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PERSONAL:

Born:	29 January 1956	Home Address:	9 Altmont Court
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EDUCATION:

1979 - 1984 Virginia Polytechnic Institute and State University, Blacksburg, Virginia
Statistics Ph.D., May 1984.
 Dissertation: *Nonparametric Bayesian Inference*
Applied Mathematics M.S., June 1982.
Statistics M.S., July 1980.

1973 - 1977 University of Virginia, Charlottesville, Virginia
Majors: Anthropology, Mathematics. B.A. June, 1977 (*cum laude*).

EMPLOYMENT:

July 2003 - present Professor of the Practice of Statistics, ISDS
Duke University, Durham, North Carolina.

Feb. 2002 - June 2003 Special Assistant to the Director of the Office of Biostatistics
Center for Biologics Evaluation and Research
U.S. Food and Drug Administration.

June 1999 - Feb. 2002 Acting Chief Statistician/Director of the Office of Advanced
Studies, Bureau of Transportation Statistics
U.S. Department of Transportation.

June 1997 - June 1999 Mathematical Statistician, Statistical Engineering Division
National Institute of Standards and Technology.

June 1993 - May 1997 Associate Professor, Department of Statistics
Carnegie Mellon University.

Aug. 1987 - May, 1993 Assistant Professor, Department of Statistics
Carnegie Mellon University.

Sept. 1986 - July 1987 Visiting Assistant Lecturer, Department of Pure Mathematics
and Mathematical Statistics, University of Cambridge.

July 1984 - Aug. 1986 NSF Postdoctoral Research Fellow,
Department of Statistics, University of California, Berkeley.

MONOGRAPHS:

1. Parnell, G., Banks, D., Borio, L., Brown, G., Cox, L. A., Gannon, J., Harvill, E., Kunreuther, H., Morse, S., Pappaioanou, M., Pollack, S., Singpurwalla, N., and Wilson, A. (2008). *Report on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis*, National Academies Press, Washington, D.C.

EDITED BOOKS:

1. D. Banks and E. P. Smith (2008). *The Good Book: Thirty Years of Comments, Conjectures & Conclusions by I. J. Good*, Rice University Press, Houston, TX.
2. J. Asher, D. Banks, and F. Scheuren, eds. (2007). *Statistical Methods for Human Rights*, Springer, New York.
3. D. Banks, L. House, P. Arabie, F. R. McMorris, and W. Gaul, eds. (2004). *Classification, Cluster Analysis, and Data Mining*, Springer-Verlag, Berlin.
4. S. Kotz, C. Read, and D. Banks, eds. (1999). *Encyclopedia of Statistical Sciences Update Volume 3*, Wiley, New York.
5. S. Kotz, C. Read, and D. Banks, eds. (1998). *Encyclopedia of Statistical Sciences Update Volume 2*, Wiley, New York.
6. S. Kotz, C. Read, and D. Banks, eds. (1997). *Encyclopedia of Statistical Sciences Update Volume 1*, Wiley, New York.

REFEREED PAPERS:

1. Banks, D., House, L., and Killourhy, K. (2009). "Cherry-Picking for Complex Data: Robust Structure Discovery," to appear in *Philosophical Transactions of the Royal Society, Series A*.
2. Banks, D., Datta, G., Karr, A., Lynch, J., Niemi, J., and Vera, F. (2009). "Bayesian CAR Models for Syndromic Surveillance on Multiple Data Streams: Theory and Practice," to appear in *Information Fusion*.
3. Rios Insua, D., Rios, J., and Banks, D. (2009). "Adversarial Risk Analysis," *Journal of the American Statistical Association*, **104**, 841–854.
4. Banks, D. (2009). "Statistical Data Mining," to appear in *Wiley Interdisciplinary Reviews: Computational Statistics*.
5. Vogenbeck, D., Forgette, R., Banks, D., and Contractor, N. (2009). "Social Network Methodology in the Study of Disasters: Issues and Insights Prompted by Post-Katrina Research," *Population Research and Policy Review*, **28**, 11–29.
6. Henderson, T., Sirois, M., Chen, A., Airriess, C., Swanson, D., and Banks, D. (2009). "After a Disaster: Lessons in Survey Methodology from Hurricane Katrina," *Population Research and Policy Review*, **28**, 67–92.

7. Niemi, J., Smith, M., and Banks, D. (2008). "Test Power for Drug Abuse Surveillance," in *BioSecure 2008*, Lecture Notes in Computer Science, edited by D. Zeng, H. Rolka, and H. Chen, Springer-Verlag, Berlin, pp. 131-142.
8. Banks, D., and Hengartner, N. (2008). "Social Networks," *Encyclopedia of Quantitative Risk Assessment*, ed. by E. Melnick and B. Everitt, to appear. E-version at [http:// ⊕ mrw.interscience.wiley.com/emrw/9780470061596/risk/article/risk0667/current/pdf](http://mrw.interscience.wiley.com/emrw/9780470061596/risk/article/risk0667/current/pdf).
9. Banks, D., and Hengartner, N. (2008). "Risk Analysis for Critical Infrastructure," *Encyclopedia of Quantitative Risk Assessment*, ed. by E. Melnick and B. Everitt, in press. E-version at <http://mrw.interscience.wiley.com/emrw/9780470061596/risk/article/risk066 ⊕ 66/current/pdf>.
10. Warren, R., Airoidi, E., and Banks, D. (2008). "Network Analysis of Wikipedia," in *Statistical Methods in eCommerce Research*, ed. by G. Shmueli and W. Jank, Wiley, NY, pp. 81-102.
11. Banks, D., and Said, Y. (2007). "New Issues in Human Rights Statistics," in *Statistical Methods for Human Rights*, ed. by J. Asher, D. Banks, and F. Scheuren, Springer: New York, pp. 227-240. on *Statistical Methods for Human Rights*.
12. Banks, D., and Said, Y. H. (2006). "Data Mining in Electronic Commerce," *Statistical Science*, **21**, 234-246.
13. Banks, D. (2006). "Statistical Aspects of Disaster Response," *Journal of Statistics and Applications*, **1**, 137-142.
14. Karr, A., Sanil, A., and Banks, D. (2006). "Data Quality: Issues and Strategies," *Statistical Methodology*, **3**, 137-173.
15. Banks, D. and Anderson, S. (2006). "Game Theory and Risk Analysis in the Context of the Smallpox Threat," in *Statistical Methods in Counterterrorism*, eds. A. Wilson, G. Wilson, and D. Olwell, Springer, New York, pp. 9-22.
16. Banks, D., Woo, J., Burwen, Perucci, P., Braun, M., and Ball, R. (2005). "Comparing Data Mining Methods on the VAERS Database," *Pharmacoepidemiology and Drug Safety*, **14**, 601-609.
17. House, L., and Banks, D. (2004). "Robust Multidimensional Scaling," *Proceedings in Computational Statistics 2004*, Physica-Verlag, Berlin, pp. 251-260.
18. House, L., and Banks, D. (2004). "Cherry-Picking as a Robustness Tool," in *Classification, Cluster Analysis, and Data Mining*, eds. Banks, House, Arabie, McMorris, and Gaul, Springer-Verlag, Berlin, pp. 197-208.
19. Banks, D. and Olszewski, R. (2003). "Data Mining in Federal Statistical Agencies," in *Statistical Data Mining and Knowledge Discovery*, H. Bozdogan, Ed., Chapman & Hall, Boca Raton, FL, pp. 529-548.
20. Banks, D., and Petricoin, E. (2003). "Finding Cancer Signals in Mass Spectrometry Data," *Chance*, **16**, 8-12.

21. Scher, M., Jones, B., Steppe, D., Cork, D., Seltman, H., and Banks, D. (2003). "Functional Brain Maturation in Neonates as Measured by EEG-Sleep Analyses," *Clinical Neurophysiology*, **114**, 875-882.
22. Banks, D., Olszewski, R., and Maxion, R. (2003). "Comparing Methods of Multivariate Nonparametric Regression," *Communications in Statistics: Simulation and Computation*, **32**, 541-571.
23. Banks, D., and Fienberg, S. (2002). "Data Mining," *Encyclopedia of Physical Science and Technology*, third edition, Volume 4, Academic Press, pp. 247-261.
24. Banks, D., and Olszewski, R. (2002). "Combinatorial Search Problems in Statistical Modeling," *Statistics in Transition*, **5**, 803-822.
25. M. Scher, Steppe, D., Beggarly, M., Salerno, D., and Banks, D. (2002). "Neonatal Sleep Disruption Mimicking Hypoxic-Ischemic Encephalopathy After Intrapartum Asphyxia," *Sleep Medicine*, **5**, 411-415.
26. Banks, D. (2001). "Dimensions of Human Rights Analysis," *Papers on Human Rights*, ed. by N. d. Bivings, American Statistical Association, pp. 41-50.
27. Banks, D., McGuckin, N., and Keyes, M. A. (2001). "Are Households with Interrupted Phone Service Like Those with No Phone Service?" *Transactions of the Transportation Research Board*, **1768**, 99-105.
28. Banks, D. (2001). "Exploratory Data Analysis: Multivariate Approaches," *International Encyclopedia of the Social and Behavioral Sciences*, **8**, 5164-5169.
29. Levenson, M., Banks, D., Eberhardt, K., Vangel, M., and Yen, J. (2000). "An Approach to Combining Results from Multiple Methods Motivated by the ISO GUM," *Journal of Research of the National Institute of Standards and Technology*, **105**, 571-579.
30. Banks, D., Constantine, G., Merriwether, A., and LaFrance, M. (1999). "Nonparametric Inference on mtDNA Mismatches," *Journal of Nonparametrics*, **11**, 215-232.
31. Shannon, W., and Banks, D. (1999). "Combining Classification Trees Using MLE," *Statistics in Medicine*, **18**, 727-740.
32. Banks, D., Over, P., and Zhang, N.-F. (1999). "Blind Men and Elephants," *Information Retrieval*, **1**, 7-34.
33. Banks, D. (1998). "Maximum Entropy Models for Random Objects," *Computing Science and Statistics*, **30**, 67-77.
34. Banks, D., and Constantine, G. (1998). "Metric Models for Random Graphs," *Journal of Classification*, **15**, 199-224.
35. Shannon, W., and Banks, D. (1997). "An MLE Strategy for Combining CART Models," *Computing Science and Statistics*, **29**, 540-544.
36. Scher, M., Dokianakis, S., Steppe, D., Banks, D., and ScLabassi, R. (1997). "Computer Classification of State in Healthy Preterm Neonates," *Sleep*, **20**, 132-141.
37. Banks, D. (1996). "A Conversation with I. J. Good," *Statistical Science*, **11**, 1-19.

38. Kurfess, T., Banks, D., and Wolfson, L. (1996). "A Multivariate Statistical Approach to Metrology," *Journal of Manufacturing Science and Engineering*, **118**, 652-658.
39. Banks, D., and Carley, K. (1996). "Models for Network Evolution," *Journal of Mathematical Sociology*, **21**, 173-196.
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42. Kurfess, T., and Banks, D. (1995). "Statistical Verification of Conformance to Geometric Tolerance," *Computer-Aided Design*, **27**, 353-361.
43. Sanil, A., Banks, D., and Carley, K. (1995). "Models for Evolving Fixed Node Networks: Model Fitting and Model Testing," *Social Networks*, **17**, 65-81.
44. Scher, M., Steppe, D., and Banks, D. (1995). "Postnatal Adaptation of Brain Function in Fullterm Neonates as Assessed by EEG Sleep Analyses," *Sleep*, **18**, 531-535.
45. Scher, M., Steppe, D., Banks, D., Guthrie, W., and Sciabassi, R. (1995). "Maturational Trends of EEG-Sleep Measures in the Healthy Preterm Neonate," *Pediatric Neurology*, **12**, 314-322.
46. Banks, D., and Carley, K. (1994). "Metric Inference for Social Networks," *Journal of Classification*, **11**, 121-150.
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49. Banks, D. (1993). "Is Industrial Statistics Out of Control?" discussion paper in *Statistical Science*, **8**, 356-377; Rejoinder, 402-409.
50. Banks, D. (1993). "Exact Results and Bounds for the Mean Squared Error of Percentile Bootstraps," *Computational Statistics*, **8**, 347-362.
51. Carley, K., and Banks, D. (1993). "Nonparametric Inference for Network Data," *Journal of Mathematical Sociology*, **18**, 1-26.
52. Banks, D., and Parmigiani, G. (1992). "Preanalysis of Superlarge Datasets," in the *Journal of Quality Technology*, **24**, 115-129.
53. Banks, D., and Fienberg, S. (1992). "Statistics, Multivariate," *Encyclopedia of Physical Science and Technology*, ed. by R. A. Myers, Vol. 15, p. 779-821.

54. Banks, D. (1991). "New Patterns of Oppression: An Updated Analysis of Human Rights Data," in *Statistics and Human Rights*, T. Jabine and R. Claude, eds., University of Maryland Press, pp. 364-391.
55. Altman, N., Banks, D., Chen, P., Duffy, D., Hardwick, J., Legér, C., Owen, A., and Stukel, T. (1991). "Meeting the Needs of New Statistical Researchers," *Statistical Science*, **6**, 163-174. Rejoinder in *Statistical Science*, **7**, 265-266.
56. Banks, D. (1989). "Patterns of Oppression: An Exploratory Analysis of Human Rights Data," *Journal of the American Statistical Association*, **84**, 674-681.
57. Banks, D. (1989). "Bootstrapping-II," *Encyclopedia of Statistical Sciences*, Vol. 10 (Supplement Volume), John Wiley and Sons, Inc., New York, pp. 17-22.
58. Banks, D. (1988). "Histospline Smoothing the Bayesian Bootstrap," *Biometrika*, **75**, 673-684.
59. Banks, D. (1988). "Measuring Human Rights," *Proceedings of the Symposium on Human Rights, Development and Foreign Policy: Canadian Perspectives*, Irving Brecher, ed., The Institute for Research on Public Policy, Halifax, Nova Scotia, pp. 539-562.
60. Banks, D. (1986). "The Analysis of Human Rights Data Over Time," *Human Rights Quarterly* **8**, 654-680.

DISCUSSIONS, REVIEWS, AND MISCELLANEOUS:

1. Parnell, G., Borio, L., Banks, D., and Brown, G. (2008). "Scientists Urge DHS to Improve Bioterrorism Risk Assessment," *Biosecurity and Bioterrorism: Biodefense Strategy, Practice and Science*, **6**, to appear.
2. Banks, D. (2008). "Statisticians and Metabolomics: Collaborative Possibilities for the Next *omics Revolution?" *Chance*, **21**, No. 2, 5-11.
3. Banks, D. (2007). "Risk Analysis in National Defense," to appear in *Outlook 2007*, Presidential Classroom.
4. Banks, D. (2006). "Meeting Report: Classification Society of North America", *IMS Bulletin*, **35:6**, 10.
5. Banks, D. (2006). "Biometric Authentication," in *Statistical Methods in Counterterrorism*, eds. A. Wilson, G. Wilson, and D. Olwell, Springer, New York, pp. 43-45.
6. Banks, D. (2006). "Statistics and Cybersecurity," 80, *Outlook 2006*, Presidential Classroom.
7. Banks, D., and Shieh, G. (2006). "A Special Issue on Bioinformatics: Introduction," *Statistical Methodology*, **3**, vii-viii.
8. Banks, D., Sirois, M., and Thattil, R. (2005). "Statistical Issues in Tsunami Response," *Chance*, **18**, 35-40.
9. Banks, D. (2005). "Statistics and Homeland Defense," *Amstat News*, Issue #339, September, 49-51.

10. Banks, D., and Reiter, J. (2005). "Confidentiality Issues Related to Transportation Use of Census Data for Transportation Planning: Preparing for the Future," commissioned paper for the Transportation Research Board, National Academies.
11. Banks, D., and Melnick, E. (2005). "Workshop Report: Statistics and Counterterrorism," in *Amstat News*, Issue #332 (February), 43.
12. Hake, B., and Banks, D. (2004). "The Hake Hardship Scale: A Quantitative System for Assessment of Hardship in Immigration Cases Based on a Statistical Analysis of AAO Decisions," in *Immigration Options for Physicians*, ed. by Margaret Catillaz, American Immigration Lawyers Association, Washington, D.C., pp. 49–66.
13. Banks, D., and Liang, F. (2004). Review of *The Elements of Statistical Learning*, by T. Hastie, R. Tibshirani, and J. Friedman, *Journal of Classification*, **21**, 155-157.
14. Banks, D. (2003). "Proteomics: The Frontier Between Genomics and Metabolomics," *Chance*, **16**, 6-7.
15. Banks, D. (2003). "Game Theory and Risk Analysis," CD-ROM release of the *Proceedings of the Interface*, PowerPoint presentation.
16. Banks, D. (2003). "Federal Statisticians Meet on Counterterrorism," *Amstat News*, January, p. 13.
17. Banks, D. (2002). Obituary for Chikio Hayashi, *IFCS Newsletter*, No. 24, p. 5-6.
18. Banks, D. (2002). Discussion of the invited session on Ethics and Publication, *Proceedings of the Section on Government Statistics of the American Statistical Association*.
19. Banks, D. (2002). "Statistics and Homeland Defense," *Chance*, **15**, No. 1, 8-11.
20. Banks, D. (2002). "Report on AAAS Award for Herb and Louise Spierer," *Amstat News*, February, p. 25-26.
21. Banks, D. (2001). Introduction of Willem Heiser, *Journal of Classification*, **18**, p. 155.
22. Rukhin, A., Soto, J., Nechvatal, J., Smid, M., and Banks, D. (2000). "A Statistical Test Suite for Random and Pseudorandom Number Generators for Statistical Applications," NIST Special Publication in Computer Security 800-22.
23. Banks, D. (2000). Discussion of "Controversies and Contradictions in Statistical Process Control" by William Woodall, *Journal of Quality Technology*, **32**, 366.
24. Banks, D., and Levenson, M. (2000). Review of *Advances in Knowledge Discovery and Data Mining*, ed. by U. Fayyad, G. Piatetsky-Shapiro, P. Smyth, and R. Uthurusamy, *Journal of Classification*, **17**, 143-145.
25. Banks, D. (1999). Review of Lad's *Operational Subjective Statistical Methods*, in the *Journal of Classification*, **16**, 141-143.
26. Banks, D. (1998). Numerous short entries for the update of the *Encyclopedia of Statistical Science*.

27. Banks, D., Dashiell, W., Gallagher, L., Hagwood, C., Kacker, R., and Rosenthal, L. (1997). "Software Testing by Statistical Methods," NIST Internal Report #6129.
28. Banks, D. (1997). "Strategies for Superlarge Datasets," (a discussion of three problems with large datasets), in the *Newsletter of the Classification Society of North America*, #50, July 1997.
29. Banks, D. (1997). "The Geometry of Location Estimators," (describes a geometric method to compare location estimators), in the *Newsletter of the Classification Society of North America*, #49, April 1997.
30. Banks, D. (1997). "The Problem of Excess Genius," (clusters of talent in history), in the *Newsletter of the Classification Society of North America*, #48, February 1997.
31. Banks, D. (1996). "Qui Metabarit Ipsos Menses?" (statistical issues in grading), in the *Newsletter of the Classification Society of North America*, #47, November 1996.
32. Banks, D. (1996). "Bayesian Infants" (a paradox in Bayesian theory), in the *Newsletter of the Classification Society of North America*, #46, October 1996.
33. Banks, D. (1996). "Working Without a Net" (critique of neural net methodology), in the *Newsletter of the Classification Society of North America*, #45, August 1996.
34. Banks, D. (1996). "Questioning Authority" (survey of problems in authorship attribution), in the *Newsletter of the Classification Society of North America*, #44, April 1996.
35. Banks, D. (1996). Review of Wasserman and Galaskiewicz's *Advances in Social Network Analysis*, in *Journal of Classification*, **13**, 356-358.
36. Banks, D. (1993). Review of LePaige and Billard's *Exploring the Limits of the Bootstrap*, *Journal of the American Statistical Association* **88**, 708-710.
37. Banks, D. (1991). *The Pittsburgh Chapter of the American Statistical Association*.
38. Banks, D., Hardwick, J., Altman, N., Owen, A., Legér, C., and Stukel, T. (1991). "New Researchers Survival Guide," Institute for Mathematical Statistics, Hayward, CA.
39. Banks, D. (1990). Review of Bernhard Flury's *Common Principal Components and Related Multivariate Models*, in *The New York Statistician*.
40. Banks, D. (1990). Review of Peter Sprent's *Applied Nonparametric Statistical Methods*, *Journal of the American Statistical Association*, **85**, 264.
41. Banks, D. (1989). Review of *The Beauty of Fractals* by Peitgen and Richter, and *The Science of Fractal Images*, edited by Peitgen and Saupe, in *Chance*, **2**, p. 47-49.
42. Banks, D. (1988). Review of *Design, Data and Analysis*, edited by Colin Mallows, *Journal of the American Statistical Association*, **83**, 1214.
43. Banks, D. (1988). Discussion of "The Interface Between Statistics and the Philosophy of Science," by I.J. Good, *Statistical Science*, **3**, 404-406.
44. Banks, D., and Young, G.A. (1987). Comment on "What is Projection Pursuit?" by M. C. Jones and R. Sibson, *Journal of the Royal Statistical Society, Series A*, **150**, 23-24.

PROCEEDINGS PAPERS:

1. Stangl, D., Banks, D., House, L., and Reiter, J. (2006). "Progressive Mastery Testing: Does It Increase Learning and Retentions? Yes and No." *Proceedings of ICOTS 7*, www.stat.auckland.ac.nz/iase/publications/17/C315.pdf.
2. Lott, J., Scheuren, F., Keller, J., and Banks, D. (2004). "From Survey Data to Multiple Types of Data in Historical and Real Time," in *Proceedings of the Government Statistics Section of the American Statistical Association*.
3. Levy, P. S., Burke, B. J., Eyerman, J., Banks, D., Schwartz, B., and Wortley, P. (2004). "Statistical Methods Applicable to Bioterrorism Prevention and Damage Control," International Chinese Association of Quantitative Management, *Proceedings of The First Sino-International Symposium on Probability, Statistics, and Quantitative Management*, Taiwan, pp. 1-19.
4. Champaneri, A., and Banks, D. (2002). "Data Quality in Federal Statistics," in *Proceedings of Government Statistics Section of the American Statistical Association*.
5. Shannon, W., Banks, D., Janikow, C., and Mozolewski, T. (2001). "Computer-Intensive Methods in Classification," *Bulletin of the International Statistical Institute 53rd Session Proceedings*, Book 2, 487-490.
6. Banks, D., Contrino, H., McGuckin, N., and Crutcher, B. (2001). "Recursive Partitioning Regression Analysis of Transportation Data," in *Proceedings of NATMEC-2000*.
7. Banks, D., Contrino, H., and McGuckin, N. (2000). "Data Fusion in Surveys by Recursive Partitioning Regression," *Proceedings of the International Association for Travel Behavior Research: 2000*, 89-98.
8. Banks, D. (2000). "Strategies for Data Mining," *Proceedings of the Fifth Annual U.S. Army Conference on Applied Statistics*, 87-96
9. Banks, D., and Kapatou, A. (1999). "Design of Cost-Effective Experiments," *Proceedings of the American Statistical Association Section on Quality and Productivity*.
10. Banks, D. (1999). "The Collision of Government, Ethics, and Statistics," *Proceedings of the American Statistical Association Section on Social Statistics*, 167-172.
11. Banks, D., and Eberhardt, K. (1999). "Equating Laboratories: Modeling and Analysis," *Proceedings of the 16th IEEE Instrumentation and Measurement Technology Conference*, **2**, 1099-1104.
12. Banks, D. (1998). "Testing Random Number Generators," *Proceedings of the Statistical Computing Section of the American Statistical Association*, 102-107.
13. Banks, D., Yen, J., Gallagher, L., Hagwood, C., and Rosenthal, L. (1998). "Software Testing: Protocol Comparison," in the *Proceedings of the Eleventh International Software Quality Week*, Section 8, 2-19.
14. Banks, D., and Olszewski, R. (1997). "Estimating Local Dimensionality," *Proceedings of the Statistical Computing Section of the American Statistical Association*, 177-182.

15. Shannon, W., and Banks, D. (1997). "A Distance Metric for Classification Trees," *Proceedings of the 1997 Conference on Artificial Intelligence and Statistics*, 83-88.
16. Banks, D., Olszewski, R., and Maxion, R. (1995). "Comparing Methods for Nonparametric Regression," *Proceedings of the Statistical Computing Section of the American Statistical Association*, 136-141.
17. Banks, D., and Lavine, M. (1992). "The Minimal Spanning Tree for Nonparametric Regression and Structure Discovery," *Computing Science and Statistics*, Vol. 24, 370-374.
18. Banks, D., and Carley, K. (1992). "A Linear Model for Graph-Valued Random Variables," *Proceedings of the Social Statistics Section of the American Statistical Association*, 174-179.
19. Banks, D., and Spierer, H. (1990). "A New Statistical Strategy for Assessing Human Rights Change," in *Proceedings of the Social Statistics Section of the American Statistical Association*, p. 146-151. Reprinted in *Papers on Human Rights*, ed. by N. d. Bivings, American Statistical Association, p. 26-31.
20. Banks, D. (1989). "Bayesian Sieving," *Proceedings of the Statistical Computing Section of the American Statistical Association* 128-134.
21. Banks, D., and Spierer, H. (1989). "New Human Rights Patterns," in the *Proceedings of the Social Statistics Section of the American Statistical Association*, 320-325. Reprinted in *Papers on Human Rights*, ed. by N. d. Bivings, American Statistical Association, p. 20-25.
22. Banks, D. (1985). "Patterns of Oppression: A Statistical Analysis of Human Rights Data," *Proceedings of the Social Statistics Section of the American Statistical Association*, 154-162. Reprinted in *Papers on Human Rights*, ed. by N. d. Bivings, American Statistical Association, p. 32-40.

PROFESSIONAL OFFICES:

- Council of Sections Representative to the American Statistical Association Board of Directors, 2008-2010.
- Chair of the American Statistical Association Section on National Defense and Security, 2008.
- Chair of the American Statistical Association Section on Risk Analysis, 2005.
- Representative to the Council of Sections for the American Statistical Association, for the Section on Statistics in Defense and National Security, 2004-2005.
- Program Chair for the American Statistical Association Section on Risk Analysis, 2003.
- President of the Classification Society of North America, 2000-2002.
- Secretary of the International Federation of Classification Societies, 1997-2001. Re-elected through 2005. Elected as an Additional Member of the IFCS Council, 2005 to 2008.

- Board member of the Classification Society of North America, 1996-1999.
- Secretary of the Pittsburgh Chapter of the American Statistical Association, 1989-1991.

HONORS AND AWARDS:

- Roger Herriot Award for innovation in federal statistics programs, 2003 (presented by the Washington Statistical Society and the ASA Section on Government Statistics).
- President's Award from the Washington Statistical Society, 2002-2003, for work in statistical aspects of counterterrorism.
- Service award from the U.S. Food and Drug Administration, for analysis of adverse event data in vaccines (May, 2003).
- Reward and Recognition Certificate from the U.S. Food and Drug Administration, for research on counterterrorism (August, 2002).
- Elected as Fellow of the American Statistical Association, 2001.
- U.S. DOT Secretary's Gold Medal Certificate for Outstanding Achievement, given for participation in and help to establish a DOT education program. The award was shared by the Garret Morgan educational outreach team (September, 2000).
- U.S. DOT Secretary's Award for "creating a series of Performance Plans and a Performance Report acclaimed by many as the best in government." The award was shared by the GPRA Report team (July, 2000).
- Full funding as invited speaker at the conference on Applied Stochastic Methods and Data Analysis-99, Lisbon, 1999, provided by the Classification Society of Portugal (CLAD).
- Full funding as invited speaker at the Large Data Sets Conference, May 1999, provided by the Institute for Industry Productivity, University of Waterloo.
- Funded participation in the 1994 Conference on Human Rights Data Bases, Thailand, December 1994, provided by HURIDOCS (Switzerland).
- Funded participation in the CBMS Conference on *Modern Computer Intensive Methods for Exploring and Modeling Multivariate Data*, in Washington, D.C., June 12-16, 1990.
- National Science Foundation Postdoctoral Research Fellowship in the Mathematical Sciences, National Science Foundation, Washington, D.C., 1984-1986.
- Biometrics Society award for best student paper, 1984.
- Cunningham Fellowship for statistical research, Virginia Polytechnic Institute and State University, 1982-1983.

EDITORIAL WORK:

- Editor of the *Journal of the American Statistical Association*, Applications and Case Studies; and Coordinating Editor of the *Journal of the American Statistical Association*. 2007-2009.
- Associate Editor, *American Mathematical Monthly*, 2007-2009.
- Associate Editor, *Electronic Journal of Statistics*, 2007-2009.
- Editorial Board, *Journal of Transportation and Statistics*, 2005-2006.
- Editor-in-Chief of *Classification, Cluster Analysis, and Data Mining*, the proceedings of the 2004 meeting of the International Federation of Classification Societies Springer-Verlag, Berlin (with L. House, P. Arabie, F. R. McMorris, and W. Gaul).
- Associate Editor for the *Journal of the American Statistical Association*, Applications and Case Studies section, 2003-2006.
- Associate Editor for *Statistical Methodology*, 2004-2006. Co-Editor, with Grace Shieh, of a special issue on bioinformatics.
- Member of the Editorial Board of the ASA-SIAM Series in Statistics and Applied Probability (American Statistical Association and Society for Industrial and Applied Mathematics), 2003-2006.
- Associate Editor of *Chance*, 2001-2006. Arranged special issues on authorship attribution, proteomics, and counterterrorism.
- Editor-in-Chief of the *Journal of Transportation and Statistics*, 2000-2001. Associate Editor of this journal from 1999-2000.
- Member of the *CSNA Service* Editorial Board, 1996-2002.
- Associate Editor of the three update volumes of the *Encyclopedia of Statistical Sciences*, 1995-1999.

GRANTS:

- PI on NSF Grant DMS-0907439 to study network growth in the Wikipedia (\$150,000), 2009-2010.
- co-PI on NSF/DTRA Grant DMS-0914906 to study syndromic surveillance for bioterrorist threats (\$387,428), 2009-2011.
- PI for DARPA Grant to study adversarial risk analysis in convoy routing in Baghdad (\$125,850), 2009-2010.
- PI for NSF Travel Grant to support graduate students at the Isaac Newton Institute workshops (\$15,000).
- PI for AT&T grant on “Models for Dynamic Network Data,” 2006 (\$50,000).
- Principal investigator for NSF Proposal on “Social Metrics in the Katrina Aftermath,” REC-0555934/REC-0652464, 2005-2006 (total \$115,000; \$40,796 at Duke).

- Co-investigator on, and author of, NSF proposal on “Dynamics for Social Networks: Comparing Statistical Models with Intelligent Agents,” DMS-0437183/SES-0437239, 2005-2006, awarded to NISS (\$388,000).
- Co-PI on NSF proposal “SCREMS: Distributed Environments for Stochastic Computation,” 7/1/04-6/30/07, DMS-0422400, awarded to ISDS (\$183,000).
- Principal investigator on NIST Competency Award on “Bayesian Metrology,” 1998-2003 (\$2 million).
- NSF Conference Grant for the Classification Society of North America, DMS-9805117 (with P. Bryant and J. Rohlf), 1998 (\$15,000).
- PI on NIST Competency Award on “Statistical Issues in Software Reliability,” 1997-2002 (\$500,000).
- Co-PI on DARPA grant on “INVICTUS: Detection of Unanticipated and Anomalous Events in High-Dimensional, Evolutionary Environments,” F30602-96-1-0349 (with Roy Maxion and Daniel Sieworeck, Computer Science), 1996-2002 (\$1,483,333).
- PI on NSF grant on “Discovering Information in Large, High-Dimensional Databases,” IRI-9224544 (with Roy Maxion, Computer Science, and Andrzej Strojwas, Electrical & Computer Engineering), 1993-1998 (\$450,000).
- Co-PI on NSF grant on “Statistical Methods for Conformance Tests in Geometric Tolerancing,” DDM 9201898 (with Tom Kurfess, Mechanical Engineering) 1993-1995 (\$200,000).
- Co-PI on DARPA grant on “Machine Classification of Seismic Events,” MDA972-92-J1013 (with Roy Maxion, Computer Science) 1992-1993 (\$199,365)
- PI on U.S. Army Innovative Research Grant on “Exact and Asymptotic Bootstrap methodology,” DAAD0404-89-G-0422, 1989 (\$25,000).
- Faculty Development Grant, from Carnegie Mellon University, for research on a biographical survey of eminent Victorians, 1988 (\$10,000).

PROFESSIONAL SERVICE:

- Taught shortcourse on risk analysis, International Statistical Institute meeting, Durban, August 2009.
- Represented the American Statistical Association in visits to Congress, August 2009.
- Member, Mortimer Spiegelman Award Committee, 2009-2011.
- Member, National Academies Transportation Research Board’s Strategic Highway Research Program Technical Coordinating Committee on Safety Research (SHRP-2), 2009-2012.
- Member of the external review committee for George Washington University’s Department of Statistics.

- Member, Advisory Committee on Student Pro Bono Statistics for the American Statistical Association, 2008-2011.
- Member, National Academies Panel to assess NASA’s National Aviation Operational Monitoring Service (NAOMS) project, 2008-2009.
- Member, Federal Advisory Committee (Board of Scientific Counselors, Homeland Security Subcommittee) to the Environmental Protection Agency 2007-2008.
- Member, Scientific Program Committees of NIPS 2008 Workshop on Analyzing Graphs, 2009 meeting of the International Federation of Classification Societies, 2009 meeting of the Classification Society of North America, 2008 meeting of BioSecure, 2008 meeting of the Conference on Business Data Mining.
- Organizer, Quantitative Methods in Defense and National Security Conference, May 2008.
- Co-organizer, Moral Mathematics (a conference on quantitative methods in human rights and development, with Nobel laureate Shirin Ebadi as keynote speaker), with R. Kirk and C. Irving.
- Co-organizer of the Isaac Newton Institute research program on “Statistical Theory and Methods for Complex, High-Dimensional Data,” January-June 2008 (with P. Bickel, P. Hall, and M. Titterington).
- Organizer, SAMSI Workshop on “Risk: Perception, Policies, and Practice,” October 2007.
- Program Chair, Institute of Mathematical Sciences, for the 2007 ENAR meeting.
- Alternate Chair, National Academies Panel on Methodological Improvements to the Department of Homeland Security’s Biological Agent Risk Analysis, 2006-2007.
- Member, nominating committee, International Society for Bayesian Analysis.
- Member, National Academies Advisory Panel to the Department of Homeland Security on Biodefense Analysis and Countermeasures, 2005-2007.
- Chair, organizing committee, Katrina Research Symposium: Social Science Research on the Katrina Aftermath.
- Co-founder, with Jonathan Kurlander, of the Special Interest Group on Statistical Volunteerism within the American Statistical Association
- Chair, organizing committee, for the National Academy of Sciences workshop on Mathematical Models for Network Dynamics.
- Member, Planning Committee for the National Academies panel study on *Defense Modeling, Simulation, and Analysis: Meeting the Challenge*.
- Co-organized, with Bill Shannon and Rob Culverhouse, the joint conference of the Classification Society of North America and the Interface Society, June 2005.

- Successful Nominations. ASA Fellows: Mark Vangel, Harvard and Massachusetts General Hospital; Ashish Sen, Director of the Bureau of Transportation Statistics; Demissie Alemayehu, Professor at Columbia; Nell Sedransk, Director of the Statistical Engineering Division at the National Institute of Standards and Technology; Marianthi Markatou, Professor of Biostatistics at Columbia University; Nancy Spruill, Director of Logistics and Testing at the Department of Defense; Michael Lavine, Duke University; Merlise Clyde, Duke University; Wendy Martinez, Office of Naval Research; Emery Brown, Professor at MIT and Harvard; Jim Filliben, Senior Statistician at the National Institute of Standards and Technology; Bin Yu, University of California at Berkeley; David Dunson, National Institute of Environmental and Health Sciences; Robert Lund, Clemson University; Alyson Wilson, Los Alamos National Laboratory; Dulal Bhaumik, University of Illinois-Chicago; Mark Handcock, University of Washington; Naomi Altman, Pennsylvania State University. Mortimer Spiegelman Award: David Dunson. ASA Best Applied Paper: Zheng, Salganik, and Gelman (2008); Chris Genovese and Larry Wasserman (2005).
- Co-Organized, with Ed Melnick, a workshop on Statistical Issues in Counterterrorism at New York University, Nov. 2004.
- Member of the Advisory Committee for the National Center for Education Statistics survey on “First-Time Beginners in Post-Baccalaureate Education,” run by RTI (9/1/04-1/1/06).
- Chair of the ASA President-Elect’s Committee on Caring (members are Sue Ahmed, Demissie Alemayehu, Murali Haran, Judy Goldberg).
- Member of CATS, the Committee on Applied and Theoretical Statistics at the National Academies, 2003-2006.
- Co-Founder of the ASA Section on Statistics in Defense and National Security (with N. Spruill, R. Fricker, and A. Wilson).
- Chair of the ASA Search Committee to find the 2004-2006 editor of the Review section of the *Journal of the American Statistical Association*.
- Member of the ASA Membership Committee, 2004-2006.
- Co-Chair, with F. R. McMorris, of the 2004 meeting of the International Federation of Classification Societies in Chicago.
- Member of the ASA Risk Section Award Committee, 2003.
- Member of the Panel on Mathematical and Statistical Methods in Counterterrorism, 2002-2003, Army Research Office.
- Program Chair for the Conference on Statistical Issues in Counterterrorism, May, 2003.
- Member of the Scientific Program Committee for the 2004 meeting of COMPSTAT.
- Organized workshop on the role of federal statisticians in counterterrorism, sponsored by the Washington Statistical Society and the Committee on National Statistics of the National Academies.
- Member of the review panel on statistical standards for the National Center for Educational Statistics.

- Chair of the ASA Search Committee to find the 2002-2004 editor for *The American Statistician*—we selected James Albert.
- Chair of the Washington Statistical Society’s ASA Fellows Committee, 2001-2003, to select nominees from the federal statistics community. We nominated five candidates for 2002, and nine for 2003.
- Member of the Transportation Research Board Committee on Statistical Methodology and Statistical Computer Software in Transportation Research, 1999-2002.
- American Statistical Association designated media contact on transportation safety and mobility, 2001-2004.
- Program Organizer for FCSM 2001, the biennial conference of the Federal Committee on Statistical Methodology.
- Member of the Committee on Statistical Methodology and Computer Software in Transportation Research (for the Transportation Research Board), 2000-2002.
- Member of the 1999 NSF Panel to evaluate Small Business Innovative Research proposals.
- Member of the 1998 NSF Panel on Probability and Statistics.
- Taught invited shortcourse for the KDD-98 conference, Aug. 1998.
- Member of the Program Committee and Local Organizer for the Sept. 1998 meeting of the Drug Information Association meeting on validity of software in clinical trials.
- Program Chair for the 1997 meeting of the Classification Society of North America in Washington, D.C.
- Organizer of invited paper sessions at the International Statistical Institute Meeting (Seoul, 2001 and Sydney, 2005), COMPSTAT’04 (Prague), the Joint Statistical Meetings (Seattle, 2006; Minneapolis, 2005; Toronto, 2004; San Francisco, 2003; New York, 2002; Atlanta, 2001; Indianapolis, 2000; Baltimore, 1999; and Orlando, 1995), the Sixth Conference on Forensic Statistics (Phoenix, 2005), the ASA Winter Meeting (Raleigh, 1995), the Quality and Productivity Research Conference (Raleigh, 2004), ENAR (Pittsburgh, 2004; Tampa, 2003), and the Classification Society of North America (Rutgers, 2006; St. Louis, 2005; Chicago, 2004; Madison, 2002; St. Louis, 2001; Montreal, 2000; Pittsburgh, 1999; Urbana-Champaign, 1998; Denver, 1995; and Pittsburgh, 1993).
- Chair of the ASA Committee on Scientific Freedom and Human Rights, 1994-1996, and member of the committee, 1986-2003.
- Chair of the American Statistical Association’s Committee on Scientific Freedom and Human Rights, 1994-1996.
- Speaker in the COPSS Visiting Lecturer Program, 1994-1996, at Dickinson College and Bucknell University.
- Member of the IMS Committee on New Researchers, 1989-1991.

- Promotion and Tenure Review for faculty at 27 universities. Acadia University, Carnegie Mellon University, Columbia University, George Washington University (twice), Harvard University, Iowa State University (twice), the Johns Hopkins University, North Carolina State University, the Ohio State University, Pennsylvania State University, SUNY-Buffalo, Texas A&M University, Texas Tech University, Tulane University, University of California at Los Angeles, University of California at Santa Cruz (twice), University of Cincinnati, University of Kentucky, University of Louisville, University of Maryland, University of Michigan (three times), University of Minnesota, University of Pittsburgh, University of Tennessee at Knoxville, University of Utah (twice), the University of West Florida, and Yale University.
- Referee (sometimes on multiple occasions): American Association for the Advancement of Science, *American Journal of Public Health*; *American Journal of Epidemiology*; American Mathematical Society; *American Statistician*; *Bioinformatics*; *Biometrics*; *Biometrika*; *Chance*; *DataCritica: The International Journal of Critical Statistics*; Dependable Computing and Communications Symposium-2005; Dependable Systems and Networks Conference; *Encyclopedia of Social Measurement*; *Envirometrics*; *Epidemiologic Reviews*; IEEE Transactions on Dependable and Secure Computing; IEEE Transactions on Information Forensics and Security; the International Federation of Classification Societies; *International Journal of Forecasting*; *International Whaling Commission*; *Journal of the American Statistical Association*; *Journal of Biopharmaceutical Statistics*, *Journal of Classification*; *Journal of Computational Statistics*; *Journal of Information Retrieval*; *Journal of Mathematical Psychology*; *Journal of Mathematical Sociology*; *Journal of Neuropsychopharmacology*; *Journal of Official Statistics*; *Journal of Quality Technology*; *Journal of Risk Analysis*; *Journal of the Royal Statistical Society, Series B*; *Journal of Transportation and Statistics*; *Jurimetrics*; *Methods of Information in Medicine*; *Metrologia*; National Science Foundation; National Sciences and Engineering Research Council of Canada; National Security Agency; *Naval Research Logistics*; *Operations Research*; Performance and Dependability Symposium (PDS'05); *Psychological Methods*; *Psychometrika*; *Risk Analysis*; *Sociological Methods*; Springer-Verlag; *Statistical Science*; *The Statistician*; *Statistics and Probability Letters*; *Symposium on Recent Developments in Tolerancing and Metrology*; *Technometrics*; Transportation Research Board; WERB (Washington Editorial Review Board), Wiley Publishers. Expert review of work done for the Bureau of Transportation Statistics, the Bureau of Alcohol, Tobacco and Firearms, the U.S. Food and Drug Administration, and the Bureau of Justice Statistics.

SERVICE TO DUKE UNIVERSITY:

- Member of Courses Committee of the Arts and Science Council, 2006-2009.
- Colloquium Chair for the Institute of Statistics and Decision Sciences, 2004-2005.
- Representative to the Southern Regional Conference on Statistics, 2003-2006.

SERVICE TO SAMSI:

- Organizer of the workshop on “Risk: Perception, Policies, and Practice” for the SAMSI Risk Program, October 2007.

- Local coordinator for the National Defense and Security program year, 2005-2006.
- Working group leader on social network/intelligent agent models for SAMSI year on latent variables.
- Co-leader of the Data Mining Year program at the Statistics and Applied Mathematical Sciences Institute (SAMSI), 2003-2004 (with A. Karr).
- Member of the SAMSI Local Development Committee, 2003-2007.

SERVICE TO NISS:

- Duke representative to the NISS Affiliates program, 2005-2008.
- Co-organizer of a workshop on risk analysis at Iowa State, October 2005 (with A. Karr and A. Carriquiry).
- Co-organizer of workshop on statistics in metabolomics, July 2005 (with C. Beecher and S. Young)
- Co-organizer of workshop on statistics in national defense, April 2004 (with A. Karr) at the National Institute of Statistical Sciences (NISS).
- Co-organized a workshop on proteomics data, March 2003 (with S. Young).
- Member of the NISS Affiliates Advisory Committee, 2001-2003.

MANAGEMENT TRAINING:

I have completed the following management training courses: The Duke University Course on Financial Accountability for Principal Investigators; Ethical Issues in Non-Medical Human Subjects Research and the Duke Institutional Review Board; Statistical Review in Clinical Trials; Case Studies in Drug Approval: Specifications, Stability, and Statistics; Symposia in Clinical Trials; Computer Security—2002 Update; Diversity Management; Promoting Diversity in the Workplace; Ethical Issues in Drug Regulation; Dealing with the Media; Introduction to the U.S. Food and Drug Administration Regulatory Process; COTR (Contract Officer Technical Representative) Certification; Advanced COTR; Preventing Sexual Harassment; Ethics; FreeBalance (a course in federal accounting practices and principles); Management Problems of the Technical Person in a Leadership Role; Budget, Accounting, and Estimation Techniques in the Federal Government.

SERVICE TO FDA:

- Developed a method for combining statistical risk analysis and game theory to support threat management in the context of bioterrorism.
- Developed a course on Bayesian methods in clinical trials.
- Led project to provide comparative evaluation of four methods for data mining of the Vaccine Adverse Event Reporting Systems (VAERS).
- Started colloquium series on statistical methods in clinical trials at the Center for Biologics Evaluation and Research.

- Lead statistician for review of IND and BLA applications for treatment of DiGeorge's syndrome, Fabry's syndrome, hypertension, and recurrent ovarian cancer (using genetically engineered measles virus).

SERVICE TO DOT:

- Built a research/consulting division in transportation statistics; I supervised thirteen federal employees and three contractors (four GS-15s, five GS-14s, and lesser grades; or nine with a Ph.D. and five with a M.S., most in statistics or economics) and administered a budget of \$5.2 million.
- As acting chief statistician, I was program manager for projects in safety data, data quality, air-traffic delay, motor carrier safety, racial profiling, and additional initiatives.
- Head, U.S. delegation to the United Nations Working Party on Transport Statistics.
- Started program to fund up to \$500,000 in transportation statistics research each year.
- As Editor-in-Chief of the *Journal of Transportation and Statistics*, I recruited articles and associate editors to strengthen the statistical content of the publication.
- Organized invited sessions on transportation statistics at the Joint Statistical Meetings in 2000 and 2001, and at the Spring Research Conference in 2000.
- Advised U.S. D.O.T. lawyers on statistical issues that affect agency work.
- Organized workshop on statistical issues in the Government Performance Results Act, and helped to secure the Department of Transportation's standing as a leader in performance management among federal agencies.
- Provided consulting support to the Office of Motor Carrier Safety, the Federal Aviation Administration, the Federal Transit Administration, the Federal Highway Administration, and various groups within the Bureau of Transportation Statistics.
- Supported projects to improve the quality of safety data statistics, establish an intermodal transportation database, perform the ATS/NPTS surveys, and ensure accurate information in the DOT performance measures report to Congress.
- Represented the Bureau of Transportation Statistics to COPAFS, FCSM, CATS, and other federal and professional committees.

SERVICE TO NIST:

- Organized conference on Computerized System Reliability in Clinical Research, held at NIST on September 28-29, 1998 (with Gene Miluk, Software Engineering Institute and William Woods, Neuroclinical Trials Center).
- Won competency funding for Bayesian Metrology (with Hagwood, Kacker, Levenson, and Vangel).
- Gave statistical certification of the DoD draft lottery, June 1998 (with Gill and Levenson).

- Chair of the Colloquium Committee for the Statistical Engineering Division.
- Led development team on NAIIVE (Network Anomaly/Intrusion Visualization and Exploration), Sept. 1997-Dec. 1998.
- Organizer of the NIST Workshop on Visualization and Testing in Intrusion Detection, Nov. 24, 1997.
- Won competency funding for Statistical Methods for Software Testing (with Rosenthal and Kuhn).

SERVICE TO CARNEGIE MELLON UNIVERSITY:

- Colloquium Chair for Department of Statistics, Carnegie Mellon University, 1987-1989 and Spring 1994, for the Bayesian Computation Seminar series, 1987-1988, and for the Industrial Statistics Seminar series 1989-1992.
- Established the DeGroot Library for the Department of Statistics, and directed statistics acquisitions for the university library from 1987 to 1997.
- Service on the Curriculum Reform Committee in 1989, the University Task Force on Foreign Graduate Students, 1988-1989, the University Task Force on Foreign Visitors, 1989-1990, the Faculty Senate, 1989-1991, and the Honor Code Task Force of the Commission on Undergraduate Education, 1991-1992, and the Undergraduate Academic Advising Award Committee, 1994-1996.
- Co-Investigator on 2002 SCREMS proposal.
- Chair of the Student Affairs Committee of the Faculty Senate, 1990-1991, and the Metacurriculum Task Force of the Commission on Undergraduate Education, 1991-1992.

TEACHING:

Duke Courses: Introduction to Statistics (F2003; F2004; S2005; F2005; S2006; F2006). Graduate course in Data Mining (F2003, F2007). Senior undergraduate course on Causal Inference (F2007). Graduate Seminar (F2007). Graduate course on Statistical Inference (S2008). Undergraduate topics course (S2008).

FDA Courses: Bayesian Methods in Clinical Trials (2002).

DOT Courses: Exploratory Data Analysis (2001). Introduction to Statistics (2000).

NIST Courses: Shortcourse on New Wave Methods in Nonparametric Regression (1998). Introduction to Statistics for Information Technology (1998). Bayesian Metrology (1998). Statistical Uncertainty: Classical and Bayesian Methods (1998) (with Mark Vangel and Mark Levenson).

Ph.D. Level Courses at Carnegie Mellon: Advanced Nonparametrics (using Hettmansperger (1984) and Randles and Wolfe (1977)), Computer-Intensive Statistical Methods (using papers on the bootstrap, ACE, AVAS, MARS, etc.), and Advanced Topics in the Linear Model (using Arnold (1981) and Christensen (1987)).

Master's Level Courses at CMU and Cambridge: Data Mining (Lent term, 2008). In 1986-87: Intermediate Statistics (using Casella and Berger, 1990, and, less recently, Bickel and Doksum, 1977), Discrete Multivariate Analysis (using Agresti, 1990, and Whittaker, 1990), Linear Models and Experimental Design (several books, including Graybill (1976), Lindman (1992), Joshi (1987)), Multivariate Analysis (using Morrison (1990)), Survival Analysis (using Miller (1981)), and Statistical Practice, which introduced graduate students to statistical consulting through the analysis of a sample of real problems.

Undergraduate Courses at CMU and Cambridge: Random Processes for Engineers; Quality Control; Statistics and Journalism; Samples, Surveys, and Society; Introductory Statistics for English majors (Freedman, Pisani, Purves, and Adikhari (1992)), engineers (Hogg and Ledolter (1987)), and management majors (Mendenhall (1987) and Moore and McCabe (1992)). The latter course has been taught five times; typical enrollments are 220 students.

Undergraduates at Carnegie Mellon rate teaching on a five-point scale; my average scores range between 3.87 and 4.60. I was twice nominated for the Elliot Dunlap Smith Teaching Award.

STUDENTS SUPERVISED:

Eric Vance (Statistics); his Ph.D. was obtained in June 2008; his dissertation was entitled *Statistical Methods for Dynamic Network Data*.

Ph.D. committee service at Duke University for Rosy Luo, Laura Gunn, Chong Tu, Christine Kohnen, and Jason Duan (Statistics) and Shaorong Chang, Hui Li, and Balaji Krishnapuram (Electrical and Computer Engineering).

Ph.D. committee service at Carnegie Mellon University for Kert Viele (nonparametric Bayesian methods), Wilfredo Palme (long-range dependency), Mary Santi (the Rasch model), Alan Rossman (paired comparisons), Sung Ho Kim (tree-structured inference), Mario Peruggio (fractals), Scott Berry (optimal search), and Suraj Rao (feed-forward control for integrated circuit manufacture) in Statistics. I've also served on Ph.D. committees for Michael Palmquist in English, Roemer Alfelor in Civil Engineering, Jeff Hanson in Electrical and Computer Engineering, Woncheol Choi in Mechanical Engineering, Robert Olszewski in Computer Science, Larry Xue in Statistics at the University of Pittsburgh, and William Shannon in the University of Pittsburgh School of Public Health.

Diploma research supervision at Cambridge for Benjamin Brown (testing fertility models with 18th century demographic records), Jonathan Jedwab (spatial models for the spread of Chagas' disease), and James Palmer (analysis of pharmacokinetic data).

Master's degree supervisor at Duke for Betsy Enstrom (Statistics) and Jimmy Teng (Economics). Master's committee service at Carnegie Mellon for Roemer Alfelor in Civil Engineering (detecting railroad track defects); for Barbara Hanusa in the University of Pittsburgh School of Public Health (comparing CART and logistic regression for predicting syncope); and for Guoxian Zhang in the Duke University Department of Mechanical Engineering and Materials Science.

Undergraduate honors thesis supervision for Kert Viele (statistical spacings) and Patrick Aboyou (forecasting student performance from admissions data). Co-direction of undergraduate

senior honors theses for Katy Rashid (spatial distribution of the Irish cholera epidemic, 1832-1834) and Michael Kenny (multimodality and time series structure in the chronology of the establishment of utopian communities in the United States).

PROFESSIONAL ORGANIZATION MEMBERSHIPS:

American Statistical Association; Biometrics Society (ENAR); Classification Society of North America; INFORMS; Institute of Mathematical Statistics; Interface; International Chinese Statistical Association; International Society for Bayesian Analysis; International Society for Business and Industrial Statistics; International Statistical Institute; Mathematical Association of America; Royal Statistical Society.

CONSULTING EXPERIENCE:

- Consulting for Denver Health and Hospital Authority.
- Miscellaneous consulting through the Gerson Lerhman Group for Warburg Pincus, the Parthenon Group, and others.
- Consulting on models for drug abuse trends to Purdue Pharma, LLP.
- Legal consultant to the District Attorney of Alabama, to the law offices of Williams & Connolly, to Bruce Hake on factors affecting INS appeal hardship appeal decisions, and to Karen Breslin, attorney, regarding the Denver Pit Bull ordinance.
- Academic consultant to the Duke community on projects in teaching metrics, social networks, disease models, cross-national study of human rights data, and others.
- Consultant to the Transportation Research Board of the National Academies.
- Consultant to Metabolon, Inc., and member of its Scientific Advisory Panel.
- Consultant to Research Triangle Institute on statistics in counterterrorism.
- Consultant to Roy Maxion at Carnegie Mellon on statistical issues in computer security.
- Advised Human Rights Watch and the International Criminal Court on statistical properties of their proposed rules for electing judges to the court, so as to ensure a level field for women and third world representatives.
- Various consulting projects at DOT. These include the assessment of disparate impact of baggage security procedures upon minorities for the FAA, power analysis for the FHWA and BTS on the ATS/NPTS survey, survey design work for the Office of Motor Carrier Safety, and support for different DOT administrations in producing the annual performance measures (GPRA) report.
- DARPA Computer Security Program consultant on pattern recognition tools applied to discovery of masqueraders.
- Many consulting projects at NIST, mostly in the Information Technology Laboratory. Projects included assessment of the performances of random number generators and document retrieval systems, building a visualization tool to support use of intrusion detection packages that monitor computer security, and the development of statistical methods for software conformance testing.

- Maryland State Teacher's Association (statistical review of validity and reliability of MS-PAP, the Maryland State Performance Assessment Program).
- Academic consulting for the Carnegie Mellon community: work for faculty, students, and staff in English, history, social and decision sciences, psychology, biology, architecture, computer science, chemical engineering, the business school, mechanical engineering, civil engineering, the university administration, and many other departments.
- Consultant to Aspen Systems Corporation, June 1996-October 1996.
- Consultant with the Neonatal Sleep Laboratory at Magee Women's Hospital, Pittsburgh, October 1991-present.
- Consultant with PPG Industries, Inc., June 1992; Sept. 1995; April, 1996.
- Consultant to Wesco, Inc., June-August 1995.
- Consultant with the Center for Drug and Alcohol Abuse Research, Western Psychiatric Institute and Clinic, Pittsburgh, March 1990-March 1995.
- Consultant for the Statistical Center for Quality Improvement; I was the SCQI's chief consultant to the Software Engineering Institute, two divisions of PPG Industries, Inc., and Alcoa, September 1988 - May 1993.
- Consultant to IBM, April 1991-Sept. 1991.
- Consultant for Heinz, Inc., January-June 1990.
- Consultant for DelMonte Foods, Inc., July-August 1986.
- Consultant for the Virginia Polytechnic Institute and State University's Statistical Consulting Laboratory, June 1983 - June 1984 and August 1979 - August 1982.

INVITED TALKS:

- Man Institute, Oxford University, September 2009.
- Keynote on Computational Advertising, International Society of Business and Industrial Statistics, Stellenbosch, August 2009.
- International Statistical Institute, Durban, August 2009.
- Joint Statistical Meetings, Washington, D.C., August 2009.
- Keynote on ABMs, Classification Society, St. Louis, June 2009.
- Games, Decisions, and Risk Conference, George Washington University, May 2009.
- Behavior and Ecology Colloquium Series, Biology Department, Duke, April 2009.
- International Biometric Society, Hannover, March 2009.
- New Researchers Confernece, San Antonio, March 2009.
- Radcliffe Networks Conference, Boston, February 2009.

- National Institute of Environmental and Health Sciences, Research Triangle Park, January 2009.
- Department of Statistics Colloquium Series, University of Missouri, November 2008.
- Algorithms Workshop, DTRA/NSF, Baltimore, November 2008.
- ACAS Conference, Virginia Military Institute, October 2008.
- Yahoo! Research Group, Santa Clara, October 2008.
- Department of Biostatistics Colloquium Series, University of North Carolina at Chapel Hill, October 2008.
- Virginia Tech Colloquium Series, Blacksburg, September 2008.
- Naval Postgraduate School, Monterey, August 2008.
- Joint Statistical Meetings, Denver, August 2008.
- Sloan-Kettering Institute, June 2008.
- Classification Society of North America, June 2008.
- Interface Meeting, May 2008.
- RTI Colloquium, May 2008.
- HEC, Montreal, May 2008.
- Harvard University Biostatistics Colloquium, April 2008.
- Ninth Annual Troy University Information Technology Colloquium, April 2008.
- Centers for Disease Control, March 2008 (two talks).
- University of Georgia, March 2008.
- Kansas Chapter of the American Statistical Association, March 2008.
- Denver Chapter of the American Statistical Association, March 2008.
- The Open University, March 2008.
- University of Edinburgh, February, 2008.
- University of Southampton, February, 2008.
- Statistical Laboratory, University of Cambridge, February, 2008.
- Isaac Newton Institute, February 2008.
- University of Durham, January 2008.
- University of Illinois at Chicago, September 2007.
- International Committee on Statistical Methods in Risk Analysis, Lisbon, August 2007.

- International Statistical Institute, Lisbon, August 2007.
- International Society for Business and Industrial Statistics, Azores, August, 2007.
- International Conference on the Frontiers of Statistics: High Dimensional Data Analysis, Kunming, China, August 2007.
- International Chinese Statistical Association, Raleigh NC, June 2007.
- Flint Math Circle, Kettering University, Flint MI, May 2007.
- Virginia Academy of Sciences, James Madison University, May 2007.
- AAAS/WSS Human Rights Symposium, Washington D.C., May 2007.
- MSRI Statistical Computation in Education Workshop, Berkeley, May 2007.
- Statistics Day, University of Maryland at Baltimore County, April 2007.
- ASA Delaware Chapter, Dover, April 2007.
- Barnett Lecture, University of Cincinnati, April 2007.
- Katrina Recovery Conference, New Orleans, April 2007.
- RAND Shortcourse, Santa Monica, April 2007.
- ENAR Invited Panel, Atlanta, March 2007.
- Knowledge Discovery Conference, Sapporo, Japan, March 2007.
- ASA Florida Chapter, Pensacola, February 2007.
- Quantitative Methods in National Defense, Arlington, January 2007.
- INFORMS Conference, Pittsburgh, November 2006.
- Katrina Research Conference, Tulane, November 2006.
- Third Statistics Symposium, George Washington University, October, 2006.
- Syndromic Surveillance Conference, Baltimore, October, 2006.
- Stern School of Business, New York University, October, 2006.
- Carnegie Mellon Colloquium Series, September, 2006.
- ASA Career Development Seminar, Seattle, August 2006.
- International Federation of Classification Societies, Ljubljana, Slovenia, July 2006.
- Workshop on Authorship Attribution, DIMACS, June 2006.
- Statistical Society of Canada, June, 2006.
- Interface Society Meeting, Pasadena, CA, May 2006.
- Shortcourse on Data Mining, Classification Society of North America, Rutgers, May, 2006.

- Workshop on New Ideas in Survey Methodology, April, 2006.
- Colloquium, Tulane University, March, 2006.
- International Conference on Industrial Statistics, Lima, January, 2006.
- Colloquium, St. Olaf's College, December, 2005.
- Risk Analysis in Complex Systems, Iowa State University, October, 2005.
- Colloquium, Virginia Polytechnic Institute, October, 2005.
- Colloquium, Pennsylvania State University, September 2005.
- American Association of Public Opinion Research/Washington Statistical Society, September 2005.
- Pennsylvania State University, September 2005.
- American Statistical Association, Minneapolis, August 2005.
- Shortcourse on Data Mining, SAMSI, July 2005.
- Spring Research Conference, Park City, Utah, May 2005.
- Census Data for Transportation Planning, Irvine, May 2005.
- Shortcourse on Data Mining, University of Louisville, May 2005.
- ENAR, Austin, March 2005.
- Sixth International Conference on Forensic Statistics, Phoenix, March 2005.
- Shortcourse on Data Mining, University of Peradeniya, January 2005.
- International Conference on the Future of Statistical Theory, Practice, and Education, Hyderabad, December 2004.
- Statistical Issues in Counterterrorism Workshop, Stern School of Business, New York University, November 2004.
- Department of Biostatistics, Columbia University, November 2004.
- Workshop on data mining, the Fields Institute, Toronto, October 2004.
- Plenary talk, Army Conference on Applied Statistics, October 2004.
- COMPSTAT'04, Prague, August 2004.
- Social Sciences Research Institute, Duke University, September 2004.
- Shortcourse on data mining for the Joint Statistical Meeting, and presentation at the invited SAMSI session, Toronto, August, 2004.
- International Federation of Classification Societies, Chicago, July 2004.
- SIAM Annual Conference, Portland, July 2004.

- NCSL International, Salt Lake City, July 2004.
- WNAR, Albuquerque, July 2004.
- Southern Research Conference on Statistics, Roanoke, June 2004.
- Interface Conference, Baltimore, May 2004.
- Spring Research Conference, Gaithersburg, May 2004.
- ENAR, Pittsburgh, March 2004.
- Operations Research and Statistics Meeting, Santa Fe, January 2004.
- Roger Herriot Address at the Washington Statistical Society, November, 2003.
- RTI Fellows Symposium, Research Triangle Park, November 2003 (on Homeland and Health Security).
- M2003 Conference on Data Mining (organized by SAS), Las Vegas, October 2003.
- Joint Statistical Meetings Introductory Overview Talk (on transportation statistics), San Francisco, August 2003.
- JISS-2003 (Joint International Summer School) shortcourse on data mining, Lisbon, July 2003.
- Quality and Productivity Research Conference, Yorktown Heights, May 2003.
- George Washington University Colloquium Series, April 2003.
- ENAR Conference, Tampa, April 2003.
- DIMACS/Mitre/NSF Workshop on Disease Modeling and Prediction, McLean, March 2003.
- Interface Meeting, Salt Lake City, March 2003.
- NISS Proteomics Workshop, Research Triangle Park, February 2003.
- FDA Colloquium Series, Rockville, December 2002.
- Goldenhelix Conference on Statistical Methods in Microarray Analysis, Big Sky, Montana, September, 2002.
- Joint Statistical Meetings, New York, August 2002.
- Centers for Disease Control, Atlanta, August 2002.
- Los Alamos Statistics Division Colloquium, July 2002.
- DIMACS Symposium on Mathematical Science Methods for Deliberate Release of Biological Agents, New Brunswick, June 2002.
- C. Warren Neel Conference on Data Mining, Knoxville, June 2002.
- University of Naples, Italy, May 2002.

- DIMACS Workshop on Computational and Mathematical Epidemiology, March 2002.
- Committee on Applied and Theoretical Statistics Workshop on Methods for Monitoring the Safety of Medical Products, Washington D.C., December 2001.
- Information Quality Conference, Baltimore, October, 2001.
- Food and Drug Administration Colloquium Series, Rockville, September 2001.
- International Statistical Institute, Seoul, August 2001.
- Conference on Performance Measurement in Government, June 2001.
- Washington Statistical Society, May 2001.
- Institute of Transportation Engineers, Princeton University, May 2001.
- Performance Institute at Gallaudet University, April 2001.
- Alcohol, Tobacco, and Firearms Performance Workshop, January 2001.
- Johns Hopkins University School of Public Health Colloquium Series, November 2000.
- Washington Statistical Society, Bureau of Labor Statistics, November 2000.
- The Performance Institute Workshop on the Government Performance Results Act, Washington, D.C., September 2000.
- North American Travel Monitoring Exhibition and Conference, Madison, Wisconsin, August 2000.
- Workshop on Consensus Methods in Phylogeny, Namur, Belgium, July 2000.
- Joint Research Conference 2000 (American Society for Quality Control, Institute of Mathematical Statistics, and American Statistical Association Section on Physical and Engineering Sciences), Seattle, June 2000.
- Columbia University Workshop on Model Selection And The Bootstrap, April 2000.
- University of Maryland Department of Mathematics Colloquium Series, April 2000.
- National Academy of Public Administration, Washington, D.C., March, 2000.
- George Washington University Department of Statistics Colloquium Series, March 2000.
- Washington Statistical Society, Bureau of Labor Statistics, February, 2000.
- Fifth Army Conference on Applied Statistics, West Point NY, October 1999.
- Applied Stochastic Models and Data Analysis-99, Lisbon, Portugal, June 1999 (invited talk and shortcourse).
- 16th IEEE Instrumentation and Measurement Conference, Venice, May 1999.
- University of Waterloo IIQP Conference on Large Data Sets, May 1999.
- George Mason University Statistics Colloquium, March 1999.

- Drug Information Association conference on software validity in clinical trials, September 1998.
- Conference on the Interface of Computer Science and Statistics, May 1998.
- University of Maryland at Baltimore County Colloquium Series, April 1998.
- University of Waterloo IIQP Colloquium Series, November 1997.
- Shortcourse on Nonparametric Regression, at the annual meeting of the Classification Society of North America, June 1997.
- SRI Intrusion Detection Workshop, July 1997.
- DIMACS Workshop, Rutgers University, May 1997.
- Department of Mathematics Colloquium Series, Bucknell University, November 1996.
- Department of Mathematics Colloquium Series, University of Louisville, November 1996.
- Educational Testing Service, October 1996.
- Joint Research Conference on Statistics in Quality, Industry, and Technology, NIST, May 1996.
- American Association for the Advancement of Science, March 1996.
- Queens University Statistics Colloquium Series, November 1995.
- University of Toronto Statistics Colloquium Series, November 1995.
- Dickinson College Colloquium Series, October 1995.
- Winter ASA Meeting, Raleigh, January 1995.
- Annual Meeting of HURIDOCS, Thailand, December 1994.
- Annual Meeting of the ASA, Section on Physical and Engineering Sciences, Toronto, August 1994.
- Annual IMS Meeting, Toronto, August, 1994 (Discussant for the Smoothing and Maximum Likelihood Methods session.)
- Annual Meeting of the Classification Society of North America, June 1993.
- Department of Statistics Colloquium Series, Duke University, October 1992.
- Department of Statistics Colloquium Series, Virginia Polytechnic Institute and State University, October 1992.
- Industrial Statistics Workshop, NISS, November 1991.
- School of Urban and Public Affairs, Carnegie Mellon University, September, 1991.
- Information Science Colloquium Series, George Mason University, June 1991.
- Colloquium Series, NIST, June 1991.

- Department of Statistics Colloquium Series, Harvard University, April 1990.
- American Society for Quality Control Winter Conference, Pittsburgh, March 1990.
- Department of Industrial Engineering and Operations Research, University of Pittsburgh, September 1990.
- Department of Sociology, University of Pittsburgh, October 1990.
- Department of Mathematics and Statistics, University of Pittsburgh, November 1990.
- Department of Mathematical Statistics Colloquium Series, University of Bath, May 1987.
- Gregynog Conference on Mathematical Statistics, April 1987.
- Cambridge Statistical Methods Discussion Group, April 1987.
- Imperial College Conference on Bootstrap Methods in Statistics, March, 1987.
- Department of Statistics Colloquium Series, University of Sheffield, November 1986.
- AAAS symposium on “A Review and Assessment of Human Rights Indices,” May 1986.
- Department of Statistics Colloquium Series, University of California, Berkeley, February 1986.
- Annual Meeting of the ASA, Section on Statistics and Social Issues, Reno, August 1985.
- Neyman Colloquium Series, Department of Statistics, University of California at Berkeley, September 1984.