

## Christopher R. Genovese

Department of Statistics  
Carnegie Mellon University  
Pittsburgh, PA 15213

Office: (412) 268-7836  
Fax: (412) 268-7828  
Email: [genovese@cmu.edu](mailto:genovese@cmu.edu)

Home Page: <http://www.stat.cmu.edu/~genovese/>

### Academic Appointments

2005– Professor of Statistics, Carnegie Mellon University  
2002–2005 Associate Professor of Statistics (with tenure), Carnegie Mellon University  
1999–2002 Associate Professor of Statistics, Carnegie Mellon University  
1994–1999 Assistant Professor of Statistics, Carnegie Mellon University

### Education

Ph.D. Statistics, University of California, Berkeley, 1994  
M.A. Statistics, University of California, Berkeley, 1991  
B.S.E. Operations Research, Princeton University, 1989  
Graduated *Summa Cum Laude*

### Academic Honors

2006 Fellow of the Institute of Mathematical Statistics  
2005 ASA Outstanding Statistical Application Award  
2000 JASA Applications and Case Studies Invited Paper for 2000  
1999 CAREER Award, National Science Foundation  
1997 Shannon Award, National Institutes of Health  
1993 Provost's Research Fund Award, University of California, Berkeley  
1990-1993 National Defense Science & Engineering Graduate Research Fellowship  
1990 National Science Foundation Graduate Research Fellowship (declined)  
1990 Newhouse Foundation Grant, University of California, Berkeley  
1989 Inducted into *Phi Beta Kappa*, *Tau Beta Pi*, and *Sigma Xi*  
1989 John W. Tukey Award for Outstanding Student in Statistics,  
American Statistical Association (NJ Chapter)  
1989 W. Mack Angus Prize, Princeton University,  
Top honor in Civil Engineering and Operations Research

### Refereed Publications

Merriam, E.P., Genovese, C.R., and Colby, C.L. (2006). Remapping in Human Visual Cortex, *J. Neurophysiology*, to appear. [Featured in the Editorial focus for the issue.]  
Perone Pacifico, M., Genovese, C. R., Verdinelli, I., and Wasserman, L. (2006). Scan Clustering: A False Discovery Approach, *J. Multivariate Analysis*, to appear.

- Genovese, C. R. and Wasserman, L. (2006). Exceedance Control for the False Discovery Proportion, *Annals of Statistics*, **101**, No. 476, 1408–1417.
- Genovese, C. R., Roeder, K., and Wasserman, L. (2006). False Discovery Control with P-value Weighting *Biometrika*, **93**(3), 509–524.
- Freeman, P. .E., Genovese, C. R., Miller, C. .J., Nichol, R. C., and Wasserman, L. (2006). Examining the Effect of Map-Making Algorithm on Observed Power Asymmetry in WMAP data, *Astrophysical Journal*, **638**, 1–19.
- Genovese, C. R. and Wasserman, L. (2005). Confidence Sets for Nonparametric Wavelet Regression, *Ann. of Statist.*, *Ann. Statist.* **33**, 698–729
- Bryan, B., Schneider, J., Nichol, R.C., Miller, C.J., Genovese, C.R., and Wasserman, L. (2005). Active Learning For Identifying Function Threshold Boundaries, NIPS Conference Proceedings.
- Genovese, C. R., Miller, C.J., Nichol, R.C., Arjunwadkar, M., and Wasserman, L. (2004). Nonparametric Inference for the Cosmic Microwave Background, *Statistical Science*, **19**, 308–321. [Winner of the American Statistical Association Outstanding Statistical Application Award for 2005.]
- Genovese, C.R. and Wasserman, L. (2004a). A Stochastic Process Approach to False Discovery Control, to appear *Annals of Statistics*.
- Perone Pacifico, M., Genovese, C. R., Verdinelli, I., and Wasserman, L. (2004). False Discover Control for Random Fields, *Journal of the American Statistical Association*, **99**, 1002–1014.
- Merriam, E.P., Genovese, C.R., and Colby, C.L. (2003). Spatial Updating in Human Parietal Cortex, *Neuron*, **39**, 361–373
- Genovese, C. R. and Wasserman, L. (2002). Operating Characteristics and Extensions of the False Discovery Rate Procedure, *J. Royal Statist. Soc. B*, **64**, 499–518.
- Miller, C. J., Wasserman, L., Genovese, C. R., and Nichol, R. (2002). A Non-parametric Regression Analysis of the CMB Power Spectrum, *Astrophysical Journal*, **565L**, 67.
- Small, S., Hlustik, P., Noll, D., Genovese, C., and Solodkin, A. (2002). Cerebellar hemispheric activation ipsilateral to the paretic hand correlates with functional recovery after stroke, *Brain* **125**, 1554–1557.
- Genovese, C.R., Lazar, N.A. and Nichols, T.E. (2002). Thresholding of statistical maps in functional neuroimaging using the false discovery rate. *NeuroImage*, **15**, 870–878.
- Hopkins, A. M., Miller, C. J., Connolly, A. J., Genovese, C. R., Nichol, R.C., and Wasserman, L. (2002). A new source detection algorithm using the False Discovery Rate, *Astronomical Journal*, **123**, 1086–1094.
- Miller, C. J., Genovese, C. R., Wasserman, L., Nichol, R. C., Connolly, A., Hopkins, A., Moore, A., and Schneider, J. (2001). Controlling the False Discovery Rate in Astrophysical Data Analysis, *Astronomical Journal*, **122**, 3492–3505.

- DiMatteo, I., Genovese, C. R., and Kass, R. E. (2001). Bayesian curve-fitting with free-knot splines, *Biometrika*, **88**, 1055–1071.
- Connolly, A. J., Nichol, A. J., Moore, A. W., Schneider, J., Genovese, C. R., and Wasserman, L. (in press). Fast Algorithms and Efficient Statistics: Density Estimation in Large Astronomical Datasets, *Astronomical Journal*.
- Chan, N. H. and Genovese, C. R. (2001). A Comparison of Linear and Nonlinear Statistical Techniques in Performance Attribution, *IEEE Transactions on Neural Networks*, special issue on Neural Networks in Financial Engineering, **12**, 922–928.
- Marotta, J.J., Genovese, C.R., and Behrmann, M. (2001). A functional MRI study of face recognition in patients with prosopagnosia. *Neuroreport*, 12(8), 1581-1587.
- Lazar, N. A., Eddy, W. F., Genovese, C. R. and Welling, J. (2001). Statistical Issues in fMRI for Brain Imaging, *International Statistical Review*, 69, 105–127.
- Luna, B., Thulborn, K. R., Munoz, D. P., Merriam, E. P., Garver, K. E., Minshew, N. J., Keshavan, M. S., Genovese, C. R., Eddy, W. F., and Sweeney, J. A. (2001). Maturation of widely distributed brain function subserves cognitive development. *Neuroimage*, 13(5), 786-793.
- Genovese, C. R. (2000). A Bayesian Time-Course Model for Functional Magnetic Resonance Imaging Data (with discussion), *Journal of the American Statistical Association*, 95, 691–703. [Selected as the JASA Applications and Case Studies Invited Paper for 2000.]
- Genovese, C. R. and Wasserman, L. (2000). Rates of Convergence for the Gaussian Mixture Sieve, *Annals of Statistics*, 28, 1105–1127.
- Goddard, N. H., Hood, G., Cohen, J. D., Nystrom, L. E., Eddy, W. F., Genovese, C. R., and Noll, D. C. (2000). Functional Magnetic Resonance Imaging Dataset Analysis, in *Industrial Strength Parallel Computing*, ed. A. Koniges, Morgan Kaufman Publishers, New York, 431–451.
- Genovese, C. R. and Sweeney, J. A. (1999). Functional Connectivity in the Cortical Regions Subserving Eye Movements (with discussion), in *Case Studies in Bayesian Statistics*, Volume 4, eds. R. E. Kass, B. P. Carlin, A. L. Carriquiry, C. Gatsonis, A. Gelman, I. Verdinelli, and M. West, Springer Verlag, pp. 59–132.
- Genovese, C. R. (1999). Functional Magnetic Resonance Imaging and Spatio-temporal Inference (with discussion), in *Bayesian Statistics 6*, eds. J. M. Bernardo, J. O. Berger, A. P. Dawid and A. F. M. Smith, Oxford University Press, 255–274
- Diggs, B., Genovese, C. R., Kadane, J. B., and Swendsen, R. H. (1999). Bayesian Analysis of Series Expansions, *Computer Physics Communications*, 121-122, 1–4.
- Eddy, W. F., Fitzgerald, M., Genovese, C. R., Lazar, N., Mockus, A., and Welling, J. (1999). The Challenge of Functional Magnetic Resonance Imaging, *Journal of Computational and Graphical Statistics*, 8, 545–558.
- Swendsen, R. H., Diggs, B., Wang J-S., Li, S-T., Genovese, C. R., and Kadane, J. B. (1999). Transition Matrix Monte Carlo, *International Journal of Modern Physics, C*, 10, 1563–1569.

- Weingart, L. R., Prietula, M. J., Hyder, E. B., and Genovese, C. R. (1999). Knowledge and the sequential processes of negotiation: A Markov-chain analysis of response-in-kind, *Journal of Experimental Social Psychology*, 35, 366-393.
- Noll, D. C., Genovese, C. R., Vazquez, A. L., O'Brien, J., and Eddy, W. F. (1998). Evaluation of Respiration Artifact Correction Techniques in Multishot Spiral Functional MRI Using Receiver Operator Characteristic Analyses, *Magnetic Resonance in Medicine*, 40, 633-639.
- Luna, B., Thulborn, K. R., Stojwas, M. H., McCurtain, B. J., Berman, R. A., Genovese, C. R., and Sweeney, J. A. (1998). Dorsal Cortical Regions Subserving Visually Guided Saccades in Humans: An fMRI Study, *Cerebral Cortex*, 8, 40-47.
- Genovese, C. R., Noll, D. C. and Eddy, W. F. (1997). Estimating Test-Retest Reliability in fMRI I: Statistical Methodology, *Magnetic Resonance in Medicine*, 38, 497-507.
- Noll, D. C., Genovese, C. R., Nystrom, L., Forman, S., Eddy, W. F., and Cohen, J. (1997). Estimating Test-Retest Reliability in fMRI II: Application to Sensory-Motor and Cognitive Activation, *Magnetic Resonance in Medicine*, 38, 508-517.
- Goddard, N. H., Hood, G., Cohen, J. D., Eddy, W. F., Genovese, C. R., Noll, D. C., and Nystrom, L. E. (1997). Online Analysis of Functional MRI Datasets on Parallel Platforms, in *Journal of Supercomputing*, 11, 295-318.
- Genovese, C. R. and Stark, P. B. (1996). Data Reduction and Statistical Inconsistency in Linear Inverse Problems, *Physics of the Earth and Planetary Interiors*, 98, pp. 143-162.
- Sweeney, J. A., Genovese, C. R., Luna, B., McCurtain, B. J., and Thulborn, K. R. (1996). Network Function in Cortical Circuits: Coherence Analysis of Oculomotor Circuitry with fMRI, *NeuroImage*, 3 (3), S100.
- Thompson, M. J., Toomre, J., Anderson, E. R., Antia, H. M., Berthomieu, G., Burtonclay, D., Chitre, S. M., Christensen-Dalsgaard, J., Corbard, T., DeRosa, M., Genovese, C. R., Gough, D. O., Haber, D. A., Harvey, J. W., Hill, F., Howe, R., Korzennik, S. G., Kosovichev, A. G., Leibacher, J. W., Pijpers, F. P., Provost, J., Rhodes Jr., E. J., Schou, J., Sekii, T., Stark, P. B., and Wilson, P. R., (1996). Differential Rotation and Dynamics of the Solar Interior, *Science*, 272, 1300-1305.
- Genovese, C. R., Stark, P. B., and Thompson, M. J. (1995). Uncertainties for Two Dimensional Models of Solar Rotation from Helioseismic Eigenfrequency Splitting, *Astrophysical Journal*, 443, 843-854.

## Other Publications

- Merriam, E.P., Genovese, C.R., Lassoende, M., and Colby, C.L. (2006). Spatial updating in a subject with a complete commissurotomy. Proceedings of the Annual meeting of the Society for Neuroscience, Atlanta, GA.
- Merriam, E.P., Genovese, C.R., Lassoende, M., and Colby, C.L. (2006). Spatial updating in the absence of the corpus callosum. Proceedings: Cognitive Neurosciences. New York, NY.

- Merriam, E.P., Genovese, C.R., and Colby, C.L. (2004a). Modulation of visual activity in striate, extrastriate, and parietal cortex. Annual meeting of the Society for Neuroscience, San Diego, CA.
- Merriam, E.P., Genovese, C.R., and Colby, C.L. (2004c). Dynamic receptive fields in human visual cortex. Science2004: No Boundaries, University of Pittsburgh.
- Moore, A., Connolly, A. J., Genovese, C. R., Gray, A., Grone, L., Kanidoris, N., Nichol, R. C., Schneider, J., Szalay, A., Szapudi, I., and Wasserman, L. (2001). Fast Algorithms and Efficient Statistics: N-point Correlation Functions, in *Proceedings of the MPA/ MPE/ ESO Conference "Mining the Sky,"* Garching, Germany.
- Genovese, C. R., Wasserman, L., Nichol, R. C., Connolly, A. J., Schneider, J., and Moore, A. (2001). Nonparametric Density Estimation: A Brief and Selective Review, in *Virtual Observatories of the Future*, eds. R. J. Brunner, S. G. Djorgovski, and A. S. Szalay, 279–283.
- Nichol, R. C., Connolly, A. J., Moore, A., Schneider, J., Genovese, C. R. and Wasserman, L. (2001). Computational AstroStatistics: Fast Algorithms and Efficient Statistics for Density Estimation in Large Astronomical Datasets, in *Virtual Observatories of the Future*, eds. R. J. Brunner, S. G. Djorgovski, and A. S. Szalay, 265–271.
- Genovese, C. R. (1999). Wavelets, *Encyclopedia of Statistical Sciences*, Update Volume 3, eds. Kotz, S. and Johnson, N., Wiley & Sons, Inc, New York.
- Genovese, C. R. (1997). Statistical Inference in Functional Magnetic Resonance Imaging, Technical Report 674, Carnegie Mellon Department of Statistics.
- Kadane, J. B., Diggs, B., Genovese, C. R., Li, S. and Swendsen, R. (1997). Markov Chain Monte Carlo Methods for Bayesian Analysis, in *Monte Carlo Simulations in Oceanography*, Proceedings of the Hawaiian Winter Workshop, eds. P. Müller and D. Henderson, 41–44.
- Kadane, J. B., Diggs, B., Genovese, C. R., Li, S. and Swendsen, R. (1997). A Tale of Two Chains: Experiences from a Collaboration Between Statisticians and Physicists, in *Monte Carlo Simulations in Oceanography*, Proceedings of the Hawaiian Winter Workshop, eds. P. Müller and D. Henderson, 45–48.
- Genovese, C. R., Noll, D. C., and Eddy, W. F. (1996). Statistical Estimation of Test-Retest Reliability in fMRI, *Proceedings of the Fourth Annual Meeting of the International Society of Magnetic Resonance*.
- Eddy, W. F., Fitzgerald, M., Genovese, C. R., Mockus, A., and Noll, D. C. (1996). Functional Imaging Analysis Software — Computational Olio, in *Proceedings in Computational Statistics*, ed. A. Prat, Physica-Verlag, Heidelberg.
- Noll, D. C., Genovese, C. R., Vazquez, A. L., and Eddy, W. F. (1996). Evaluation of Respiratory Artifact Correction Techniques in fMRI using ROC Analyses, *Proceedings of the Fourth Annual Meeting of the International Society of Magnetic Resonance*.
- Sweeney J. A., Luna B., Berman R. A., McCurtain B. J., Strojwas M. H., Voyvodic J. T., Genovese, C. R., and Thulborn K. R. (1996). FMRI studies of spatial working memory. Meeting of the Society for Neuroscience, Washington D. C., #664.6.

- Genovese, C. R. (1995). Why Functional MRI Needs Statistics: Questions, Models, and Inferences, *Proceedings of the 27th Symposium on the Interface*, eds. M. M. Meyer and J. L. Rosenberger, 187–191.
- Sekii, T., Genovese, C. R., Gough, D. O., and Stark, P. B. (1995). Observational Constraints on the Internal Solar Angular Velocity, *Proceedings of the Fourth SOHO Workshop: Helioseismology*.
- Genovese, C. R. and Stark, P. B. (1992).  $\ell^1$  Spectral Estimation: Algorithms and Tests of Super-resolution, in *Astronomical Society of the Pacific Conference Series*, ed. T. Brown, Vol 42, p. 453.

### Submitted Papers

- Bryan, B., Schneider, J., Miller, C., Nichol, R., Genovese, C., Wasserman, L. (2006) Mapping the Cosmological Confidence Ball Surface *Astrophysical Journal*, submitted.
- Merriam, E.P., Genovese, C.R., Lasson, M, and Colby, C.L. (2006) Transhemispheric remapping in the absence of the corpus callosum, *Human Brain Mapping*, submitted.
- Genovese, C. R. and Wasserman, L. (2006). Adaptive Confidence Bands, *Annals of Statistics*, submitted.

### Books

- Probability Explained: A Conceptual Framework for Building, Using, and Understanding Stochastic Models* by Genovese, C. R. Expected publication date September 2007.

### Research Grants

- 2004–2008 National Institutes of Health (R01)  
*New Statistical Methods for fMRI Applied to Remapping*  
(Principal Investigator)
- 2004–2007 National Science Foundation  
*Nonparametrical Statistical Methods for Astrophysical and Cosmological Data*  
(Principal Investigator)
- 2001–2006 National Science Foundation, Information Technology Research (ITR)  
*Statistical Data Mining for Cosmology*  
(co-Principal Investigator)
- 1999–2003 National Science Foundation CAREER Award  
*Statistical Methods for Graphical-Temporal Data*  
(Principal Investigator)
- 1997–1998 Shannon Award, National Institutes of Health  
*Improved Modeling and Inference in Functional MRI*  
(Principal Investigator)
- 1997–1999 National Science Foundation  
*Advanced Methods for the Statistical Analysis of fMRI Data*  
(co-Principal Investigator)

- 1997–1999 National Institutes of Health (Human Brain Project)  
*Advanced Methods for Neuroimaging Data Analysis*  
(co-Principal Investigator)
- 1997–2002 National Institutes of Health, Center Grant  
*Functional and Physiological MR Imaging of the Brain*  
(Methods Core, Investigator)
- 1995–1997 National Science Foundation  
*Statistical Methods for the Analysis of fMRI Data*  
(co-Principal Investigator)
- 1995 Center for the Neural Basis of Cognition  
*Statistical Methods for the Analysis of fMRI Data*  
(co-Principal Investigator)

### Professional Activities

- 2006- IMS Electronic Issues Committee, IMS Membership Committee
- 2006- Associate Editor, JASA Applications and Case Studies
- 2005-2006 IMS Program Chair, 2006 Joint Statistical Meetings
- 2002-2004 Grant Reviewer, National Institutes of Health (Study Sections SNEM5 & MABS)
- 2003-2004 Director of Graduate Studies, Dept. of Statistics, Carnegie Mellon
- 2001-2003 Advisory Committee, Center for Functional Neuroimaging Technologies  
Massachusetts General Hospital, NMR Center
- 2000-2003 Associate Head, Dept. of Statistics, Carnegie Mellon
- 1999-2002 Director of Undergraduate Studies, Dept. of Statistics, Carnegie Mellon
- 1999 National Research Council Panelist, Ocean Sciences Board.
- 1998 Local IMS Organizer, meeting of the Eastern North American Region  
of the Biometrics Society.
- 1994- Ad hoc reviewer for National Science Foundation, National Institutes of Health,  
and many journals including *Ann. of Stat.*, *J. of the Amer. Stat. Assoc.*

### Professional Memberships and Affiliations

Center for Neural Basis of Cognition, Carnegie Mellon & University of Pittsburgh  
American Statistical Association  
Institute of Mathematical Statistics  
Royal Statistical Society

### Selected Invited Presentations

- Aug 2006 Joint Statistical Meetings, Seattle, WA
- May 2006 Society of the Interface Annual Meeting, Pasadena, CA
- Jun 2006 Statistical Challenges in Modern Astronomy IV, State College, PA
- Jun 2006 Data Visualization and its Role in the Practice of Statistics, UCLA Statistics
- Jan 2006 SAMSI, Research Triangle, NC