

WILLIAM F. EDDY

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Pittsburgh, PA 15213 Email: bill@cmu.edu

EDUCATION:

Ph.D. (Statistics), 1976, Yale University
M.Phil. (Statistics), 1973, Yale University
M.A. (Statistics), 1972, Yale University
A.B. (Statistics, summa cum laude), 1971, Princeton University

POSITIONS:

Carnegie Mellon University, Pittsburgh, PA

2007 - John C. Warner Professor of Statistics
2004 - Professor, Department of Biological Sciences
1997 - Professor, Machine Learning Department
1997 - Professor, Center for Cognitive Brain Imaging
1996 - Professor, Center for the Neural Basis of Cognition
1996 - 2002 Director, Institute for Statistics and Its Applications
1995 - 1998 Associate Head, Department of Statistics
1986 - Professor, Department of Statistics
1980 - 1986 Associate Professor of Statistics
1976 - 1980 Assistant Professor of Statistics

Bell Communications Research, Morristown, NJ

1987 Resident Visitor

Massachusetts Institute of Technology, Boston, MA

1985 Visiting Professor

University of Heidelberg, Heidelberg, Germany

1984 Visiting Professor

Institute for the Application of Mathematics and Information, Milan, Italy

1982 Visiting Professor

Brown University, Providence, RI

1981 - 1982 Visiting Associate Professor of Applied Mathematics

EDITORIAL AND OTHER PROFESSIONAL ACTIVITIES:

American Association for the Advancement of Science

Elected Chair-Elect, Section on Statistics (U), 2007 - 2008; Chair, 2008 - 2009; Retiring Chair, 2009 - 2010
Elected Fellow, 1987
Member, 1980 -
American Statistical Association Representative to Section T, 1996 - 2000

American Federation of Information Processing Societies

Member, Board of Directors, 1988 - 1990
Member, By-Laws Committee, 1990
Member, Nominations Committee, 1989 - 1990, Chair, 1990
Chair, Audit Committee, 1988
Member, Admissions Committee, 1988

American Statistical Association

Chair, Editorial Search Committee, *The American Statistician*, 1995
Advisory Editor, *CHANCE*, 1993 -
Founding Editor, *Journal of Computational and Graphical Statistics*, 1990 - 1994
Member, Committee on Publications, 1992 - 1994
Member, Founders Award Committee, 1992
Statistician of the Year, Pittsburgh Chapter, 1990
Elected Member, Board of Directors, 1988 - 1990, 1992
Member, Time Capsule Committee, 1989
Editor, Special Section on Computational Statistics, *Journal of the ASA*, 1988
Chair, Ad Hoc Committee for a Journal of Statistical Computing and Graphics, 1987 - 1990
Member, Subcommittee on Journal Restructuring, 1986 - 1987
Member, Committee on Publications, 1985 - 1987, 1991 - 1994
Member, Ad Hoc Editorial Support Committee, 1985 - 1986
Member, Committee on Sections, 1984 - 1986
Member, Committee on Energy Statistics, 1983 - 1988, Vice-Chair, 1987-1988
Deputy Editor for Applications, *Journal of the ASA*, 1983 - 1984
Elected Fellow, 1982
Elected Publications Liaison Officer, Statistical Computing Section, 1982 - 1984
Associate Book Review Editor, *Journal of the ASA*, 1980 - 1983, 1989 - 1990
Associate Editor, *Journal of the ASA*, 1978 - 1982
Member, 1974 -

Committee of Presidents of Statistical Societies

Speaker, Visiting Lecturer Program, 1984 - 1989
Member, Directory Advisory Committee, 1983 - 1984

IEEE - Computer Society

Member, 1989 -

Institute of Mathematical Statistics

Member, Editorial Search Committee, 1996-1999

Member, Nominating Committee, 1995-1996
Member, Annual Meeting Program Committee, 1992
Elected Fellow, 1987
Member, Spring Regional Meeting Program Committee, 1987
Member, Annual Meeting Program Committee, 1986
Chairman, Workshop on the Use of Computers in Statistical Research, 1985-1986
Contributing Editor, Current Index to Statistics, 1978 - 1982
Member, 1974 -

Interface Foundation of North America
Founding Chairman of the Board and Founding Executive Director, 1987 - 1990

Interface Symposium
Member, Board of Governors, 1981 - 1987, Chairman - 1981

International Association for Official Statistics
Member, Program Committee, 1992, Ankara, Turkey

International Association for Statistical Computing
North American Regional Editor, Statistical Software Newsletter, 1986 - 1987
Interface Liason, 1982 - 1983
Member, 1981 -

International Statistical Institute
Elected Member, 1982-

Lithuanian Academy of Sciences
International Editorial Board Member, *Informatica*, 1991 -

Mu Sigma Rho
Elected Member, 1988

National Institute of Statistical Sciences
Member, Board of Trustees, 2000-2006
Corporate Member, 2001-2004
Member, Executive Committee, 2002-2005

National Institutes of Health
Member, Advisory Panel for Division of Computer Research and Technology, 1991
Member, Review Panel for Lab. of Statistical and Mathematical Methodology, DCRT, 1991

National Research Council of the National Academy of Sciences
Lifetime National Associate, 2002
Commission on Social and Behavioral Sciences and Education
Committee on National Statistics
Chairman, 2004-2010
Member, 1996 - 2000
Panel to Review Census 2000,

Member, 1998-2004
Panel on Statistical Programs and Practices of the Bureau of Transportation Statistics,
Member, 1996-1997
Panel on Statistics on Natural Gas,
Member, 1983 - 1985
Commission on Physical Sciences, Mathematics and Applications,
Working Group on Infrastructure Issues for Computational Science,
Member, 1992 - 1993
Board on Mathematical Sciences,
Member, 1990 - 1993
Committee on Applied and Theoretical Statistics,
Member, 1987 - 1993
Chair, 1990-1993
Panel on Statistics and Oceanography,
Co-chair, 1992 - 1993
Panel on Guidelines for Statistical Software,
Chair, 1990-1991

National Science Foundation

Member, Special Emphasis Panel in Biological Sciences, 1996
Member, SBIR (DMS) Panel, 1990, 1997
Member, Workshop on Emerging Engineering Technology, 1988
Member, SCREMS (DMS) Panel, 1986, 1999

Royal Statistical Society

Elected Fellow, 1977 -

Society for Industrial and Applied Mathematics

Associate Editor, *SIAM Review*, 1984 - 1989
Statistics Editor, *SIAM News*, 1984 - 1985
Member, Steering Committee, *Frontiers in Computational Statistics*, 1983 - 1984
Member, 1980 - 1992

Springer-Verlag

Founding Co-Editor of *CHANCE*, 1987 - 1991

Turkish Statistical Association

Board of Directors, ISTATISTIK, 1995-

PUBLICATIONS:

Books and Monographs:

- *Improving Data to Analyze Food and Nutrition Policies*, (with the Panel on Enhancing the Data Infrastructure in Support of Food and Nutrition Programs, Research, and Decision Making), 2005, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.

- *The 2000 Census: Counting Under Adversity*, (with the Panel to Review the 2000 Census), 2004, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.
- *Information Technology Research, Innovation, and E-Government*, (with the Committee on Computing and Communications Research to Enable Better Use of Information Technology in Government), 2002, Computer Science and Telecommunications Board, Division on Engineering and Physical Sciences, National Research Council. National Academy Press, Washington, D.C.
- *Principles and Practices for a Federal Statistical Agency*, 2001, Committee on National Statistics, Commission on Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.
- *The 2000 Census: Interim Assessment*, (with the Panel to Review the 2000 Census), 2001, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.
- *Proceedings, First Workshop*, (with the Panel to Review the 2000 Census), 2001, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.
- *Proceedings, Second Workshop*, (with the Panel to Review the 2000 Census), 2001, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.
- *Proceedings, Third Workshop*, (with the Panel to Review the 2000 Census), 2001, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, National Research Council. National Academy Press, Washington, D.C.
- *Information Technology Research for Federal Statistics*, (with the Committee on Computing and Communications Research to Enable Better Use of Information Technology in Government), 2000, Computer Science and Telecommunications Board, Commission on Physical Sciences, Mathematics, and Applications, National Research Council. National Academy Press, Washington, D.C.
- *Information Technology Research for Crisis Management*, (with the Committee on Computing and Communications Research to Enable Better Use of Information Technology in Government), 1999, Computer Science and Telecommunications Board, Commission on Physical Sciences, Mathematics, and Applications, National Research Council. National Academy Press, Washington, D.C.
- *The Bureau of Transportation Statistics, Priorities for the Future*, (with the Panel on Statistical Programs and Practices of the Bureau of Transportation Statistics), 1997, Committee on National Statistics, National Research Council. National Academy Press, Washington, D.C.
- *Bayesian Heuristic Approach to Discrete and Global Optimization* (with Mockus, J., Mockus, A., Mockus, L., and Reklaitis, G.), 1997. Algorithms, Visualization, Software, and Applications. Kluwer Academic Publishers, Dordrecht/Boston/London.
- *Statistics and Physical Oceanography*. (Co-Chair with Dudley Chelton and Panel on Statistics and Oceanography, National Research Council), 1993, National Academy Press, Washington, D.C. (This was republished by *Statistical Science*, see below).
- *The Future of Statistical Software: Proceedings of a Forum*, (with the Panel on Guidelines for Statistical Software), 1991, National Research Council. National Academy Press, Washington, D.C.

- *The Future of Computing at Carnegie Mellon: 3M Workstations in a 3D World*, (Co-Chair with Howard D. Wactlar and the Committee on the Future of Computing at Carnegie Mellon), 1989, Carnegie Mellon University, Pittsburgh, PA.
- *Cross-Disciplinary Research in the Statistical Sciences*, (with the IMS Panel on Cross-Disciplinary Research in the Statistical Sciences), 1988, Institute of Mathematical Statistics, Hayward, CA. (This was republished by *Statistical Science*, see below).
- *Computers in Statistical Research*, (Chair with the Workshop on the Use of Computers in Statistical Research), 1986, Institute of Mathematical Statistics, Hayward, CA. (This was republished by *Statistical Science*, see below.)
- *Natural Gas Data Needs in a Changing Regulatory Environment* (with Panel on Statistics on Natural Gas, National Research Council), 1985, National Academy Press, Washington, D.C.
- *Computer Science and Statistics: Proceedings of the 13th Symposium on the Interface*, (Editor), 1981, Springer-Verlag, New York.

Papers:

- Padmanabhan, K., Eddy, W.F., and Crowley, J.C., 2009. A Novel Algorithm for Optimal Image Thresholding of Biological Data. Submitted.
- Eddy, W.F. and Young, T.K., 2008. Optimizing MR Image Resampling, *Handbook of Medical Image Processing and Analysis*, (I.N. Bankman, Ed.), Academic Press, 675-684.
- Sellers, K.F., Miecznikowski, J.C., Viswanathan, S., Minden, J., and Eddy, W.F., 2007. Lights, Camera, Action! Systematic Variation in 2-D Difference Gel Electrophoresis Images. *Electrophoresis*, **28**, No. 18, 3324-3332.
- Lovell, M.R., Pardini, J.E., Welling, J., Collins, M.W., Bakal, J., Lazar, N., Roush, R., Eddy, W.F., and Becker, J.T., 2007. Functional Brain Abnormalities Are Related to Clinical Recovery and Time to Return to Play in Athletes. Submitted.
- Myers, K.L., Brockwell, A.E., and Eddy, W.F., 2007. State-Space Models for Optical Imaging. *Statistics in Medicine*, **26**, 3862-3874.
- McNamee, R.L., Eddy, W.F., and Tarter, R.E., 2006. A Head Motion Index to Quantify the Amount of Head Movement During fMRI Scanning: Application to Children at Risk for Substance Use Disorders. Submitted.
- Welling, J.S., Eddy, W.F., and Young, T.K., 2006. Rotation of 3D Volumes by Fourier-Interpolated Shears. *Graphical Models*, **68**, 356-370.
- Cao, M., Stenger, V.A., and Eddy, W.F., 2005. Estimation of Images and Sensitivities for Multi-Coil MRI. *Proceedings International Society for Magnetic Resonance in Medicine*, Miami Beach, FL, May 7-13.
- McNamee, R.L. and Eddy, W.F., 2005. Examination and Removal of the Spatial and Time-Related Effects of Physiological Noise on fMRI Data. Submitted.
- Eddy, W.F. and Smykla, M.L., 2005. The Last Frontier — Understanding the Human Mind, *Statistics: A Guide to the Unknown, Fourth Edition*, (R. Peck, et al., eds.), Duxbury, 211-226.
- Sellers, K.F., Miecznikowski, J.C., and Eddy, W.F., 2004. Systematic Variation in Genetic Microarray Data. *Biostatistics*, **1**, 1, 1-47.
- Eddy, W.F. and McNamee, R.L., 2004. Functional Magnetic Resonance Imaging, *Handbook of Computational Statistics*, (J.E. Gentle, W. Hardle, Y. Mori, eds.), Springer Verlag, 1002-1027.

- Lazar, N.A. and Eddy, W.F., 2003. Combining p-values in Functional Neuroimaging. Submitted.
- Luna, B., Minshew, N.J., Garver, K.E., Lazar, N.A., Thulborn, K.R., Eddy, W.F., Sweeney, J.A., 2002. Neocortical System Abnormalities in Autism: An fMRI Study of Spatial Working Memory. *Neurology*, **59**, 834-840.
- Lazar, N.A., Luna, B., Sweeney, J.A., and Eddy, W.F., 2002. Combining Brains: A Survey of Methods for Statistical Pooling of Information. *NeuroImage*, **16**, 538-550.
- Rosano, C., Krisky, C.M., Welling, J.S., Eddy, W.F., Luna, B., Thulborn, K.R., and Sweeney, J.A., 2002. Pursuit and Saccadic Eye Movement Subregions in Human Frontal Eye Field: A High Resolution fMRI Investigation. *Cerebral Cortex*, **12**, 2, 107-115.
- Mladenic, D., Eddy, W., Ziolko, S., 2001. Data Mining of Baskets Collected at Different Locations Over One Year. *Informatica*, **25**, 365-369.
- McNamee, R.L. and Eddy, W.F., 2001. Visual Analysis of Variance: A Tool for Quantitative Assessment of fMRI Data Processing and Analysis. *Magnetic Resonance in Medicine*, **46**, 1202-1208.
- 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**, 786-793.
- Lazar, N.A., Eddy, W.F., Genovese, C.R., and Welling, J., 2001. Statistical Issues in fMRI for Brain Imaging. *International Statistical Review*, **69**, 1, 105-127.
- Welling, J.S., Eddy, W.F., and Young, T.K., 2000. Loss of Information in 3D Image Registration for Functional MRI. Submitted.
- Sweeney, J.A., Krisky, C.M., Welling, J., Eddy, W.F., Thulborn, K.R., and Rosano, C., 2000. Functionally Defined Pursuit and Saccadic Eye Movement Subregions in Human Frontal Eye Field: A High-resolution fMRI Investigation. *Society for Neuroscience*, New Orleans, LA, No. 497.5.
- Eddy, W.F. and Young, T.K., 2000. Optimizing the Resampling of Registered Images, *Handbook of Medical Image Processing, Processing and Analysis*, (I.N. Bankman, Ed.), Academic Press, 603-612.
- 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. *Industrial Strength Parallel Computing* (A.E. Koniges, Ed.), Morgan Kaufmann Publishers, 431-451.
- Eddy, W.F., 1999. Discussion of "Multivariate Analysis By Data Depth: Descriptive Statistics, Graphics and Inference," by R.Y. Liu, J.M. Parelius, and K. Singh, *Annals of Statistics*, **27**, 3, 783-858. Discussion, pp. 841-843.
- Carpenter, P.A., Just, M.A., Keller, T.A., Eddy, W.F., and Thulborn, K.R., 1999. Time Course of fMRI-Activation in Language and Spatial Networks During Sentence Comprehension, *NeuroImage*, **10**, 216-224.
- Young, T.K. and Eddy, W.F., 1999. A Tale of Two Imaging Methods – Magnetic Resonance and Seismic Reflection. Submitted.
- Carpenter, P.A., Just, M.A., Keller, T., Eddy, W., and Thulborn, K., 1999. Graded Functional Activation in the Visuo-Spatial System with the Amount of Task Demand, *Journal of Cognitive Neuroscience*, **11**, 1, 9-24.
- Eddy, W.F., Fitzgerald, M., Genovese, C., Lazar, N., Mockus, A., and Welling, J. 1999. The Challenge of Functional Magnetic Resonance Imaging, *Journal of Computational and Graphical*

Statistics, **8**, 3, 545-558. Adapted from The Challenge of Functional Magnetic Resonance Imaging, *Massive Data Sets*, Proceedings of a Workshop, National Academy Press, Washington, D.C., 1996, 39-45.

- Eddy, W.F., Johnstone, I.M., Kettenring, J.R., Keller-McNulty, S., Kirkendall, N.J., McDonald, G.C., and Moore, D., 1998. Shaping Statistics for Success in the 21st Century: A Panel Discussion. Department of Statistics, Kansas State University, Technical Report Series II, Theory and Methods. Submitted.
- Noll, D.C., Genovese, C.R., Vazquez, A.L., O'Brien, J.L., and Eddy, W.F., 1998. Evaluation of Respiratory Artifact Correction Techniques in Multishot Spiral Functional MRI Using Receiver Operator Characteristic Analyses. *Magnetic Resonance in Medicine*, **40**, 633-639.
- Eddy, W.F., 1997. Functional Magnetic Resonance Imaging Is a Team Sport. *Statistical Computing and Graphics*, **8**, 1, 17-20.
- 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. *Journal of Supercomputing*, **11**, 295-318.
- Noll, D.C., Boada, F.E., and Eddy, W.F., 1997. Movement Correction in fMRI: The Impact of Slice Profile and Slice Spacing. *Proceedings of International Society for Magnetic Resonance in Medicine Fifth Scientific Meeting*, **3**, 1677.
- Noll, D.C., Boada, F.E., and Eddy, W.F., 1997. Multi-Shot Rosette Acquisitions: Application to Spectrally Selective Imaging and Functional MRI. *Proceedings of International Society for Magnetic Resonance in Medicine Fifth Scientific Meeting*, **1**, 133.
- Noll, D.C., Boada, F.E., and Eddy, W.F., 1997. A Spectral Approach to Analyzing Slice Selection in Planar Imaging: Optimization for Through-Plane Interpolation. *Magnetic Resonance in Medicine*, **38**, 151-160.
- Sohn, M.D., Bromhal, G.S., Pantazidou, M., Small, M.J., Sanil, A.P., and Eddy, W.F., 1996. Application of Bayesian Monte Carlo Statistical Methods for Characterization and Reduction of Uncertainty in Groundwater Fate and Transport. *Eos Trans. American Geophysical Union Fall Meet. Suppl.*, **77**(46), F277.
- Noll, D.C., Genovese, C.R., Nystrom, L.E., Vazquez, A.L., Forman, S.D., Eddy, W.F., and Cohen, J.D., 1997. Estimating Test-Retest Reliability in Functional MR Imaging II: Application to Motor and Cognitive Activation Studies. *Magnetic Resonance in Medicine* **38**, 508-517.
- Genovese, C.R., Noll, D.C., and Eddy, W.F., 1997. Applications of Reliability Estimates in fMRI. *Proceedings of International Society for Magnetic Resonance in Medicine Fifth Scientific Meeting*, **3**, 1658.
- Fan, X., Eddy, W.F., Noll, D.C., and Genovese, C.R., 1997. Visual Analysis of Variance: A Method for Quantitative Assessment of fMRI Data Processing Procedures. *Proceedings of International Society for Magnetic Resonance in Medicine Fifth Scientific Meeting*, **3**, 1659.
- Genovese, C.R., Noll, D.C., and Eddy, W.F., 1997. Estimating Test-Retest Reliability in Functional MR Imaging I: Statistical Methodology. *Magnetic Resonance in Medicine* **38**, 497-507.
- Eddy, W.F., and Sawitzki, G., 1996. Introduction to the Special Section on Design and Implementation of Data Analysis Systems, *Journal of Computational and Graphical Statistics*, **5**, 1, 57.
- Eddy, W.F., and Mockus, A., 1996. An Interactive Icon Index: Images of the Outer Planets, *Journal of Computational and Graphical Statistics*, **5**, 1, 100-111.

- Just, M.A., Carpenter, P.A., Keller, T.A., Eddy, W.F., and Thulborn, K.R., 1996. Brain Activation Modulated by Sentence Comprehension, *Science*, **274**, October 4, 1996, 114-116.
- Eddy, W.F., Fitzgerald, M., and Noll, D.C., 1996. Improved Image Registration By Using Fourier Interpolation, *Magnetic Resonance in Medicine*, **36**, 6, 923-931.
- Eddy, W.F., Fitzgerald, M., Genovese, C.R., Mockus, A., and Noll, D.C., 1996. Functional Imaging Analysis Software - Computational Olio. *Proceedings in Computational Statistics* (A. Prat, Ed.), Physica-Verlag, Heidelberg, 39-49.
- Genovese, C.R., Noll, D.C., and Eddy, W.F., 1996. Statistical Estimation of Test-Retest Reliability in fMRI. *Proceedings of the International Society for Magnetic Resonance in Medicine Fourth Scientific Meeting and Exhibition*, 345.
- 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 International Society for Magnetic Resonance in Medicine Fourth Scientific Meeting and Exhibition*, 343.
- Mockus, A., Eddy, W.F., Chang, S.Y., and Thulborn, K.R., 1996. Software for the Visualization of fMRI Data. *Proceedings of the International Society for Magnetic Resonance in Medicine Fourth Scientific Meeting and Exhibition*, 1774.
- Eddy, W.F., and Mockus, A., 1996. Dynamic Visualization in Modelling and Optimization of Ill Defined Problems. *State of the Art in Global Optimization: Computational Methods & Applications*, (C.A. Floudas and P.M. Pardalos, eds.), Kluwer Academic Publishers, Boston, 499-520.
- Qian, S., and Eddy, W.F., 1996. An Algorithm for Isotonic Regression on Ordered Rectangular Grids, *Journal of Computational and Graphical Statistics*, **5**, 3, 225-235.
- Eddy, W.F., 1996. Statistical Graphics. To appear in *Encyclopedia of Statistical Sciences*, (S. Kotz, Ed.), John Wiley & Sons, Inc., New York.
- Eddy, W.F., Fitzgerald, M., Genovese, C., and Mockus, A., 1995. The Challenge of Functional Magnetic Resonance Imaging. Appeared at <http://www.nap.edu/nap/online/massdata/contents.html>. Also appeared in *Massive Data Sets*, Proceedings of a Workshop, National Academy Press, Washington, D.C., 1996, 39-45.
- Eddy, W.F., and Mockus, A., 1995. Discovering, Describing, and Understanding Spatial-Temporal Patterns of Disease Using Dynamic Graphics, *Proceedings of the 25th Public Health Conference on Records and Statistics*, 14-17.
- Eddy, W.F., and Schervish, M.J., 1995. How Many Comparisons Does Quicksort Use?, *Journal of Algorithms*, **19**, 402-431.
- Eddy, W.F., Qian, S., and Sampson, A., 1995. Isotonic Probability Modeling with Multiple Covariates, *Computer Science and Statistics: Proceedings of the 27th Symposium on the Interface*, 500-505.
- Eddy, W.F., and Oue, S., 1995. Dynamic Three-dimensional Display of U.S. Air Traffic, *Journal of Computational and Graphical Statistics*, **4**, 4, 261-280.
- Eddy, W.F., Mockus, A., and Oue, Shingo, 1996. Approximate Single Linkage Cluster Analysis of Large Data Sets in High Dimensional Spaces, *Computational Statistics and Data Analysis*, **23**, 29-43.
- Eddy, W.F., Fitzgerald, M., Noll, D.C., Thulborn, K.R., 1995. Fourier Domain Registration of MR Images, *Proceedings of the Society of Magnetic Resonance Third Scientific Meeting and Exhibition*, Volume 2, 816.

- Eddy, W.F., Behrmann, M., Carpenter, P.A., Chang, S.Y., Gillen, J.S., Just, M.A., Keller, T.A., Mockus, A., Tasciyan, T.A., Thulborn, K.R., 1995. Test-Retest Reproducibility during fMRI Studies: Primary Visual and Cognitive Paradigms, *Proceedings of the Society of Magnetic Resonance Third Scientific Meeting and Exhibition*, Volume 2, 843.
- Forman, S.D., Cohen, J.D., Fitzgerald, M., Eddy, W.F., Mintun, M.A., and Noll, D.C., 1995. Improved Assessment of Significant Change in Functional Magnetic Resonance Imaging (fMRI): Use of a Cluster Size Threshold, *Magnetic Resonance in Medicine*, **33**, 636-647.
- Eddy, W.F., and Mockus, A., 1994. An Interactive Image Index, American Statistical Association, *1994 Proceedings of the Section on Statistical Graphics*, 1-6.
- Eddy, W.F., and Shirakawa, K., 1994, Dynamic Graphical Presentation of High Dimensional Data for Use in Process Control, *Proceedings of "Statistics in Industry, Science and Technology"*, 16-21.
- Eddy, W.F., 1994. Statistics and Physical Oceanography (Co-Chair with Dudley Chelton and Panel on Statistics and Oceanography, National Research Council), *Statistical Science* (with discussion), **9**, 2, 167-221.
- Eddy, W.F., and Mockus, A., 1994. An Example of the Estimation and Display of a Smoothly Varying Function of Time and Space—The Incidence of the Disease Mumps, *Journal of the American Society for Information Science*, Special Issue on Spatial and Geographical Information Systems, **45**, 9, 686-693.
- Dwyer, R.A., and Eddy, W.F., 1996. Maximal Empty Ellipsoids, *International Journal of Computational Geometry and Applications*, **6**, 2, 169-185. (A shorter version of this was published in the *Proceedings of the Fifth Annual ACM-SIAM Symposium on Discrete Algorithms*; see below.)
- Dwyer, R.A., and Eddy, W.F., 1994. Maximal Empty Ellipsoids, *Proceedings of the Fifth Annual ACM-SIAM Symposium on Discrete Algorithms*, 98-102.
- Eddy, W.F., and Mockus, A., 1993. Noninteractive Display of Functions with Temporal and Spatial Variation (or Surreal-time Graphics), *New Directions in Statistical Data Analysis and Robustness*, (S. Morgenthaler, E. Ronchetti, and W.A. Stahel, Eds.) 47-60, Birkhauser Verlag Basel, Switzerland.
- Eddy, W.F., and Shirakawa, K., 1993. So, You Want to Make a Video! *Statistical Computing and Graphics*, **4**, 2, 1-7.
- Eddy, W.F., and Viele, K., 1993. What Good is a Benchmark? *CHANCE*, **6**, 2, 50-53.
- Eddy, W.F., Meyer, M.M., Mockus, A., Schervish, M.J., Tan, K., and Viele, K., 1992. Smoothing Census Adjustment Factors: An Application of High Performance Computing, *Computer Science and Statistics: Proceedings of the 24th Symposium on the Interface*, 503-510.
- Eddy, W.F., and Mockus, A., 1992. An Example of Dynamic Graphics for Manufacturing Process Data, *International Statistical Review*, **61**, 81-95.
- Eddy, W.F., 1992. Regression Analysis, *Encyclopedia of Computer Science and Engineering*, (3rd Ed., A. Ralston and E.D. Reilly, Eds.) 1159-1160, Van Nostrand Reinhold, New York.
- Eddy, W.F., 1992. Statistical Applications, *Encyclopedia of Computer Science and Engineering*, (3rd Ed., A. Ralston and E.D. Reilly, Eds.) 1283-1284, Van Nostrand Reinhold, New York.
- Cox, L.H., and Eddy, W.F., 1991. The Quality of Statistical Software: Controversy in the Statistical Software Industry, *CHANCE*, **4**, 4, 12-18.

- Eddy, W.F., 1991. Dynamic Graphics for Very High-dimensional Continuous Manufacturing Processes, *Proceedings of the 48th Session of the International Statistical Institute*, Volume LIV.1, 4/5-1–4/5-6.
- Eddy, W.F., and Schervish, M.J., 1991. Parallel Computing: A Tutorial for Statisticians, *Computer Science and Statistics: Proceedings of the 23rd Symposium on the Interface*, 479-486.
- Cox, L.J., and Eddy, W.F., 1990. Some Remarks on Guidelines for Evaluating Statistical Software, *Proceedings of the Statistical Computing Section, American Statistical Association*, 69-77.
- Eddy, W.F., 1990. The DECstation 3100–UNIX for Power Users, *CHANCE*, **3**, 2, 42-47.
- Eddy, W.F., 1990. An Introduction to Color Systems, *Statistical Computing and Statistical Graphics*, **1**, 1, 7-10, American Statistical Association, Alexandria, Va.
- Eddy, W.F., 1990. *Cross-Disciplinary Research in the Statistical Sciences*, (with the IMS Panel on Cross-Disciplinary Research in the Statistical Sciences), *Statistical Science*, **5**, 121-146.
- Eddy, W.F., 1990. Random Number Generators for Parallel Processors, *Journal of Computational and Applied Mathematics*, **31**, 63-71.
- Eddy, W.F., and McIntosh, A.A., 1989. Determining Properties of Minimal Spanning Trees by Local Sampling, *Computer Science and Statistics: Proceedings of the 20th Symposium on the Interface*, (E. Wegman, Ed.) 538-545.
- Eddy, W.F., and Schervish, M.J., 1989. Asynchronous Iteration, *Computer Science and Statistics: Proceedings of the 20th Symposium on the Interface*, (E. Wegman, Ed.), 165-173.
- Eddy, W.F., and Sungur, E., 1987. Univariate Maximum Self-Decomposable Distributions, *Communications of the Faculty of Sciences, University of Ankara*, 27-39.
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Discussions and Other Publications:

- Invited Discussion of “Non-linear Fourier Time Series Analysis for Human Brain Mapping by Functional Magnetic Resonance Imaging” by Nicholas Lange and Scott L. Zeger, 1997, *Applied Statistics*, **46**, No. 1, 1-29.
- Invited Discussion of “Dynamic Graphics for Data Analysis” by Richard A. Becker, William S. Cleveland, and Allan R. Wilks, 1987, *Statistical Science* **2**, 386-387.
- Invited Discussion of “Graphical Perception: The Visual Decoding of Quantitative Information on Graphical Displays of Data” by William S. Cleveland and Robert McGill, 1987, *Journal of the Royal Statistical Society, Series A*, **150**, 192-229.
- Statement to the Subcommittee on Census and Population of the Committee on Post Office and Civil Service, U.S. House of Representatives, Serial No. 99-48, pp. 56-68. May 1, 1986.
- Artificial Intelligence and Statistics - Skunk Oil and Perfume, 1985, *Proceedings of the Westinghouse Energy and Advanced Technology Statistics Symposium*.
- Focus on the IBM Project at Carnegie-Mellon, *SIAM News*, 1984, Vol. 17, Number 4, p. 8.
- Discussion of “Multivariate Extreme-value Distributions,” by James Pickands III, 1981, *Bulletin of the International Statistical Institute*, **XLIX**, pp. 900-901.
- Invited Discussion of “Graphics for the Multivariate Two Sample Problem,” by J.H. Friedman and L.C. Rafsky, 1981, *Journal of the American Statistical Association*, Vol. 76, pp. 287-289.
- Invited Discussion of “Sensitivity to Models” in *Bayesian Statistics* (J.M. Bernardo, M.H. DeGroot, D.V. Lindley, and A.F.M. Smith, eds.), 1980, University Press, Valencia, Spain, pp. 370-373.

- Invited Discussion of “Density Estimation and Bump Hunting by Penalized Likelihood Method Exemplified by Scattering and Meteorite Data,” by I.J. Good and R.A. Gaskins, 1980, *Journal of the American Statistical Association*, Vol. 75, pp. 59-61.
- Invited Discussion of “Nonparametric Statistical Data Modeling,” by E. Parzen, 1979, *Journal of the American Statistical Association*, Vol. 74, pp. 124-126.
- Invited Discussion of “Consistent Nonparametric Regression,” by C.J. Stone, 1977, *Annals of Statistics*, Vol. 5, pp. 629-630.

Book Reviews:

- *Dynamic Graphics for Statistics*, W.S. Cleveland and M.E. McGill (Eds.), 1990, *J. Amer. Statist. Assoc.*, **85**, No. 410, p. 599.
- *Statistical Computing in Pascal*, D. Cooke, A.H. Craven, and G.M. Clarke, 1987, *Technometrics*, **28**, pp. 123-124.
- *The Handbook of Random Number Generation and Testing with TESTRAND Computer Code*, Edward J. Dudewicz and Thomas G. Ralley, 1984, *Journal of the American Statistical Association*, Vol. 79, p. 483.
- *Handbook of Applicable Mathematics, Vol. I: Algebra*, Walter Ledermann and Steven Vajda (eds.) *Vol. II: Probability*, Emlyn Lloyd (ed.) *Vol. III: Numerical Methods*, Robert F. Churchhouse (ed.), 1983, *Journal of the American Statistical Association*, Vol. 78, p. 1002.
- *Computational Probability* edited by P.M. Kahn, 1982, *Journal of the American Statistical Association*, Vol. 77, p. 692.

Technical Reports:

- A Comparative View of High Performance Computing Environments for Statistics (with M.M. Meyer, A. Mockus, M.J. Schervish, K. Tan, and K. Viele), April 1993.
- Extreme Values of Independent Gaussian Processes (with Norma Terrin), 1992.
- A Visit to the State Institute of Statistics, Ankara, Turkey, (with M.M. Meyer), September, 1992.
- Mumps Incidence 1968-1988 – A Videotape (with Audris Mockus), 1992.
- Moving Order Statistics (with H. J. Newton), July 1991.
- Exact Automatic Numerical Calculation of the Partial Derivatives of a Function of Several Variables, Technical Report No. 471, December 1989.
- Föreläsningssanteckningar (Computational Statistics), 1989, Technical Report, Institute for Mathematical Statistics, University of Umeå.
- Maximum Self-Decomposable Distributions and Their Domains of Attraction, (with E. Sungur), June 1987.
- The Implementation of Belief Functions in a Rule-based System, Technical Report No. 371 (with P.K. Black), June 1986.
- Inexact Reasoning with Belief Functions, Technical Report No. 369 (with P.A. Zalevsky), June 1986.
- Models of Inexact Reasoning, Technical Report No. 351 (with P.K. Black), May 1985.

- Uncertainties in National Pollutant Discharge Elimination System Measurements, Technical Report (with S.C. Caruso and D.K. Zazac), March 1985.
- The Cost of Shipping Freight by Truck: The Development of a Price Index for Motor Common Carriers of General Freight, Technical Report No. 280 (with D. Barsky and M. Sasso), April 1983.
- Probability Functionals for Random Sets, Technical Report No. 252 (with D.A. Trader), September 1982.
- A Central Limit Theorem for Minkowski Sums of Random Sets, Technical Report No. 228 (with D.A. Trader), December 1981.
- Laws of Large Numbers for Intersection and Union of Random Closed Sets, Technical Report No. 227, December 1981.
- Some First Attempts to Provide Cheery Indicators of Crime Using NCS Victimization Data, Working Memorandum NCS-2 (with S.E. Fienberg and D.L. Griffin), April 1981.
- NCS Data Files Available at CMU, Working Memorandum NCS-1 (with S.E. Fienberg, D. Griffin, and D.A. Trader) April 1981.
- What Do I Need? Comments on Statistical Computing Languages, March 1978 (discussion at the 11th Annual Symposium on the Interface).
- The Mode: Parameter and Estimates, Technical Report No. 141, Dept. of Statistics, Carnegie-Mellon University, December 1977.
- Robust M-estimates of a Location Parameter for Asymmetric Distributions, August 1977 (presented to the ASA Annual Meeting, Chicago).

GRANTS AND AWARDS:

- “Interdisciplinary Grants in the Mathematical Sciences: Magnetoencephalography (MEG) – Analysis of Very Noisy Spatial and Temporal Varying Field,” Dec. 15, 2005 to Nov. 30, 2006. National Science Foundation.
- “fMRI and Sports Related Concussion,” Sept. 25, 2001 to Aug. 31, 2006. National Institutes of Health (with University of Pittsburgh).
- “Advanced Methods for the Statistical Analysis of Functional Magnetic Resonance Imaging Data,” July 1, 1997 to June 30, 2002. National Science Foundation.
- “Core C: Computing and Statistical Methods Component submitted as part of Functional and Physiological Magnetic Resonance Imaging of the Brain,” July 1, 1997 to June 30, 2002. National Institutes of Health (with University of Pittsburgh).
- “Behavioral and fMRI Studies of Cognition and Autism,” June 1, 1997 to May 31, 2007. National Institutes of Health (with University of Pittsburgh).
- “Advanced Methods for Neuroimaging Data Analysis,” July 1, 1997 to June 30, 1999. National Institutes of Health (with University of Pittsburgh).
- “Mathematical Sciences Scientific Computing Research Environments,” July 1, 1997 to June 30, 1998. National Science Foundation DMS-9508427.
- “A Training Program in Cross-Disciplinary Research and Training,” July 1, 1996 to June 30, 1999. National Science Foundation.
- “Spatial and Temporal fMRI of Cognition,” Center for the Neural Basis of Cognition.

- “Statistical Methods for the Analysis of Functional Magnetic Resonance Imaging Data,” July 1, 1995 to June 30, 1997. National Science Foundation DMS-9505007.
- “Mathematical Sciences Scientific Computing Research Environments,” July 1, 1995 to December 15, 1997. National Science Foundation DMS-9508427.
- “Computational and Statistical Methods for Analysis of Neuroimaging Datasets,” August 15, 1995 to January 31, 1997. National Science Foundation IBN-9418982.
- “Mathematical Sciences Scientific Computing Research Environments,” July 1, 1993 to June 30, 1994. National Science Foundation DMS 93-05732.
- “A Comparative Evaluation of Parallel Computing Environments for Statistics,” October 1, 1991 to September 30, 1993. Bureau of the Census.
- “Asynchronous Computation of Fixed Points,” October 1, 1990 to September 30, 1996. Office of Naval Research N00014-91-J-1024 (with M. J. Schervish).
- “Parallel Computing in Bayesian Inference,” August 1, 1988 to July 31, 1991. National Science Foundation DMS-88-05676 (with M.H. DeGroot and M.J. Schervish).
- “Mathematical Sciences Research Equipment,” July 1, 1988 to June 30, 1989. National Science Foundation DMS-88-05406.
- “Parallel Computing in Bayesian Inference,” August 1, 1987 to July 31, 1988. National Science Foundation DMS-87-04218 (with M.H. DeGroot and M.J. Schervish).
- “Parallel Processing on a Network of Computers,” September 3, 1986, AT&T Information Systems (with M.J. Schervish).
- “Elicitation of Expert Opinion and Automated Machine Learning,” from July 15, 1985 to December 31, 1985. Federal Systems Division, IBM.
- “Acquisition of Mathematical Sciences Research Equipment,” from August 15, 1984 to July 31, 1985. National Science Foundation DMS 84-04927 (with S.E. Fienberg).
- “Research Instrumentation - Computing Equipment,” from August 1, 1984 to July 1, 1985. Office of Naval Research N00014-84-G-0137 (with S.E. Fienberg).
- “New Directions for Multivariate Statistical Computation and Data Analysis,” from July 1, 1984 to June 30, 1987. Office of Naval Research N00014-84-K-0588 (with S.E. Fienberg).
- “Statistical Inference and Expertise Acquisition for Expert Systems,” from May 1, 1984 to December 31, 1984. Federal Systems Division, IBM (with J. Carbonell).
- “Longitudinal Methods for the Analysis of Victimization Data,” from October 1, 1981 to September 30, 1983. National Institute of Justice 81-IJ-CX-0087 (with S.E. Fienberg and J.B. Kadane).
- “Probability Modeling for Random Sets,” from September 1, 1981 to August 31, 1982. National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship.
- “Computer Science and Statistics: 13th Symposium on the Interface,” February 20, 1981 to June 15, 1981. National Institutes of Health 263-MD-115398.
- “Computer Science and Statistics: 13th Symposium on the Interface,” from January 1, 1981 to December 31, 1981. Office of Naval Research N00014-81-C-0021.
- “Statistical Models for Random Sets,” from July 1, 1980 to December 31, 1982. National Science Foundation MCS 80-05115.
- “Redesign of the National Crime Survey,” from June 1, 1980 to May 31, 1981. Bureau of Social Science Research 810-5-80 (with S.E. Fienberg).

- “Peeling: A Multivariate Trimming Procedure,” from July 1, 1978 to December 31, 1980. National Science Foundation MCS 78-02422.

UNIVERSITY ACTIVITIES:

Associate Head, Department of Statistics, 1995-1998
 Director of Computing, Department of Statistics, 1989-
 Chair, H&SS Promotion and Tenure Committee, 1988-1989
 Co-chairman, Computer and Network Planning Committee, 1988-1989
 Manager, Statistics Department Computer Facility, 1981-1989
 Member, Faculty Senate Computing Advisory Committee, 1987-1989
 Member, Faculty Policy Committee, 1983 - 1985
 Member, Committee on Computer Utilization in Research, 1983
 Elected Chair, Computer Policy Committee, 1978 - 1981
 Member, Computer Policy Committee, 1976 - 1981
 Member, University Space Committee, 1980 - 1981
 Member, MIS Computer Committee, 1978 - 1979
 Chair, Faculty Affairs Council, 1978 - 1979
 Elected Member, Faculty Senate, 1977 - 1979
 Member, MIS Computer Science Committee, 1978
 Member, Faculty Senate Nominating Committee, 1978
 Member, Computer Policy Subcommittee on Educational Computing, 1978
 Member, Faculty Senate Elections Committee, 1978
 Member, Educational Affairs Council, 1977 - 1978

PH.D. STUDENTS:

- Jeffrey Palmer (expected; no time estimate), “Improved Estimation of Gene Expression Oligonucleotide Arrays”
- Mingyu Cao (Nov. 2006), “Estimation of Images and Sensitivities for Parallel MRI”
- Jeff Miecznikowski (Jan. 2006), “Spot-finding in Two-dimensional Differential Gel Electrophoresis”
- Kary Myers (Jan. 2006), “Removal of Physiological Effects in Intrinsic Optical Imaging”
- Thomas Nichols (March 2001), “Spatio-temporal Modeling of Positron Emission Tomography”
- Ashish Sanil (April 1998), “An Approach for Selection of Nonparametric Regression Methods”
- Ken Shirakawa (May 1997), “Fitting the Heat Transfer Equation to Temperature Data”
- Paul K. Black (April 1996), “An Examination of Belief Functions and Other Monotone Capacities”
- Mark Fitzgerald (February 1996), “Registration and Estimation of Functional Magnetic Resonance Images”
- Shingo Oue (February 1995), “Interactive Navigation for Local Viewing in Multivariate Datasets”
- Audris Mockus (October 1994), “Predicting a Space-time Process from Aggregate Data Exemplified by the Animation of Mumps Disease”
- Kok Hooi Tan (July 1993), “Asymptotic Analysis of the Number of Comparisons in Multipartition Quicksort”

- Matthew R. Marler (June 1993), “Covariance Structures of Brainstem Auditory Evoked Potentials”
- Mario Peruggia (August 1990), “Iterated Function Systems and the Propagation of Rounding Errors”
- Lionel A. Galway (July 1987), “Statistical Analysis of Star-Shaped Sets”
- Engin Sungur (December 1985), “Maximum Self-Decomposable Distributions”
- Tzao-Lin Lee (May 1985), “Modelling Random Convex Sets”
- David A. Trader (December 1981), “Infinitely Divisible Random Sets”
- James D. Gale (September 1980), “The Asymptotic Distribution of the Convex Hull of a Random Sample”
- Gabriel P. Pei (May 1980), “Asymptotic Distributions of M-Estimators in Non-Standard Cases”

CONSULTANT TO:

- Merck & Co., West Point, PA
- University of Pittsburgh Medical Center, Pittsburgh, PA
- Energy Information Administration, Washington, DC, 1995
- National Institutes of Health, Division of Computer Research and Technology, Bethesda, MD, 1991
- Energy Information Administration, Washington, DC, 1990
- Center for Night Vision and Electro-Optics, Fort Belvoir, VA, 1988-1989
- Bell Communications Research, Morristown, NJ, 1985-1987
- PPG Industries, Fiberglass Research, Pittsburgh, PA, 1982-1987
- Westinghouse Energy and Advanced Technology Division, Pittsburgh, PA, 1985
- Springer, Bush, and Perry, Attorneys at Law, Pittsburgh, PA, 1985
- National Institute of Aging, Bethesda, MD, 1985
- Management Science Associates, Pittsburgh, PA, 1984
- Mellon Institute for Research, Pittsburgh, PA, 1984
- Pitney Bowes, Stamford, CT, 1983
- Motor Carrier Rate-making Study Commission, Washington, D.C., 1982
- National Institute of Neurological and Communicative Disorders and Stroke, Bethesda, MD, 1982
- Eastern Computer Associates, Pittsburgh, PA, 1980-1981
- Litman, Litman, Harris and Specter, Attorneys at Law, Pittsburgh, PA, 1979-1981
- Office of the General Counsel, American Petroleum Institute, Washington, D.C., 1978
- Eckert, Seamans, Cherin and Mellott, Attorneys at Law, Pittsburgh, PA, 1977-1978
- Statistics Department, American Petroleum Institute, Washington, D.C., 1977-1978
- Consumers Union, Mt. Vernon, NY, 1973-1976