395-1419.

Cun-Hui Zhang, Martin Lindquist, Z.H. Cho, Gary Glover and Lawrence Shepp (2008). "Fast Functional Magnetic Resonance Imaging – A New Approach Towards Neuroimaging" *Statistics and Its Interface*, 1, 13-22.

William Ottowitz, David Derro, Darin Dougherty, Martin Lindquist, Alan Fischman and Janet Hall (2008). "FDG-PET analysis of amygdalar-cortical network covariance during pre- versus post-menopausal estrogen levels: Potential relevance to resting state networks, mood, and cognition". *Neuroendocrinology Letters*, 29(4):101–000.

### Journal Articles (continued)

- Tor Wager, Matthew Davidson, Brent Hughes, Martin Lindquist and Kevin Ochsner (2008). "Prefrontal-subcortical pathways mediating successful emotion regulation". *Neuron*, 59, 1037-1050.
- Jack Grinband, Tor Wager, Martin Lindquist, Vincent Ferrera and Joy Hirsch (2008). "Modeling duration in event-related fMRI designs". *NeuroImage*, 43, 509-520.
- William Ottowitz, Karen Siedlecki, Martin Lindquist, Darin Dougherty, Alan Fischman and Janet Hall (2008). "Evaluation of prefrontal-hippocampal effective connectivity following 24 hours of estrogen infusion: An FDG-PET study". *Psychoneuroendocrinology*, 33, 1419-1425.
- Martin Lindquist, Ji Meng Loh, Lauren Atlas, and Tor Wager (2008). "Modeling the Hemodynamic Response Function in fMRI: Efficiency, Bias and Mis-modeling". *NeuroImage*, 45, S187-S198.
- Tor Wager, Martin Lindquist, Thomas Nichols, Hedy Kober and Jared Van Snellenberg (2008). "Evaluating the consistency and specificity of neuroimaging data using meta-analysis". *NeuroImage*, 45, S210-S221.
- Martin Lindquist (2008). "The Statistical Analysis of fMRI Data". *Statistical Science*, 23(4), 439-464.
- Martin Lindquist and Andrew Gelman (2009). "Correlations and Multiple Comparisons in Functional Imaging – a Statistical Perspective". *Perspectives on Psychological Science*, 4, 310-313.
- Tor Wager, Christian Waugh, Martin Lindquist, Doug Noll, Barb Fredrickson and Steve Taylor (2009). "Brain mediators of cardiovascular responses to social threat, Part I: Reciprocal dorsal and ventral sub-regions of the medial prefrontal cortex and heart-rate reactivity". *NeuroImage*, 47, 821-835.
- Tor Wager, Vanessa van Ast, Brent Hughes, Matthew Davidson, Martin Lindquist and Kevin Ochsner (2009). "Brain mediators of cardiovascular responses to social threat, Part II: Prefrontal subcortical pathways and relationship with anxiety". *NeuroImage*, 47, 836-851.
- Martin Lindquist and Ian McKeague (2009). "Logistic Regression with Brownian-like Predictors". *Journal of the American Statistical Association*, 104, 1575-1585.
- William Ottowitz, Thilo Deckersbach, Cary Savage, Martin Lindquist, Darin Dougherty (2010). "Neural correlates of strategic processes underlying episodic memory in women with major depression: an <sup>15</sup>O-PET study". *Journal of Neuropsychiatry and Clinical Neurosciences*, 22, 218-230.
- Lucy Robinson\*, Tor Wager, and Martin Lindquist (2010). "Change point estimation in multi-subject fMRI studies". *NeuroImage*, 49, 1581-1592.
- Martin Lindquist (2010). "The Benefits of Rapid fMRI". *International Journal of Imaging Systems and Technology*, 20, 14-22.
- Yu Yue, Ji Meng Loh and Martin Lindquist (2010). "Adaptive spatial smoothing of fMRI images". *Statistics and Its Interface*, 3, 3-13.
- Lauren Atlas, Niall Bolger, Martin Lindquist, and Tor Wager (2010). "Brain Mediators of Predictive Cue Effects on Perceived Pain", *Journal of Neuroscience*, 30, 12964-12977.

## Journal Articles (continued)

- Nikolaus Kriegeskorte, Martin Lindquist, Thomas Nichols, Russel Poldrack and Edward Vul (2010). "Everything you never wanted to know about circular analysis – but were afraid to ask". *Journal of Cerebral Blood Flow and Metabolism*, 30, 1551-1557
- Martin Lindquist and Michael Sobel (2011). "Graphical models, potential outcomes and causal inference: Comment on Ramsey, Spirtes and Glymour". *NeuroImage*, 57, 334-336.
- Martin Lindquist, Julie Spicer, Iris Asllani and Tor Wager (2012). "Estimating and testing variance components in a multi-level GLM". *NeuroImage*, 59, 490-501.
- Rohini Rao, Nina Jonsson, Camila Ventura, Rony Gelman, Martin Lindquist, Daniel Casper and Michael F. Chiang (2012). "Plus disease in retinopathy of prematurity: diagnostic impact of field of view". *Retina*, 32, 1148-55.
- Yu Yue, Martin Lindquist and Ji Meng Loh (2012). "Bayesian nonparametric binary regression: application to meta-analysis of functional neuroimaging data". *Annals of Applied Statistics*, 6, 697-718.
- Martin Lindquist and Michael Sobel (2012). "Cloak and DAG: A Response to the Comments on our Comment". *NeuroImage*, 76, 446-449.
- Martin Lindquist (2012). "Functional Causal Mediation Analysis with an application to Brain Connectivity". *Journal of the American Statistical Association*, 107, 1297-1309.
- Ivor Cribben\*, Ragnheidur Haraldsdottir, Lauren Atlas, Tor Wager and Martin Lindquist (2012). "Dynamic connectivity regression: Determining state-related changes in brain connectivity". *NeuroImage*, 61, 907-20.
- Lauren Atlas, Robert Whittington, Martin Lindquist, Joe Wielgosz, Nomita Sonty and Tor Wager (2012). "The role of expectancy during opioid analgesia: Dissociable influences of drugs and expectations on brain and behavior". *Journal of Neuroscience*, 32, 8053-64.
- Tor Wager, Lauren Atlas, Martin Lindquist, Mathieu Roy, Choong-Wan Woo and Ethan Kross (2013). "An fMRI-based Neurologic Signature of Physical Pain". *New England Journal of Medicine*, 368:1388-1397.
- Martin Lindquist, Brian Caffo, and Ciprian Crainiceanu (2013). "Ironing out the statistical wrinkles in 'Ten Ironic Rules'", *NeuroImage*, 81:499-502.
- Richard Leigh, Kenichi Oishi, John Hsu, Martin Lindquist, Rebecca Gottesman, Samson Jarso, Ciprian Crainiceanu, Susumu Mori, and Argye E. Hillis (2013). "Acute Lesions that Impair Emotional Empathy", *Brain*, 136: 2539-49.
- Ivor Cribben\*, Tor Wager, and Martin Lindquist (2013). "Detecting functional connectivity change points for single-subject fMRI data", *Frontiers in Computational Neuroscience*, 7.
- Haochang Shou, Ani Eloyan, Seonjoo Lee, Vadim Zipunnikov, Adina Crainiceanu, Mary Beth Nebel, Brian Caffo, Martin Lindquist, and Ciprian Crainiceanu (2014). "Quantifying the reliability of image replication studies: the image intra-class correlation coefficient (I2C2)", *Cognitive, Affective, and Behavioral Neuroscience*, 13 (4), 714-724.

## Journal Articles (continued)

David Degras and Martin Lindquist (2014). "A Hierarchical Model for Simultaneous Detection and Estimation in Multi-subject fMRI Studies", *NeuroImage*, 98:61-72.

Michael Sobel and Martin Lindquist (2014). "Causal Inference for fMRI Time Series Data with Systematic Errors of Measurement in a Balanced On/Off Study of Social Evaluative Threat", *Journal of the American Statistical Association*, 109 (507), 967-976.

Lauren Atlas, Martin Lindquist, Niall Bolger, and Tor Wager (2014). "Brain mediators of the effects of noxious heat on pain", *Pain*, 155:1632-1648.

Haochang Shou, Ani Eloyan, Mary Beth Nebel, Amanda Mejia, James J Pekar, Stewart Mostofsky, Brian Caffo, Martin Lindquist, and Ciprian M Crainiceanu (2014). "Shrinkage Prediction of Seed-voxel Brain Connectivity using Resting-state fMRI", *NeuroImage*, 102, 938-944.

Martin Lindquist, Yuting Xu, Mary Beth Nebel, and Brian Caffo (2014). "Evaluating dynamic bivariate correlations in resting-state fMRI: A comparison study and a new approach", *NeuroImage*, 101, 531-546.

Marcus Munafò, Simon Noble, William Browne, Dani Brunner, Katherine Button, Joaquim Ferreira, Peter Holmans, Douglas Langbehn, Glyn Lewis, Martin Lindquist, Kate Tilling, Eric-Jan Wagenmakers and Robi Blumenstein (2014). "Scientific rigor and the art of motorcycle maintenance", *Nature Biotechnology*, 32 (9), 871-873.

Ani Eloyan, Haochang Shou, Russell Shinohara, Elizabeth Sweeney, Mary Beth Nebel, Jennifer Cuzzocreo, Peter Calabresi, Daniel Reich, Martin Lindquist, and Ciprian Crainiceanu (2014) Health effects of lesion localization in multiple sclerosis: Spatial registration and confounding adjustment. *PLoS One* 9, 9.

Choong-Wan Woo, Leonie Koban, Ethan Kross, Martin Lindquist, Marie Banich, Luka Ruzic, Jessica Andrews-Hanna, and Tor Wager (2014). "Separate neural representations for physical pain and social rejection", *Nature Communications* 5.

Martin Lindquist (2014). "Review of 'Statistical and Computational Methods in Brain Image Analysis'", *Journal of the American Statistical Association*, 109, 1334-1335.

Yousef Hannawi, Martin Lindquist, Brian Caffo, Haris Sair, and Robert Stevens (2015). "Resting brain activity in disorders of consciousness: a systematic review and meta-analysis", *Neurology*, 84 (12), 1272-1280.

Martin Lindquist and Amanda Mejia (2015). "Zen and the Art of Multiple Comparisons", *Psychosomatic Medicine*, 77.2, 114-125.

Amanda Mejia\*, Mary-Beth Nebel, Haochang Shou, Ciprian Crainiceanu, Jim Pekar, Stewart Mostofsky, Brian Caffo and Martin Lindquist (2015). Improving reliability of subject-level resting-state fMRI parcellations with shrinkage. *NeuroImage*, 112, 14-29.

Gillinder Bedi, Martin Lindquist, and Margaret Haney (2015) "An fMRI-Based Neural Signature of Decisions to Smoke Cannabis", *Neuropsychopharmacology*, 40 (12), 2657-2665

Aaron Wong, Martin Lindquist, Adrian Haith, and John Krakauer (2015). "Explicit knowledge enhances motor vigor and performance: motivation versus practice in sequence tasks", *Journal of Neurophysiology*, 114 (1), 219-232.



## Journal Articles (continued)

John Muschelli, Elizabeth Sweeney, Martin Lindquist, and Ciprian Crainiceanu (2015). “fslr: Connecting the FSL Software with R”, *The R Journal*, 7(1), 163-175.

Ann Choe, Craig Jones, Suresh Joel, John Muschelli, Visar Belegu, Brian Caffo, Martin Lindquist, Peter van Zijl, James Pekar (2015). “Reproducibility and Temporal Structure in Weekly Resting-State fMRI over a Period of 3.5 Years”. *PLOS ONE* | DOI:10.1371/journal.pone.0140134

Martin Lindquist, Anjali Krishnan, Marina Lopez-Sola, Marieke Jepma, Choong-Wan Woo, Leonie Koban, Mathieu Roy, Lauren Y. Atlas, Luke Chang, Liz Losin, Hedwig Eisenbarth, Yoni K. Ashar, Zeb Delk, and Tor Wager (2015). “Group-regularized individual prediction: Theory and application to pain”. *NeuroImage*, in press.

Haris Sair, Noushin Yahyavi-Firouz-Abadi, Vince Calhoun, Raag Airan, Shruti Agarwal, Jarunee Intrapromkul, Ann Choe, Sachin Gujar, Brian Caffo, Martin Lindquist, and Jay Pillai (2015). “Presurgical brain mapping of the language network in patients with brain tumors using resting-state fMRI: comparison with task fMRI”. *Human Brain Mapping*, 37(3), 913-923.

Carlos Blanco, Melanie Wall, Martin Lindquist, Jorge Mario Rodríguez-Fernández, Silvia Franco, Shuai Wang, Mark Olfson (2016). “Generalizability of neuroimaging studies in 5 common psychiatric disorders based on the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)”. *Journal of Clinical Psychiatry*, 77, 1618-1625.

Shruti Agarwal, Haris Sair, Raag Airan, Jun Hua, Craig Jones, Hye-Young Heo, Alessandro Olivi, Martin Lindquist, James Pekar, and Jay Pillai (2016). “Demonstration of brain tumor-induced neurovascular uncoupling in resting state fMRI at ultra-high field”. *Brain Connectivity*, 6(4), 267-272.

Rajani Sebastian, Charliet Long, Jeremy J. Purcell, Andreia Faria, Martin Lindquist, Samson Jarso, David Race, Cameron Davis, Joseph Posner, Amy Wright, and Argye E. Hillis (2016). “Imaging network level language recovery after left PCA stroke”. *Restorative Neurology and Neuroscience*, 34, 473-489

Lei Huang, Phil Reiss, Luo Xiao, Vadim Zipunnikov, Martin Lindquist, and Ciprian Crainiceanu (2016). “Two-way principal component analysis for matrix-variate data, with an application to functional magnetic resonance imaging data”. *Biostatistics*, 18, 214-229.

Martin Lindquist (2016). “From CT to fMRI: Larry Shepp's Impact on Medical Imaging”. *Annual Review of Statistics and Its Application*, 3(1), 1-19.

Liat Helpman, Marie-France Marin, Santiago Papini, Xi Zhu, Gregory Sullivan, Franklin Schneier, Mariana Neria, Erel Shvil, Maria Josefa Malaga Aragon, John Markowitz, Martin Lindquist, Tor Wager, Mohammad Milad, and Yuval Neria (2016). “Neural changes in extinction recall following prolonged exposure treatment for PTSD: A longitudinal fMRI study”, *NeuroImage Clinical*, 12, 715-723.

Amanda Mejia\*, Mary Beth Nebel, Ani Eloyan, Brian Caffo, and Martin Lindquist (2016). “PCA leverage: outlier detection for high-dimensional functional magnetic resonance imaging data”, *Biostatistics*, in press.

Xi Zhu, Liat Helpman, Santiago Papini, Franklin Schneier, John Markowitz, Page Van Meter, Martin Lindquist, Tor Wager, and Yuval Neria (2016). “Altered Resting State Functional Connectivity of Fear and Reward Circuitry in Comorbid PTSD and Major Depression”, *Depression and Anxiety*, 34 (7), 641-650.

### Journal Articles (continued)

Choong-Wan Woo, Liane Schmidt, Anjali Krishnan, Marieke Jepma, Mathieu Roy, Martin Lindquist, Lauren Atlas, and Tor Wager (2016). "Quantifying cerebral contributions to pain beyond nociception", *Nature Communications*, in press.

Choong-Wan Woo, Luke Chang, Martin Lindquist, and Tor Wager (2016). "Building better biomarkers: Brain models in translational neuroimaging", *Nature Neuroscience*, 20 (3), 365-377.

Shaojie Chen, Kai Liu, Yuguang Yang, Yuting Xu, Seonjoo Lee, Martin Lindquist, Brian Caffo, and Joshua Vogelstein (2016). "An M-Estimator for Reduced-Rank System Identification", *Pattern Recognition Letters*, 86, 76-81

Maria Kudela, Jaroslaw Harezlak, and Martin Lindquist (2017). "Assessing Uncertainty in Dynamic Functional Connectivity", *NeuroImage*, 149, 165-177.

Shaojie Chen, Lei Huang, Huitong Qiu, Mary Beth Nebel, Stewart H. Mostofsky, James Pekar, Martin Lindquist, Ani Eloyan, and Brian Caffo (2017). "Parallel Group Independent Component Analysis for Massive fMRI Data Sets", *PLOS ONE*, 12 (3), e0173496.

Claudia Ammann, Martin Lindquist, and Pablo Celnik (2017). "Response Variability of Different Anodal Transcranial Direct Current Stimulation Intensities across Multiple Sessions", *Brain Stimulation*, in press.

Anders Eklund, Martin Lindquist, and Mattias Villani (2017). "A Bayesian Heteroscedastic GLM with Application to fMRI Data with Motion Spikes", *NeuroImage*, 155, 354-369.

Oliver Chen\*, Ciprian Crainiceanu, Elizabeth Ogburn, Brian Caffo, Tor Wager, and Martin Lindquist (2017). "High-dimensional Multivariate Mediation with Application to Neuroimaging Data", *Biostatistics*, in press.

Joshua Cheng, Rachael Bosma, Kasey Hemington, Aaron Kucyi, Martin Lindquist, and Karen Davis (2017). "Slow-5 dynamic functional connectivity reflects the capacity to sustain cognitive performance during pain", *NeuroImage*, in press.

Ann Choe, Mary Beth Nebel, Anita Barber, Jessica Cohen, Yuting Xu, James Pekar, Brian Caffo, Martin Lindquist (2017). "Comparing test-retest reliability of dynamic functional connectivity methods", *NeuroImage*, in press.

Atsushi Yoshimura, Carrie Goodson, Jordan Johns, Maxwell Towe, Esme Irvine, Nada Rendradjaja, Laura Max, Andrew LaFlam, Emily Ledford, Julia Probert, Zoë Tiegues, David Edwin, Alasdair MacLulich, Charles Hogue, Martin Lindquist, Ahmet Gurakar, Karin Neufeld, and Atsushi Kamiya (2017). "Altered cortical brain activity in end stage liver disease assessed by multi-channel near-infrared spectroscopy: Associations with delirium", *Scientific Reports*, 7 (1), 9258.

Anita Barber, Martin Lindquist, Pamela DeRosse, and Katherine Karlsgodt (2017). "Dynamic Functional Connectivity States Reflecting Psychotic-Like Experiences", *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, in press.

Maleeha Syed, Martin Lindquist, Jay Pillai, Shruti Agarwal, Sachin Gujar, Ann Choe, Brian Caffo, Haris Sair (2017). "Dynamic functional connectivity states between the dorsal and ventral sensorimotor networks revealed by Dynamic Conditional Correlation analysis of resting state functional MRI", *Brain Connectivity*, in press.

Journal Articles (continued)

Amanda Mejia\*, Mary Beth Nebel, Anita Barber, Ann Choe, James Pekar, Brian Caffo, Martin Lindquist (2018). “Improved estimation of subject-level functional connectivity using full and partial correlation with empirical Bayes shrinkage”, *NeuroImage*, in press.

Victor Solo, Jean-Baptiste Poline, Martin Lindquist, Sean Simpson, F. DuBois Bowman, Moo Chung, Ben Cassidy (2018). “Connectivity in fMRI: Blind Spots and Breakthroughs”, *IEEE Transactions on Medical Imaging*, in press.

Joshua Cheng, Anton Rogachov, Kasey Hemington, Aaron Kucyi, Rachael Bosma, Martin Lindquist, Robert Inman, Karen D Davis (2018). “Multivariate machine learning distinguishes cross-network dynamic functional connectivity patterns in state and trait neuropathic pain”, *PAIN*, in press.

Xi Zhu, Benjamin Suarez-Jimenez, Amit Lazarov, Liat Helpman, Santiago Papini, Ari Lowell, Ariel Durosky, Martin Lindquist, John Markowitz, Franklin Schneier, Tor Wager, Yuval Neria (2018). “Exposure-Based Therapy Changes Amygdala and Hippocampus Resting-State Functional Connectivity in Patients with PTSD”, *Depression and Anxiety*, in press.

## Books, Book Chapters and Encyclopedia Entries

Martin Lindquist and Tor Wager (2005). "Application of change-point theory to modeling state-related activity in fMRI". In Pat Cohen (Ed), *Applied Data Analytic Techniques for "Turning Points" Research*.

Tor Wager, Luis Hernandez, John Jonides and Martin Lindquist (2007). "Elements of Functional Neuroimaging" In John Cacioppo, Louis Tassinary and Gary Berntson (Eds), *The Handbook of Psychophysiology, 3<sup>rd</sup> Edition*. Cambridge University Press.

Tor Wager, Luis Hernandez and Martin Lindquist (2008). "Essentials of Functional Neuroimaging" In John Cacioppo and Gary Berntson (Eds), *The Handbook of Neuroscience for the Behavioral Sciences*. John Wiley and Sons.

Tor Wager and Martin Lindquist (2009). "Essentials of functional magnetic resonance imaging". *Handbook of Neuroscience for the Behavioral Sciences*, Wiley Online Library

Martin Lindquist (2015). Functional Magnetic Resonance Imagery, Analysis of. In: James D. Wright (editor-in-chief), *International Encyclopedia of the Social & Behavioral Sciences*, 2nd edition, Vol 9. Oxford: Elsevier. 525–531.

Martin Lindquist and Tor Wager (2015). "Meta-analyses in functional Neuroimaging", In: Arthur W. Toga, editor. *Brain Mapping: An Encyclopedic Reference*. Academic Press: Elsevier, pp. 661-665.

Martin Lindquist and Tor Wager (2015) "Principles of functional Magnetic Resonance Imaging", *Handbook of Neuroimaging Data Analysis*, London: Chapman & Hall.

Martin Lindquist and Michael Sobel (2015). "Effective Connectivity and Causal Inference in Neuroimaging", *Handbook of Neuroimaging Data Analysis*, London: Chapman & Hall.

Wesley Thompson, Hauke Bartsch and Michael Sobel (2015). "Structural Magnetic Resonance Imaging", *Handbook of Neuroimaging Data Analysis*, London: Chapman & Hall.

Tor Wager and Martin Lindquist (2015). "Principles of fMRI" *Leanpub*.

Stephan Geuter, Martin Lindquist, and Tor Wager (2016). "Fundamentals of Functional Neuroimaging", *Handbook of Psychophysiology*, to appear.

Hernando Ombao, Martin Lindquist, Wesley Thompson, and John Aston (2016). Editors "Handbook on Statistical Methods for NeuroImaging", *London: Chapman & Hall*.

Brian Caffo, Yi Zhao, Ani Eloyan, Zeyi Wang, Amanda Mejia, and Martin Lindquist (2018). "A survey of statistics in the neurological sciences with a focus on human neuroimaging", *John Wiley & Sons, Ltd*.

### Technical Reports & Dissertations

Martin Lindquist. "Non-Homogeneous Type II Counter Models for Neurotransmitter Releases". *Master's Thesis* January 1997.

Martin Lindquist (2001). "Fast Functional MRI using Two-Dimensional Prolate Spheroidal Wave Functions". *ProQuest Information and Learning Company*. Ann Arbor, MI.

Martin Lindquist. "Reconstruction of MR images using Non-uniformly Sampled Data and the Prolate Spheroidal Wave Function", Technical Report, 2004.

Larry Shepp, Cun-Hui Zhang and Martin Lindquist "Simple Ball-of-Yarn Spiral Sampling in 3-Dimensional K-Space", Technical Report, 2004.

Martin Lindquist. "A Note on Spatial Smoothing and Minimum K-space Sampling Requirements in fMRI", Technical Report, 2004.

### Peer -Reviewed Conference Papers/Abstracts

M. Lindquist, Q. X. Yang, C. H. Zhang, R. J. Demeure, M. B. Smith, and L. Shepp, "ROI Tailored k-Space Sampling and a 2D Prolate Spheroidal Wave Function Filter: Reduction of Spectral Contamination in Spectroscopic Imaging". *Proceedings of the 8th ISMRM Annual Meeting*, 2000.

Martin Lindquist. "Fast Functional Magnetic Resonance Imaging". *Proceedings of SPIE* Vol. 4478, p. 163-171, December 2001.

Martin Lindquist, Cun-Hui Zhang, Gary Glover, Lawrence Shepp and Qing Yang. "The Generalized 2D-PSWF Method for Tracking Dynamic Signal with High Temporal Resolution". *Proceedings of the 13th ISMRM Annual Meeting*. Miami, 2005.

Martin Lindquist and Tor Wager. "Modeling the Hemodynamic Response Function using Inverse Logit Functions". *Human Brain Mapping Annual Meeting*, 2005.

Martin Lindquist and Tor Wager. "Spatial Smoothing in fMRI using Prolate Spheroidal Wave Functions". *Human Brain Mapping Annual Meeting*, 2006.

Martin Lindquist and Tor Wager. "A novel approach to modeling state-related fMRI activity using change-point theory". *Human Brain Mapping Annual Meeting*, 2006.

Tor Wager, Christian Waugh, Martin Lindquist, Barbara Fredrickson, Douglas Noll, Stephen Taylor. "The role of ventromedial prefrontal cortex in anxiety and emotional resilience". *Human Brain Mapping Annual Meeting*, 2006.

Jack Grinband, Tor Wager, Martin Lindquist, Vince Ferrera and Joy Hirsch. "Modeling reaction times in event-related fMRI designs". *Human Brain Mapping Annual Meeting*, 2006.

William Ottowitz, Martin Lindquist, David Derro, Darin Dougherty, Alan Fischman and Janet Hall. "Lateralization of Amygdalar-Hippocampal Connectivity During Estrogen Infusion: Relevance to the Depressive Disorders". *Human Brain Mapping Annual Meeting*, 2006.

Peer -Reviewed Conference Papers/Abstracts (continued)

William Ottowitz, Martin Lindquist, David Derro, Darin Dougherty, Alan Fischman and Janet Hall. "Correlation of Suprathalamic Neural Network Activity with the Hypothalamus During Estrogen Infusion in Women: A PET Study Employing Path Analysis in Evaluation of the HPO Axis". *Endo* 2006.

Martin Lindquist, Cun-Hui Zhang, Gary Glover and Lawrence Shepp. "Rapid 3D fMRI using an Echo-Volumar Imaging Trajectory". *Proceedings of the 15th ISMRM Annual Meeting*, Berlin, 2007.

William Ottowitz, Darin Dougherty, Martin Lindquist, Alan Fischman, Janet Hall. "Cortisol Levels Covary with Anterior Cingulate Cortex rCMR During High Dose Estrogen: A PET Study". *Journal of Neuropsychiatry and Clinical Neurosciences*, 19(2), Spring 2007.

Ji-Meng Loh, Tor Wager, and Martin Lindquist. "Detecting Model Mis-specification in fMRI using Scan Statistics". *Human Brain Mapping Annual Meeting*, 2007.

Martin Lindquist, Cun-Hui Zhang, Gary Glover and Lawrence Shepp. "Rapid 3D fMRI of the Hemodynamic Response Function". *Human Brain Mapping Annual Meeting*, 2007.

Lauren Atlas, Matthew Davidson, Kate Dahl, Martin Lindquist and Tor Wager. "Tracing Pain Pathways from Stimulus to Report". *Cognitive Neuroscience Society*, 2008.

Matthew Davidson, Lauren Atlas, Martin Lindquist, Niall Bolger and Tor Wager. "The Multilevel Mediation/Moderation (M3) Framework: A Strategy for Pathway Analysis from fMRI Data". *Cognitive Neuroscience Society*, 2008.

Lucy Robinson\*, Tor Wager, and Martin Lindquist. "Estimating Distributions of Onset Times and Durations from Multi-subject fMRI Studies". *Human Brain Mapping Annual Meeting*, 2008.

Tor Wager, Lauren Atlas, Martin Lindquist, Kate Hard, Matthew Davidson. "Functional Pathway Discovery using Mediation Analysis: Approach and Application to Pain". *Human Brain Mapping Annual Meeting*, 2008.

William Ottowitz, Martin Lindquist, Darin Dougherty, Alan Fischman, Janet Hall. "Use of FDG-PET to Evaluate the Limbic-Pituitary-Adrenal Axis During Estrogen Challenge: A Preliminary Analysis". *Human Brain Mapping Annual Meeting*, 2008.

Lauren Atlas, Niall Bolger, Martin Lindquist and Tor Wager. "Neural mechanisms of expectancy-based pain modulation: Whole brain mediation analysis using fMRI". *Neuroscience*, 2008.

Lauren Atlas, Niall Bolger, Martin Lindquist and Tor Wager. "Multiple mediators of expectancy effects on pain perception: Interactions among higher-order brain regions and the pain matrix". *Cognitive Neuroscience Society*, 2009.

Martin Lindquist, Ragnheidur Haraldsdottir, Lauren Atlas and Tor Wager. "Modeling Brain Pathways using Functional Mediation Analysis". *Human Brain Mapping Annual Meeting*, 2009.

Martin Lindquist, Julie Spicer, Lauren Leotti, Iris Asllani, and Tor Wager. "Localizing areas with significant inter-individual variation: Testing Variance Components in a Multi-level GLM". *Human Brain Mapping Annual Meeting*, 2009.

Peer -Reviewed Conference Papers/Abstracts (continued)

Lauren Atlas, Niall Bolger, Martin Lindquist and Tor Wager. "Multiple Brain Pathways Mediate Expectancy Effects on Pain". *Human Brain Mapping Annual Meeting*, 2009.

Lucy Robinson\*, Tor Wager, Lauren Atlas, and Martin Lindquist (2009). "Spatial Clustering of Response Curves". *Neuroimage*, 47, S102.

Julie Spicer, Lauren Leotti, Iris Asllani, Ajna Borogovac, Martin Lindquist and Tor Wager. "Using Perfusion fMRI to Identify Brain Mechanisms of Social Evaluative Threat", *Human Brain Mapping Annual Meeting*, 2009.

Julie Spicer, Lauren Leotti, Iris Asllani, Ajna Borogovac, Martin Lindquist, Ed Smith and Tor Wager. "Individual differences in brain mechanisms of social evaluative threat". *Neuroscience*, 2009.

Lauren Atlas, Robert Whittington, Martin Lindquist, Nomita Sonty and Tor Wager. "Hidden vs open opioid administration: Belief modulates remifentanyl effects on pain-evoked responses". *Human Brain Mapping Annual Meeting*, 2010.

Wesley Thompson, Martin Lindquist, Greg Brown and FBIRN. "Functional ANOVA for fMRI, with application to the fBIRN East Coast Traveling Subjects Study". *Human Brain Mapping Annual Meeting*, 2010.

William Ottowitz, Martin Lindquist, Michael Gregory, Erika Nixon and Curt LaFrance. "fMRI Evaluation of Oral Administration of a High Stress Dose of Hydrocortisone". *Human Brain Mapping Annual Meeting*, 2010.

Ivor Cribben\*, Ragnheidur Haraldsdottir, Tor Wager and Martin Lindquist. "Determining state-related changes in brain connectivity". *Human Brain Mapping Annual Meeting*, 2011.

Yuval Neria, Margarita Bravova, Scott Schafer, Mohammed R Milad, Tor Wager, Martin Lindquist, Moe Zeidan, Maria Malaga, Maren Westphal, Page VanMeter, Mariana Neria, John Markowitz and Gregory Sullivan. "Neurocircuitry of Fear Extinction Learning and Memory in Posttraumatic Stress Disorder". *Association for Psychological Science*, 2011.

Yuval Neria, Mohammed Milad, Tor Wager, Margarita Bravova, Scott Schafer, Martin Lindquist, Maria Malaga Aragon, Mariana Neria, John Markowitz, Gregory Sullivan. "The Neurocircuitry of PTSD: An fMRI Study of Fear Extinction". *ISTSS Annual Meeting*, 2011.

Yuval Neria, Scott Schafer, Margarita Bravova, Mohammed Milad, Martin Lindquist, Maria Malaga, Mariana Neria, Myrna Weissman, John Markowitz, Tor Wager, Gregory Sullivan. "fMRI Study of Fear Acquisition and Extinction in Posttraumatic Stress Disorder", *ACNP*, 2011.

Yuval Neria, Scott Schafer, Margarita Bravova, Mohammed Milad, Martin Lindquist, Maria Malaga, Mariana Neria, Erel Shvil, John Markowitz, Tor Wager, Gregory Sullivan. "Effects of Prolonged Exposure Therapy on Extinction Recall and its Associated Neural Circuitry in PTSD", *SOBP Annual Meeting*, 2012.

Gillinder Bedi, Martin Lindquist, Margaret Haney (2013). "A Neural Signature of Decisions to Smoke Marijuana", *Biological Psychiatry*, 73 (9), 306S-306S.

Peer -Reviewed Conference Papers/Abstracts (continued)

Feng Xu, Suresh Joel, Craig Jones, Brian Caffo, Martin Lindquist, Ciprian Crainiceanu, Peter van Zijl, and James Pekar, "Empirical Bayesian Estimation Improves Analysis of Resting-State Functional Connectivity from Multi-Echo BOLD Data", *Proceedings of the 21st ISMRM Annual Meeting*, 2013.

Ivor Cribben\*, Lauren Atlas, Tor Wager, Martin Lindquist. "Detecting State Related Changes for Single-subject fMRI Data", *Human Brain Mapping Annual Meeting*, 2013.

Ivor Cribben\*, Lauren Atlas, Tor Wager, and Martin Lindquist (2013). "Detecting Functional Connectivity Change Points in fMRI Data", *Journal of Cognitive Neuroscience*, 202-202.

Schambra H, Xu J, Kim N, Lindquist M, Harran M, Berard J, Branscheidt M, Hertler B, Liuzzi G, Luft A, Krakauer J, and Celnik P. "Neurophysiological signatures of proximal and distal recovery after stroke", *Society for Neuroscience*, 2013.

Feng Xu, Joseph Gillen, Hongjun Liu, Ann Choe, Hua Jun, Craig Jones, Suresh Joel, Brian Caffo, Martin Lindquist, Ciprian Crainiceanu, Peter van Zijl, and James Pekar, "Bayesian shrinkage as an alternative to spatial smoothing for multi-echo BOLD fMRI", *Proceedings of the 22nd ISMRM Annual Meeting*, 2014.

Amanda Mejia\*, Mary Beth Nebel, Stewart Mostofsky, Brian Caffo, and Martin Lindquist, "Improving Reliability of Subject-Level Resting State Parcellation with Empirical Bayes". *Human Brain Mapping Annual Meeting*, 2014.

Ann Choe, Craig Jones, Suresh Joel, John Muschelli, Visar Belegu, John McDonald, Martin Lindquist, Brian Caffo, Peter C.M. van Zijl, and James Pekar. "Trends, seasonality, and persistence of resting-state fMRI over 185 weeks", *Proceedings of the 23rd ISMRM Annual Meeting*, 2015.

Anita Barber, Ann Choe, Jessica Cohen, Mary-Beth Nebel, Yuting Xu, and Martin Lindquist. "Evaluating the Reproducibility of Dynamic Connectivity in fMRI", International Symposium on Biomedical Imaging, 2015.

Shaojie Chen, Joshua Vogelstein, Seonjoo Lee, Martin Lindquist, and Brian Caffo. "Investigating functional connectivity using a sparse high dimensional state-space model". *Human Brain Mapping Annual Meeting*, 2015.

Jaroslav Harezlak, Maria Kudela, and Martin Lindquist. "Model-free estimation of time-varying functional connectivity and its uncertainty in fMRI Studies". *Human Brain Mapping Annual Meeting*, 2015.

Anita Barber, Christine Ladd-Acosta, Martin Lindquist, etc. "Genetic Variants Associated with Network Connectivity and Behavior". *Human Brain Mapping Annual Meeting*, 2015.

Choong-Wan Woo, Martin Lindquist, Lauren Atlas, Anjali Krishnan, Marieke Jepma, Mathieu Roy, Leonie Koban, Liane Schmidt, Luka Ruzic, and Tor Wager "Cerebral contributions to pain independent of nociceptive stimulus intensity". *Human Brain Mapping Annual Meeting*, 2015.

Amanda Mejia\*, Ani Eloyan, Mary Beth Nebel, Brian Caffo, and Martin Lindquist. "Robust Leverage-Weighted Principal and Independent Components Analysis". *Human Brain Mapping Annual Meeting*, 2015.

Jaroslav Harezlak, Maria Kudela, and Martin Lindquist. "Model-free estimation of time-varying functional connectivity with valid confidence intervals from fMRI data". *Human Brain Mapping Annual Meeting*, 2015.



Peer -Reviewed Conference Papers/Abstracts (continued)

Kyrana Tsapkini, Tushar Chakravarty, Yenny Webb-Vargas\*, Martin Lindquist, Constantine Frangakis and Argye Hillis. “Effects of different language and tDCS interventions in PPA and their neural correlates”. *Academy of Aphasia 53rd Annual Meeting*, 2015.

Amanda Mejia\*, Mary Beth Nebel, Anita Barber, Ann Choe, Martin Lindquist. “Scan Length, Shrinkage and Reliability of Resting-State Functional Connectivity in the HCP”. *Human Brain Mapping Annual Meeting*, 2016.

Anders Eklund, Martin Lindquist, Mattias Villani. “A Bayesian Heteroscedastic GLM for fMRI analysis”. *Human Brain Mapping Annual Meeting*, 2016.

Mary Beth Nebel, Yuting Xu, Ann Choe, Jessica Cohen, Anita Barber, Stewart Mostofsky, James Pekar, Brian Caffo, Martin Lindquist. “Sliding windows are suboptimal for tracking functional connectivity dynamics”. *Human Brain Mapping Annual Meeting*, 2016.

Anita Barber, Martin Lindquist, Katherine Karlsgodt. “Heritability of Dynamic and Static Connectivity in Resting State”. *Human Brain Mapping Annual Meeting*, 2016.

Amanda Mejia\*, Ryan Yue, Martin Lindquist, David Bolin. “A Bayesian General Linear Model for Cortical Surface fMRI Data Analysis”. *Human Brain Mapping Annual Meeting*, 2017.

Marianne Reddan, Martin Lindquist, Tor Wager. “Bias in Neuroimaging Effect Sizes”. *Human Brain Mapping Annual Meeting*, 2017.

Heather Shappell\*, Brian Caffo, Jim Pekar, Martin Lindquist. “Likelihood Based Dynamic Connectivity Analysis using Hidden Semi-Markov Models”. *Human Brain Mapping Annual Meeting*, 2018.

Ann Choe, Visar Belegu, Haris Sair, LM Chen, Martin Lindquist, Cristina Sadowsky, Jim Pekar. “Reliability of connectivity-based cortical parcellation in individuals with spinal cord injury”. *Human Brain Mapping Annual Meeting*, 2018.

## CURRICULUM VITAE

Martin A. Lindquist

### PART II

#### TEACHING

##### Classroom Instruction

At Johns Hopkins University:

- PH.140.850.001 – Statistical Methods for fMRI (Course developer)
- PH.140.682.001 – Principles and Methods of Functional Neuroimaging I (Course developer)
- PH.140.683.001 – Principles and Methods of Functional Neuroimaging II (Course developer)
- PH.140.751.001 – Advanced Methods in Biostatistics I
- PH.140.752.001 – Advanced Methods in Biostatistics II

At Columbia University:

- W1111 – Introduction to Statistics
- W2110 – Introduction to Applied Statistics (Course developer)
- W2024 – Applied Regression Analysis (Course developer)
- W4105 – Probability
- W4315 – Linear Regression Models
- W4437 – Time Series Analysis
- G6210D - Statistical Consulting
- G6600 - Teaching Statistics at the University Level
- G8335 - Statistical Methods for fMRI (Course developer)

At University of Minnesota:

- Math 3118 – Topics in Elementary Mathematics II

At Rutgers University:

- Statistics 390 - Introductory Computing for Statistics

Coursera (MOOC):

- Principles of fMRI
  - October 2015 – present, > 25,000 students
- The Statistical Analysis of fMRI Data
  - February 2014 – July 2015, > 55,000 students

##### Workshop & Conference Organization

Principles of Functional Neuroimaging

- Short course at ‘Neuro-Statistics: the interface between Neuroscience and Statistics’, Minneapolis, MN. May 2017.

Workshop on Statistical Methods for fMRI and EEG Data Analysis

- Eastern North American Region/International Biometric Society, Miami, FL, March 15 2015
- Principal Lecturer, with H. Ombao

### Workshop & Conference Organization (continued)

#### Workshop on Functional Magnetic Resonance Imaging

- University of Kansas. August 8-12, 2012
- Principal Lecturer, with T. Wager

#### Workshop on Developing Novel Statistical Methods in NeuroImaging

- University of California San Diego. July 24-26, 2012
- Lecturer, Co-Organizer of conference with 9 speakers and 25 registered attendees.

#### Conference on “Imaging, Communications and Finance: Stochastic Modeling of Real-world Problems”

- Columbia University. June 24-25, 2011
- Co-Organizer of conference with 17 speakers and 100 registered attendees.

#### Workshop on Brain "decoding": Classifying and predicting mental states from brain activity

- Columbia University. September 24, 2010
- Co-Organizer of workshop with 5 speakers and 120 registered attendees.

#### Workshop on Estimating Effects and Correlations in Neuroimaging Data

- Columbia University. July 15, 2009
- Co-Organizer of workshop with 4 speakers and 150 registered attendees.

#### Workshop on Time Series Analysis in Neuroscience

- Columbia University. April 14, 2009
- Co-Organizer of workshop with 7 speakers and 60 registered attendees.

#### Workshop on Functional Magnetic Resonance Imaging

- New York State Psychiatric Institute. June 3-5, 2008
- Principal Lecturer, with T. Wager

#### Advanced Statistical Methods for Functional MRI

- Merck, Rahway, NJ. November 9-10, 2005
- Organizer and sole lecturer for 2 day course (10 hours)

#### Reconnect Satellite Conference 2005: *Reconnecting Teaching Faculty to the Mathematical Sciences Enterprise* - The Mathematics of Medical Imaging

- Spelman College, Atlanta, GA. July 17-23, 2005
- Principal Lecturer, with L. Shepp

#### Statistical Methods for Functional MRI

- Merck, Rahway, NJ. April 18-20, 2005
- Organizer and sole lecturer for 3 day course (15 hours)

### Oral and Dissertation Committees

#### At Johns Hopkins University:

- Amanda Mejia (Principal Advisor, Currently at University of Indiana)
- Yuting Xu (Principal Advisor, Currently at Merck)
- Juemin Yang
- Yenny Webb Vargas (Co-advisor, Currently at Genentech)
- Lei Huang
- Shaojie Chen

Oral and Dissertation Committees (continued)

- Huitong Qiu
- Tianchen Qian
- Elizabeth Sweeney
- Kyle Rupp (Biomedical Engineering)
- Mike Powell (Biomedical Engineering)
- Doris Leung (Clinical Investigation)

At Columbia University:

- Lucy Robinson (Principal advisor, Currently at Drexel University)
- Ivor Cribben (Principal advisor, Currently at University of Alberta)
- Ragnheidur Haraldsdottir
- Hui Wang
- Daqing Zhang
- Philip Reiss (Biostatistics)
- Michael Shnaidman (Committee chair)
- Yu Liang
- Yu Zheng
- Yixin Fang
- Olivier Nimeskern (Committee chair)
- Yi-Hsuan Lee (Committee chair)
- Spiro Pantazatos (Physiology and Cellular Biophysics)
- Lauren Leotti (Psychology)
- Wei Xiong (Biostatistics)
- Shawn Simpson
- Chia-Hui Huang (Committee chair)
- Shouhao Zhou
- Qinghua Li (Committee chair)
- Kamiar Rahnema Rad
- Yongbum Cho
- Michelle Umali (Center for Neurobiology & Behavior)
- Hal Hinkle (Neuroscience)

MPH Capstone Advisor

- Bonnie Wong

## RESEARCH GRANT PARTICIPATION

### Grants in Progress

NIH –R01 Grant, *Causal Inference for Neuroimaging*, 2017-2021.

Role: Principal Investigator

NIH –R01 Grant, *Longitudinal Causal Inference for fMRI*, 2013-2017.

Role: Principal Investigator

NIH-R01 Grant, *Statistical Methods for Multilevel Multivariate Functional Studies*, P.I. Crainiceanu, 2012-2017.

Role: Co-investigator

NIH - R01 Grant, *Brain Mechanisms of the Placebo Response & Their Relation to Regulatory Processes*, P.I. Wager, 2013-2018. Role: Subcontract PI

NIH - R01 Grant, *Effects of TDCS on Spoken and Written Production in Primary Progressive Aphasia*, P.I. Tsapkini, 2015 –2020. Role: Co-Investigator

NIH - R01 Grant, *fMRI-based Biomarkers for Multiple Components of Pain*, P.I. Wager, 2013-2018.

Role: Subcontract PI

NIH – R25 Grant, *Big Data Education for the Masses: MOOCs, Modules and Intelligent Tutoring Systems*, P.I. Caffo, 2014-2017. Role: Co-Investigator

NIH – R01 Grant, *Neural Signature of Fear Overgeneralization In Trauma Exposed Adults*, P.I. Neira, 2015-2019.

Role: Subcontract PI

NIH – R01 Grant, *Novel strategies to enhance motor function after stroke*, P.I. Celnik, 2015-2019. Role: Co-Investigator

NIH – R01 Grant, *Development and Translation of D-glucose as a Diagnostic Agent for MRI of Cancer*, P.I. Van Zijl, 2015-2020. Role: Subcontract PI

### Grants Completed

Johns Hopkins Brain Science Institute, *The Center for Quantitative Neuroscience: a core for population neuroanalytics and translational systems neuroscience*, 2012-2014.

NIH - R01 Grant, *Brain Circuitry and Psychosocial Predictors of PTSD*, P.I. Lewis, 2010-2015.

Role: Co-investigator

NIH - R01 Grant, *Learning to avoid pain: Computational mechanisms and application to methamphetamine abuse*, P.I. Wager, 2009-2014. Role: Co-investigator

National Science Foundation, *Conference on 'Imaging, Communications and Finance: Stochastic Modeling of Real-world Problems'*, 2011. Role: Principle Investigator

NIH - RC1 Grant, *Neuroimaging-based biomarkers for two components of pain*, P.I. Wager, 2009-2010.

Role: Co-investigator

## Grants Completed (continued)

NIH - R21 Grant, *Brain pathways in social evaluative threat*, P.I. Wager 2009-2010.  
Role: Co-investigator

National Science Foundation, *Collaborative Research: Fast Functional MRI*, 2008-2011.  
Role: Principle Investigator

National Science Foundation, *Multilevel mediation techniques for fMRI*, P.I. Wager, 2007 – 2010.  
Role: Co-investigator

NIH/NCCAM - R01 Grant, *The neural bases of placebo effects and their relation to regulatory processes*, P.I. Wager 2006-2010. Role: Co-investigator

Gatsby Initiative in Brain Circuitry Pilot Project Grant (Consultant), *Neuroinformatics of expectancy in pain*, P.I. Wager, 2006-2007. Role: Consultant

NIH/NIMH - R24 Grant, *Cognition-Emotion-HPA Interaction: Translational Network*, P.I. Liberzon, 2005 – 2008.  
Role: Consultant

National Science Foundation, *Statistical Methods in Fast Functional MRI*, P.I. Shepp 2002 –2008.  
Role: Consultant

## **ACADEMIC SERVICE**

### Departmental Service

At Johns Hopkins University:

- Faculty Senate (2013-2014)
- Awards committee (2012-2017)
- Chair of awards committee (2017-present)
- Hiring committee (2012)
- Chair of hiring committee (2014-2016)
- PhD Mentoring:
  - Yuting Xu (2013-2017, Currently at Merck)
  - Amanda Mejia (2012-2016, Currently at University of Indiana)
  - Yenny Webb Vargas (2012-2015, Currently at Genentech)
- MSc Mentoring:
  - Oliver Chen (2014-2016, Currently at Yale University)
  - Guoqing Wang (2015-2017, Currently at JHU)

At Columbia University:

- Ran summer consulting program (2009-2011)
- Helped mentor undergraduate interns in statistics (2010)
- Undergraduate curriculum committee (2009-2010)
- PhD Core Committee (Applied Statistics) (2009-2010)
- Co-organizer of 2009-2010 Special Focus Series: “Statistical methods in Neuroscience”
- Committee in charge of “Applied Statistics” qualifying exam.
- Department Liaison to Summer Session (2008-2011)
- Curriculum committee (2008)
- Junior search committee (2007-2009, 2011)

- A variety of undergraduate curriculum committees – joint major, project webpage, textbook and course design (2004-2008).
- Designed courses "Introduction to Applied Statistics" (2005-2006), "Statistical Methods in functional MRI" (2004-2005) and Applied Regression Analysis (2009-2010)
- Organized departmental seminar (2003-2004)
- Departmental representative to QMSS program (2002-2004)
- Committee on PhD admissions (2003-2007, 2009)
- PhD Mentoring:
  - Lucy Robinson (2006-2009; Currently at Drexel University)
  - Ivor Cribben (2010-2012; Currently at University of Alberta)

At Rutgers University:

- Graduate student representative (2000-2001)

## **PRESENTATIONS**

Multi-Modal Imaging: Promises & Pitfalls

- Tutorial at Eastern North American Region/International Biometric Society, Atlanta, GA 2018

Dynamic Functional Connectivity – Pitfalls and Promises

- Department of Psychology, University of North Carolina, Chapel Hill, NC, January 2018.

Mediation Analysis in Neuroimaging

- Department of Psychology, University of North Carolina, Chapel Hill, NC, January 2018.

Principal Directions of Mediation

- CFE-ERCIM, London, UK, December 2017.
- Maryland Psychiatric Research Center, University of Maryland, February 2018.

Brain Signatures and Models in Translational Neuroimaging

- Department of Statistics, Indiana University, April 2018.
- Department of Biostatistics, MD Anderson, March 2018.
- Buehler-Martin Keynote Lecture, University of Minnesota, May 2017.
- Dean's Lecture, Johns Hopkins Bloomberg School of Public Health, April 2017.

Establishing Causal Relationships in Neuroimaging: Pitfalls and Promises

- Human Brain Mapping, Vancouver, Canada. June 2017.
- Human Brain Mapping, Geneva, Switzerland. June 2016.

Three Problems in Functional Neuroimaging

- Maryland Psychiatric Research Center, University of Maryland, May 2017.

Introduction to Functional Neuroimaging

- American Statistical Association Webinar, April 2017.

Exploring the Mind – using brain imaging and math to better understand how we think and feel

- Friends School Baltimore, April 2017

## Presentations (continued)

### High-dimensional Multivariate Mediation Analysis with an Application to Neuroimaging Data

- Department of Psychology, Wake Forest University. February 2018.
- Joint Statistical Meetings, Baltimore, MD. August 2017.
- Maryland Neuroimaging Retreat, Baltimore, MD. April 2017.
- Department of Biostatistics, University of Pittsburgh, March, 2017
- Department of Statistics, North Carolina State University, March, 2017
- Department of Statistics, Florida State University, December, 2016
- Biostatistics Branch, NCI, Bethesda, MD, November 2016
- Department of Statistics, Michigan State University, October, 2016
- Challenges and Advances on Big Data in Neuroimaging Conference, Cleveland, Oh. August 2016.
- Workshop on Novel Statistical Methods in Neuroscience, Magdeburg, Germany. June 2016.

### Evaluating the Dynamic Behavior of Functional Connectivity in fMRI

- ICSA, Shanghai, China, December 2016

### Improved Subject-level fMRI using Group-level Data

- Bioimaging Sciences: Magnetic Resonance Imaging, Yale University, October 2016

### Measuring Connectome Reliability & Replicability

- Brainhack, Vienna, Austria, September 2016

### Nonparametric Statistics in Neuroimaging - with applications to pain and beyond

- Department of Cognitive and Clinical Neuroscience Central Institute of Mental Health, Mannheim, Germany, September 2016

### Principles of Functional Neuroimaging

- Statistical Methods in Imaging Conference, Pittsburgh, PA 2017.
- Eastern North American Region/International Biometric Society, Washington, DC 2017
- Imaging Statistics Conference, University of Colorado Denver. June 2016.
- Big Data Training for Translational Omics Research Summer Workshop, West Lafayette, In. July 2016

### Discussion of “Power and Meta-Analysis in Neuroimaging: Contributing to Reproducible Science”

- Joint Statistical Meetings, Chicago, Il. August 2016.

### Multiple Comparisons, Selection Bias, and Data Dredging

- SFN Webinar in Best Practices in Post-Experimental Data Analysis, May 2016

### Evaluating the Reliability of Dynamic Connectivity in fMRI

- Joint Statistical Meetings, Chicago, Il. August 2016.
- The 3rd Biennial Whistler Scientific Workshop on Brain Functional Organization, Connectivity and Behavior, Whistler, Canada. March 2016.



## Presentations (continued)

### Dynamic Connectivity: Pitfalls and Promises

- CCNS: Challenges in Functional Connectivity Modeling and Analysis, Research Triangle Park, NC. April 2016.
- Workshop in Mathematical and Statistical Challenges in Neuroimaging Data Analysis, Banff, Canada. January 2016.

### Evaluating Dynamic Bivariate Correlations in Resting-state fMRI

- CFE-ERCIM, London, UK, December 2015.
- Human Brain Mapping, Honolulu, HI. June 2015.

### New Approaches towards High-dimensional Mediation

- Department of Statistics, University of Warwick. December 2015.
- Statistical Methods in Imaging Conference, Ann Arbor, MI, May 2015.

### Statistical Analysis of fMRI Data

- Prevention Science and Methodology Group (PSMG) Webinar. September 2015.

### An fMRI-Based Neurologic Signature for Physical Pain

- Department of Psychology, University of California Berkeley. September 2015.

### Principles of Functional Neuroimaging Data

- Opening Workshop for 'SAMSI Program on Neuroimaging Data Analysis', Research Triangle Park, NC. August 2015.

### Statistical Analysis of Neuroimaging Data

- Joint Statistical Meetings, Seattle, WA. August 2015.

### Discussant in session on Neurostatistics

- 60th World Statistics Congress – ISI2015, Rio De Janeiro, Brazil. July 2015

### The Statistical Analysis of fMRI Data

- Eastern North American Region/International Biometric Society, Webinar, June 2015.

### Causal inference in fMRI analysis – and beyond

- Educational course in Advanced fMRI, Human Brain Mapping, Honolulu, HI. June 2015.

### Exploration, Confirmation, Algorithm, and Model

- Educational course in Reproducible Neuroimaging, Human Brain Mapping, Honolulu, HI. June 2015.

### Evaluating the Reproducibility of Dynamic Connectivity in fMRI

- International Symposium on Biomedical Imaging, New York, NY. April 2015

### New Directions in fMRI Data Analysis

- Joint Statistical Meetings, Seattle, WA. August 2015.
- Eastern North American Region/International Biometric Society, Miami, FL 2015

## Presentations (continued)

### Evaluating Dynamic Correlations in fMRI

- NIH, April 2015
- Joint Statistical Meetings, Boston. August 2014.

### Recent Developments in Statistical Modeling of Brain Imaging Data

- International Biometrics Society, Florence, Italy, July 2014

### Modeling Change Points in fMRI: Activation and Dynamic Connectivity

- Educational course in Advanced fMRI, Human Brain Mapping, Hamburg, Germany. June 2014.

### From CT to fMRI: Larry Shepp's Impact on Medical Imaging

- 20th Applied Probability Day: In Honor/Memory of Larry Shepp, Columbia University, New York, NY, 2014.

### Functional Causal Mediation Analysis with an application to Brain Connectivity

- Department of Politics, Princeton University, Princeton, NJ, February 2015.
- Department of Biostatistics, Brown University, Providence, RI, October, 2014.
- Frontiers in Applied and Computational Mathematics, Newark, New Jersey, May 2014.
- Keynote speaker at 'Statistics Day at MUSC', Charleston, SC, September 2013.
- SRCOS, Montgomery Bell State Park, TN, June 2013.
- Department of Mathematics, DePaul University, Chicago, IL, May 2013.
- Department of Biostatistics, Vanderbilt University, Nashville, TN, April 2013.
- Department of Biostatistics, University of North Carolina, Chapel Hill, NC, February 2013.

### Developing fMRI-based Biomarkers for Pain

- Lieber Institute, Baltimore, MD, September 2014.
- CFE-ERCIM 2013, London, UK, December 2013.
- American Society of Neurorehabilitation, San Diego, November 2013.
- BRIC, University of North Carolina, Chapel Hill, NC, February 2013.
- Joint Statistical Meetings, San Diego. August 2012.
- ICSA Applied Statistics Symposium, Boston, MA 2012.
- Eastern North American Region/International Biometric Society, Washington, DC 2012

### Ignite Talk

- BrainHack 2013, Paris, France, October 2013.

### Functional Data Analysis for fMRI

- Joint Statistical Meetings, Montreal, Canada. August 2013.
- Eastern North American Region/International Biometric Society, Orlando, FL 2013

### Efficient Modeling of fMRI Data Avoiding Misspecification, Bias and Power Loss

- Educational course in How Not to Analyze Your Data: A Skeptical Introduction to Modeling Methods, Human Brain Mapping, Beijing, China. June 2012.

## Presentations (continued)

### Brain Connectivity and Causal Inference

- SAMSI, Neuroimaging Data Analysis Workshop, June 2013
- Keynote speaker at Workshop on Machine Learning and Interpretation in NeuroImaging, Lake Tahoe, NV. December 2012.
- Eastern North American Region/International Biometric Society, Miami, Fl 2011

### Discussant - Statistical Issues in Modeling fMRI Data

- Joint Statistical Meetings, San Diego. August 2012.

### The Statistical Analysis of Ultra Fast fMRI Data

- Educational course in Advanced fMRI, Human Brain Mapping, Beijing, China. June 2012.

### Functional Connectivity, Effective Connectivity and Causality

- Educational course in Advanced fMRI, Human Brain Mapping, Beijing, China. June 2012.

### Connectivity and Causality in Brain Imaging

- Joint Statistical Meetings, Miami. August 2011.

### Multiple Comparisons in fMRI

- The UCLA Advanced Neuroimaging Summer program, July 2011

### The Network of Network Methods, and a Case Study of SEM

- Human Brain Mapping, Quebec City, Canada. June 2011.

### Statistical Approaches for Studying Causality

- Educational course in Advanced fMRI, Human Brain Mapping, Quebec City. June 2011.

### Functional Data Analysis, Causal Inference and Brain Connectivity

- Department of Statistical Science, Duke University, Durham NC. September 2012
- Department of Statistics, Linköpings Universitet, Linköping, Sweden. May 2012.
- Department of Statistics, University of Virginia, Charlottesville, VA. February 2012.
- Department of Statistical Science, Cornell University, Ithaca, NY. April 2011.
- Department of Biostatistics, Emory University, Atlanta, GA. January 2011.
- Department of Biostatistics, Johns Hopkins University, Baltimore, MD. October 2010.

### Tutorial in Image Analysis

- Opening Workshop for 'SAMSI Program on Analysis of Object Data', Research Triangle Park, NC. September 2010.

### The statistical analysis of pharmacological fMRI data - with an application to a study of expectancy-based enhancement of opioid analgesia

- Joint Statistical Meetings, Vancouver, Canada. August 2010.

## Presentations (continued)

### Bayesian Analysis in fMRI

- The UCLA Advanced Neuroimaging Summer program, July 2016
- The UCLA Advanced Neuroimaging Summer program, July 2015
- The UCLA Advanced Neuroimaging Summer program, July 2014
- The UCLA Advanced Neuroimaging Summer program, July 2013
- The UCLA Advanced Neuroimaging Summer program, July 2012
- The UCLA Advanced Neuroimaging Summer program, July 2011
- The UCLA Advanced Neuroimaging Summer program, July 2010

### Non-parametric Analysis in fMRI

- The UCLA Advanced Neuroimaging Summer program, July 2016
- The UCLA Advanced Neuroimaging Summer program, July 2015
- The UCLA Advanced Neuroimaging Summer program, July 2014
- The UCLA Advanced Neuroimaging Summer program, July 2013
- The UCLA Advanced Neuroimaging Summer program, July 2012
- The UCLA Advanced Neuroimaging Summer program, July 2011
- The UCLA Advanced Neuroimaging Summer program, July 2010

### Functional Data Analysis, Causal Inference and Brain Connectivity

- International Conference on Statistics and Society, Beijing, China. July 2010.
- Keynote speaker at the Network of Greater Georgia Institutes of Neuroimaging and Statistics, University of Georgia, Athens, GA. April 2010.

### Modeling Neuroimaging Data – avoiding misspecification, bias and power loss

- Human Brain Mapping, Barcelona, Spain. June 2010.

### Hierarchical linear modeling of fMRI activity

- Educational course in Advanced fMRI, Human Brain Mapping, Barcelona, Spain. June 2010.

### Analyzing High Temporal Resolution fMRI data

- Columbia-Techion Workshop on Neuroengineering of Biological Networks, New York, NY. March 2010.
- Department of Biostatistics, Brown University, Providence, RI, February 2010.
- School of Mathematical and Statistical Sciences, Arizona State University, Tempe, AZ. December 2009.
- Neuroimaging Analysis Methods Group, Princeton University, Princeton, NJ. October 2009.
- Computational Biology Center, IBM T.J. Watson Research Center, Yorktown Heights, NY. September 2009.
- Cognitive Neuroscience Division, Columbia University Medical Center, New York, NY. November 2008.
- Eastern North American Region/International Biometric Society, Arlington, Virginia 2008
- Department of Biostatistics, Johns Hopkins University, Baltimore, MD. September 2008.

### Modeling Brain Pathways Using Functional Path Analysis

- Joint Statistical Meeting, Washington DC. August 2009.

## Presentations (continued)

Multilevel modeling of BOLD activity for functional studies

- Educational course in Advanced fMRI, Human Brain Mapping, San Francisco, CA. June 2009.

Analyzing fMRI data with unknown brain activation profiles

- Eastern North American Region/International Biometric Society, San Antonio Texas 2009

Modeling fMRI data with uncertain hemodynamic response or stimulus functions

- Summer School: Mathematics in Brain Imaging, Institute for Pure & Applied Mathematics, UCLA, Los Angeles, CA, July 2008

Multilevel Linear Modeling: Within-and Between-Subjects Modeling of fMRI Time Series

- Educational course in Advanced fMRI, Human Brain Mapping, Melbourne, Australia. June 2008.

Understanding fMRI Data: From Acquisition to Analysis

- Child Psychiatry Fellowship Seminar, Columbia University, New York, NY. September 2008.

Logistic Regression with fMRI Time Series Predictors

- Joint Statistical Meeting, Denver, WA. August 2008.

Analyzing fMRI Data with Unknown Brain Activation Profiles

- Division of Biostatistics, New York State Psychiatric Institute, New York, NY. March 2009
- Merck, Rahway, NJ. June 2008.

Efficient Modeling of fMRI Data -Basis Sets & Model Diagnostics

- Merck, Rahway, NJ. June 2008.

Estimating distributions of onset times and durations from multi-subject fMRI studies

- Human Brain Mapping, Melbourne, Australia. June 2008.

The Acquisition and Statistical Analysis of High Temporal Resolution 3D fMRI Data

- Joint Statistical Meeting, Salt Lake City, Utah. August 2007.
- Neuroscience Research Institute (NRI), Gachon University of Medicine and Science, Incheon, Korea. August 2007.

Rapid 3D functional MRI

- fMRI Research Center, Columbia University, New York, NY. March 2007.
- New York Psychiatric Institute, Columbia University, New York, NY. November 2006.
- Merck, Rahway, NJ. November 2006.

Modeling State-Related fMRI Activity using Change-point Theory

- Merck, Rahway, NJ. November 2006.
- Joint Statistical Meeting, Seattle, WA. August 2006.

Rapid 3D fMRI of the Hemodynamic Response Function

- Department of Psychology, Columbia University, NY, NY. October 2006

## Presentations (continued)

### Negative Dip Imaging in Bold fMRI

- Department of Statistics, Rutgers University, New Brunswick, NJ. May 2006.

### Real-Time functional MRI

- Department of Statistics, Syracuse University, Syracuse, NY. October 2005.

### Statistical Methods for Fast Functional MRI

- Department of Mathematics and Statistics, Boston University, Boston, MA. April 2004
- New York State Psychiatric Institute, Columbia University, New York, NY. February 2004

### Mathematical and Statistical Problems Relating to fMRI

- Department of Statistics, University of Michigan, Ann Arbor, MI. February 2002.
- Department of Statistics, Columbia University, New York, NY. February 2002.
- Department of Statistics, University of Minnesota, Minneapolis, MN. February 2002.
- Department of Statistics, Purdue University, Lafayette, IN. January 2002.

### Two Statistical Applications Yielding Basic Insights into Math (*Jointly presented with L. Shepp*)

- Department of Statistics, Stanford University, Palo Alto, CA. July 2001.

### Fast Functional MRI Using Two-Dimensional Prolate Spheroidal Wavefunctions

- Center for Magnetic Resonance Research, University of Minnesota, Minneapolis, MN. June 2001.
- Brain Program, Brown University, Providence, RI. June 2001. A Super-Fast Negative Dip is Needed for Higher Cognition (Jointly presented with L. Shepp) Department of Radiology, Stanford University, Palo Alto, CA. August 2000.

### From Emission Tomography to fMRI (Jointly presented with L. Shepp)

- Department of Statistics, Stanford University, Palo Alto, CA. July 2000.

### Non-Homogenous Type II Counter Models for the Release of Neurotransmitters

- Department of Statistics, Royal Institute of Technology, Stockholm, Sweden. February 1997

## **ADDITIONAL INFORMATION**

- Married, two children
- Swedish and U.S. citizenship
- Languages: Native Swedish and English. Basic French