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Experience

- Fall 2002 - Present 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*
- 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.

Education

- 2001 PhD, Department of Statistics, *Rutgers University, New Brunswick, N.J.*
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*

Papers

Martin Lindquist and Tor Wager. "Spatial Smoothing in fMRI using Prolate Spheroidal Wave Functions". In submission, 2006.

Martin Lindquist and Tor Wager. "Modeling state-related fMRI activity using change-point theory". In submission, 2006.

Martin Lindquist, Cun-Hui Zhang, Gary Glover and Lawrence Shepp. "Rapid Three-Dimensional Functional Magnetic Resonance Imaging of the Negative BOLD Response". In submission, 2006.

Martin Lindquist and Tor Wager. "Validity and Power in Hemodynamic Response Modeling: A comparison study and a new approach". *Human Brain Mapping*, In press, 2006.

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

Tor Wager, Luis Hernandez, John Jonides and Martin Lindquist. "Elements of Functional Neuroimaging" In John Cacioppo and R.J. Davidson (Eds), *The Handbook of Psychophysiology*, 4th Edition. Cambridge University Press, In press, 2005.

Martin Lindquist, Cun-Hui Zhang, Gary Glover, Lawrence Shepp and Qing Yang. "A Generalization of the Two Dimensional Prolate Spheroidal Wave Function Method for Non-Rectilinear MRI Data Acquisition Methods". *IEEE Transactions in Image Processing* In press, 2005.

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

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

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

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

Technical Reports

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

L.A. Shepp, C.H. Zhang and M.A. Lindquist "Simple Ball-of-Yarn Spiral Sampling in 3-Dimensional K-Space", Technical Report, 2004.

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

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

Peer-Reviewed Conference Papers

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.

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

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

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*, Denver, p. 1842, 2000.

Presentations

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 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.

Invited Conference Presentations

Negative Dip Imaging in Bold fMRI (*Jointly presented with Cun-Hui Zhang and Larry Shepp*)

- Advances in High Resolution PET & Ultra High Field MRI – Toward In Vivo Functional Molecular Imaging, Seoul, South Korea. April 2006

What Can We Learn from Statistics Departments Who Prepare Graduate Students to Teach Statistics?

- First United States Conference on Teaching Statistics, Ohio State University, Columbus, Ohio. May 2005. (*Panelist*)

Mathematical and Statistical Problems Relating to Functional MRI

- Sixth North American New Researchers Conference, University of California, Davis. July 2003.

Fast Functional Magnetic Resonance Imaging (*Jointly presented with L. Shepp*)

- International Symposium on Optical Science and Technology, San Diego, CA. July 2001.

Fast Functional Magnetic Resonance Imaging via Wavelets (*Jointly presented with L. Shepp*)

- Symposium on Inference for Stochastic Processes, Athens, GA. May 2000.

Workshop Presentations

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)

Academic Awards

2001	Conference Travel Award <i>Rutgers University; The Graduate School New Brunswick</i>
2000	Travel Stipend for Visiting Scholar position <i>Rutgers University; The Graduate School New Brunswick</i>
1997-1999	Excellence Fellowship for Graduate Studies in Statistics <i>Rutgers University; The Graduate School New Brunswick</i>
1996	Travel Stipend for Study Abroad <i>Royal Institute of Technology (KTH); Stockholm, Sweden</i>

Referee

- Journal of the American Statistical Association
- International Journal of Imaging Systems and Technology
- IEEE Transactions on Medical Imaging
- National Science Foundation – Division of Mathematical Sciences

Oral and Dissertation Committees

- Hui Wang
- Daqing Zhang
- Philip Reiss (Biostatistics)
- Michael Shnaidman (Committee chair)
- Yu Liang
- Yu Zheng
- Yixin Fang
- Olivier Nimeskern

Professional Memberships

- American Statistical Association
- International Society for Magnetic Resonance in Medicine
- Organization for Human Brain Mapping

Additional Information

Swedish citizenship
Permanent U.S. Resident.
Languages: Native Swedish and English. Basic French