

Brani Vidakovic
Professor of Statistics
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I. Earned Degrees

- 7/92 **Ph.D. in Statistics**, Purdue University.
Research Area: Bayes-Minimax Statistical Inference.
- 5/81 **Master of Science in Probability Theory**, University of Belgrade.
Specialization: Algorithmic Complexity and Pseudo-Randomness.
- 6/78 **Bachelor of Science, Mathematics**, University of Belgrade.

II. Employment

- 7/05–present **The Wallace H. Coulter Department of Biomedical Engineering, Georgia Tech.**, Atlanta, GA.
Professor of Biostatistics
- 9/07–present **Health Systems Institute, Georgia Tech.**, Atlanta, GA.
Director, Center for Statistics and Data Management
- 4/04–7/05 **School of Industrial and Systems Engineering, Georgia Tech.**, Atlanta, GA.
Professor of Statistics
- 8/00–4/04 **School of Industrial and Systems Engineering, Georgia Tech.**, Atlanta, GA.
Associate Professor of Statistics
- 4/00–8/00 **Institute of Statistics and Decision Sciences, Duke University**, Durham, NC.
Associate Professor of Statistics and Decision Sciences with Tenure
- 7/92–4/00 **Institute of Statistics and Decision Sciences, Duke University**, Durham, NC.
Assistant Professor of Statistics and Decision Sciences

III. Teaching

A. Individual Student Guidance

PhD advisor: Current

- Seonghye Jeon, ISyE, Georgia Tech, May 2008-Present. Area: Applications of Wavelets in Bioinformatics.
- Sofia Espinoza, ISyE, Georgia Tech, December 2008-Present. Area: Statistical Modeling of Efficiency of Health Systems.
- Hin-Kyeol Woo, ISyE, Georgia Tech, December 2007-Present. Co-Advisorship with Dr J.C. Lu. Area: Bioinformatics.
- Xavier Le Faucheur, EE, Georgia Tech, December 2006-Present. Co-Advisorship with Dr Allen Tannenbaum. Area: Statistical Inference in Non-standard Wavelet Domains and Applications in

Medicine.

- Kichun Sky Lee, ISyE, Georgia Tech, August 2006–Present. Research on the Interface of Statistical Multiscale Methods, Signal Processing, and Biostatistics.
- Willie Brad Jones, Georgia Tech, December 2007–Present. Research on Statistical Modeling in Nutrition and Health Wellbeing.

PhD advisor: Graduated

- Leanne Metcalfe, BE, Georgia Tech, Graduated in August 2008. Thesis: *Bayesian Predictive Models in Determining the Health Burdens in Employed Populations*.
- David Huang, ISyE, Georgia Tech, Co-Advisors with Paula Edwards, Graduated in May 2008. Thesis: *A New Tool to Measure the Relationship between Health-Related Quality of Life and Workforce Productivity*.
- Ilya Lavrik, ISyE, Georgia Tech, Graduated in November 2005. Thesis: *Novel Wavelet-Based Statistical Methods with Applications in Classification, Shrinkage, and Nano-Scale Image Analysis*.
- Shi Bin, ISyE, Georgia Tech, Graduated in May 2005. Thesis: *Multiscale Statistical Analysis of Self-similar Process with Applications in Geophysics, Health Informatics and Manufacturing*.
- Woojin Chang, ISyE, Georgia Tech, graduated in August 2002. Thesis in Multivariate Wavelet Shrinkage and Statistical Classification. Now Assistant Professor at Seoul National University, South Korea.
- Aluisio de Souza Pinheiro, *Multi-Resolution Analysis and Applications in Statistics*, Co-Advised with Dr. Chuanshu Li, UNC-Chapel Hill, Graduated in December 1997. Now Professor of Statistics at Universidade Estadual de Campinas, Brasil.

MS advisor

- MS thesis (Dual Program GaTech-Singapore 2003) Choong Ng: *Wavelet-ARMAX Model for Prediction of Air Cargo Traffic*.
- Advisor to 3 Masters students at ISyE, GaTech (non-thesis option)

Member of PhD committee

- Salman Azhar, CS, Duke University, Fall 1993; Arun Balakrishnan, EE, Duke University, May 1994; Fabrizio Ruggeri, ISDS, Duke University, December 1994; Frank Saishi Lee, ISDS, Duke University, February 1997; Yang Chen, ISDS, Duke University, Spring 1997; Jacob Laading, ISDS, Duke University, Spring 1997; Jane Fang Liu, ISDS, Duke University, Spring 2000; Viridiana Lourdes, ISDS, Duke University, Spring 2000;
- Yongsu Kim, ECE, GaTech, November 2000; Borka Milosević, ECE, GaTech, November 2002; Aleksandar Pregelj, ECE, GaTech, December 2003; Myong K. Jeong, ISyE, GaTech, March 2004; Steven Laundry, ISyE, GaTech, May 2004; Tithima Kognakorn, ISyE, GaTech, October 2004; Volkan Cevher, ECE, GaTech, January 2005; Heejong Yoo, January 2005; Brian Sperling, ISyE, GaTech, March 2005; Hongmei Chen, Aerospace Engineering, GaTech, April 2005; Yan Zhang, School of Architecture, GaTech, April 2005; Raymond Mooring, Earth and Atmospheric Sciences, GaTech, April 2005; V. Kathlene Emery, ISyE, GaTech, June 2005; Paul Brooks, ISyE, GaTech, June 2005; Xulei (Sherry) Ni, ISyE, GaTech, November 2005; Jong Phil Kim, ISyE, GaTech, February 2006; Paula Edwards, ISyE, GaTech, April 2006; Demet Batur, ISyE, GaTech, March 2006; Martin Tobias, ECE, GaTech, March 2006; Soner Özgür, ECE, GaTech, April 2006; Dominic Garcia, ISyE, GaTech, April 2006; Ryan E. Mills, Biology, GaTech, April 2006; Chen-Yu Lin, ISyE, GaTech, May 2006; Pelin Pekkün, ISyE, GaTech, August 2006; Rajbabu Velmurugan, ECE, GaTech, March 2007; Onyi Irrechukwu, ME, GaTech, November 2007; Ismail Kasimoglu, ECE, GaTech, November 2007; Milind Borkar, ECE, GaTech, December 2007; Ali Cafer Gurbuz, ECE, GaTech, June 2008; Ji Soo Yi, ISyE, GaTech, June 2008; Shu-Chuan Lin, ISyE, GaTech, August 2008; Zafer Aydin, ECE,

GaTech, August 2008; Joshua Perkel, ECE, GaTech, October 2008;

B. Other Teaching Activities

Courses taught at Belgrade University

- 1979 – 1987. A variety of mathematics, statistics, and programming courses taught at Mechanical Engineering School and School of Mathematics at Belgrade University.

Courses taught at Purdue University

- Introduction to Probability STA 225, Fall 1990.
- Introduction to Statistics (for graduate students) STA 501, Summer 1991, Summer 1992.

Courses taught at Duke University

- STA 110: Statistics and Data Analysis, Fall 1992, Summer 1993, Fall 1993, Spring 1994, Summer 1994, Fall 1994, Spring 1995, Fall 1995, Spring 1996, Fall 1998, and Spring 2000.
- STA 112: Introduction to Applied Statistics, Fall 1992, Spring 1993.
- STA 114/MTH136: Statistics, Spring 1997.
- STA 205: Probability and Measure Theory, Spring 1994.
- STA 213: Introduction to Statistical Methods, Fall 1996.
- STA 214: Probability and Statistical Models, Spring 1998, Spring 1999.
- STA 226: Statistical Decision Theory, Fall 1994.
- STA 242: Applied Regression Analysis, Spring 1993.
- STA 291, 292: Graduate Seminar Courses.
- STA 293, 294: Special Topics in Statistics, Fall 1994, Fall 1995, Spring 1998, Fall 1999.
- STA 395: Readings in Statistical Science, Fall 1998.

Courses taught at Georgia Institute of Technology

- ISyE 2027: Introductory Probability, Summer 2002.
- ISyE 2028: Introductory Statistics, Spring 2001, Fall 2001, Fall 2002, Summer 2003, Fall 2003, Summer 2004, Fall 2004, Spring 2005.
- ISyE 3770: Probability and Statistics for Engineers, Summer 2005.
- ISyE 4699BV; Undergraduate Research Seminar, Spring 2002, Summer 2003, Fall 2003, Spring 2004.
- ISyE 6401: Regression and Design of Statistical Experiments, Summer 2001.
- ISyE 6402: Time Series Analysis, Spring 2003, Spring 2004.
- ISyE 6404: Nonparametric Statistics, Fall 2000, Fall 2002, Fall 2003.
- ISyE 6650: Probabilistic Models, Summer 2002, Summer 2003.
- ISyE 8801: Special Topics: Wavelets with Applications, Spring 2001.
- ISyE 8841: Special Topics: Multiresolution Aspects of Self-Similar Processes, Spring 2002.
- ISyE 8843: Special Topics: Bayesian Statistics, Fall 2004.
- ISyE 8900BV; Graduate Research Seminar, Spring 2002, Fall 2002, Summer 2003, Fall 2003, Spring 2004.
- BIOL 8803 × BMED8803 × ISyE 8843; Special Topics: Bayesian Statistics in Health Systems and Bioinformatics, Fall 2005, Summer 2006, Summer 2007.
- BMED1300: Problem Based Learning in Biomedical Engineering, Spring 2006.
- BMED2300: Elements of BioEngineering Design, Summer 2006.
- BMED2400: BioEngineering Statistics, Spring 2008, Fall 2008.
- BMED2803: Bioengineering Statistics, Spring 2007, Fall 2007.

- BMED8813: Graduate Course in Biostatistics, Fall 2006.

Courses taught at Emory University

- BIOS 503: Introductory Graduate Course in Biostatistics, Fall 2004.
- BIOS 760R: Wavelets in Bioinformatics, Fall 2006.
- BIOS 560R: Applied Bayesian Statistics, Fall 2007.

Courses Developed

- Statistical Modeling in Wavelets, taught as STA 293, 294 at Duke University and ISyE 8801, 8841, 8843 at Georgia Institute of Technology.
- ISyE6420 (also taught as ISyE 8843) Bayesian Statistics for Engineers at Georgia Institute of Technology.
- ISyE8843 × BIOL8803 Bayesian Statistics in Bioinformatics.
- BMED 2400 Bioengineering Statistics.

IV. Scholarly Accomplishments

A. Published Books and Parts of Books

As Author, Coauthor, or Editor

1. BANJEVIC, D. and VIDAKOVIC, B. (1986). *Probability and Statistics, The Problem Book with Solutions*. (In Serbian). Naučna Knjiga, Beograd, 290 pp. Second Edition in 1988.
2. VIDAKOVIC, B. (1999). *Statistical Modeling by Wavelets*. John Wiley & Sons, Inc., New York, 384 pp.
3. MÜLLER, P. and VIDAKOVIC, B. (EDITORS) (1999). *Bayesian Inference in Wavelet Based Models*. Lecture Notes in Statistics **141**, Springer-Verlag, New York.
4. KVAM, P. and VIDAKOVIC, B. (2007). *Nonparametric Statistics for Engineers and Scientists*. John Wiley & Sons, Hoboken, NJ, 420 pp.

As Chapter Author/Coauthor

5. VIDAKOVIC, B. (1998). Wavelet-based nonparametric Bayes methods. In: *Practical Nonparametric and Semiparametric Bayesian Statistics*. Editors Dey, D., Müller, P., and Sinha, D., Springer-Verlag, Lecture Notes in Statistics **133**, 133–155.
6. VIDAKOVIC, B. and MÜLLER, P. (1999). An introduction to wavelets. In: *Bayesian Inference in Wavelet-Based Models*. Editors Müller, P. and Vidakovic, B., Springer-Verlag, Lecture Notes in Statistics **141**, 1–18.
7. MÜLLER, P. and VIDAKOVIC, B. (1999). MCMC methods in wavelet shrinkage. In: *Bayesian Inference in Wavelet-Based Models*. Editors Müller, P. and Vidakovic, B., Springer-Verlag, Lecture Notes in Statistics **141**, 187–202.
8. VIDAKOVIC, B. (2000). Gamma-minimax: A paradigm for conservative robust Bayesians. In: *Bayesian Robustness*. Editors Rios Insua, D. and Ruggeri, F., Springer-Verlag, Lecture Notes in Statistics **152**, 241–259.

9. ANGELINI, C. and VIDAKOVIC, B. (2003). Some Novel Methods in Wavelet Data Analysis: Wavelet Anova, F-test Shrinkage, and Γ -Minimax Wavelet Shrinkage, In: *Wavelets and their Applications*, Editors Krishna, M., Radha, R., and Thangavelu, S. Allied Publishers Ltd, New Delhi, ISBN 81-7764-493-9, pp. 31–45.
10. VIDAKOVIC, B. (2004). Transforms in Statistics, In: *Handbook of Computational Statistics Concepts and Methods, Chapter II.7*. Editors Gentle, J., Härdle, W., and Mori, Y., Springer-Verlag, Heidelberg, ISBN 3-540-40464-3, pp. 199–236.
11. RUGGERI, F. and VIDAKOVIC, B. (2005). Bayesian Modeling in the Wavelet Domain, Chapter 11 in *Handbook of Statistics, Vol. 25, on Bayesian Statistics* (Editors C.R. Rao and Dipak Dey), 315–338.
12. VIDAKOVIC, B. (2005). Entries for Encyclopedia of Statistical Sciences, *Brownian Bridge, Allan's Variance, Anscombe's Data Sets, Biography of Nathan Mantel*. In Second Edition Encyclopedia of Statistical Sciences, Editors Campbell, Balakrishnan, and Vidakovic, Wiley, 2005.
13. MOLONEY, P. K., LEONARD, V. K., SHI, B., JACKO, A. J., VIDAKOVIC, B., and SAINFORT, F. (2005). From Extraneous Noise to Categorizable Signatures: Using Multi-scale Analyses to Assess Implicit Interaction Needs of Older Adults with Visual Impairments, *Lecture Notes in Computer Science*, Volume 3585, 1108 – 1111
14. VIDAKOVIC, B. (2006). Discussion on “Nonparametric Function Estimation using Overcomplete Dictionaries” by M. Clyde and R. Wolpert, pp. 107–112. In Edited Volume of Valencia 8, Oxford University Press.
15. SHI, B., MOLONEY, K., LEONARD, K. V., JACKO, J., SAINFORT, F., and VIDAKOVIC, B. (2007). Multifractal Discrimination Model of High-Frequency Pupil-diameter Measurements. In *Quantitative Medical Data Analysis Using Mathematical Tools and Statistical Techniques*, (D. Hong and Y. Shyr Eds), World Scientific Publications, Singapore.
16. DERADO, G., F. BOWMAN, D., PATEL, R., NEWELL, M., and VIDAKOVIC, B. (2007). Wavelet Image Interpolation (WII): A Wavelet-based Approach to Enhancement of Digital Mammography Images, *Bioinformatics Research and Applications*, Editors Mandoiu and Zelikovsky, *Lecture Notes in Bioinformatics*, 4463, 203–214, Springer-Verlag.
17. DERADO, G., LEE, K., NICOLIS, O., BOWMAN, F. D., NEWELL, M., RUGGERI, F. and B. VIDAKOVIC, B. (2008). Wavelet-based 3-D Multifractal Spectrum with Applications in Breast MRI Images, Eds. I. Mandoiu, R. Sunderraman, A. Zelikovsky, *Lecture Notes in Bioinformatics*, 4983, 281–292, Springer-Verlag, NY.

B. Peer Refereed Publications

18. VIDAKOVIC, B. (1983). Some characteristics of the process measure of the amount of information. *Publications de l'Institut Mathématique N.S.* **33** 235-238.
19. VIDAKOVIC, B. (1985). An effective measure of complexity of binary words. *Matematički Vesnik* **37**, 327–332.
20. STOJANOVIC, S. and VIDAKOVIC, B. (1987). Some properties of the combinational measure of complexity of binary words. *Publications de l'Institut Mathématique. N.S.* **42**, 143-147.
21. VIDAKOVIC, B. (1993). On the efficiency of affine minimax rules in estimating a bounded multivariate normal mean. *Communications in Statistics - Simulation and Computation* **22** 3, 655-669.

22. VIDAKOVIC, B. (1993). All roads lead to Rome-even in the honeycomb world. *The American Statistician*, **48**, 3, 234–236.
23. VIDAKOVIC, B. and RIOS INSUA, D. (1994). Some efficient simple rules in Γ -minimax estimation. *Communications in Statistics - Simulation and Computation* **23**, 2, 393–414.
24. VIDAKOVIC, B. and DASGUPTA, A. (1995). Lower bounds on Bayes risk for estimating a normal variance: With applications. *The Canadian Journal of Statistics*, **23**, 269–285.
25. NEBEL, E. C. III, LEE J-S., and VIDAKOVIC, B. (1995). Hotel general manager career paths in the United States. *International Journal of Hospitality Management*, **14**, 3-4, 245–260.
26. MUKHOPADHYAY, S. and VIDAKOVIC, B. (1995). Efficiency of linear Bayes rules for a normal mean: Skewed priors class. *The Statistician*, **44**, 3, 389–397.
27. INSUA, D., RUGGERI, F., and VIDAKOVIC, B. (1995). Some results on posterior regret Γ -minimax estimation. *Statistics & Decisions*, **13**, 315–331.
28. VIDAKOVIC, B. (1996). A note on random densities via wavelets. *Statistics & Probability Letters*, **26**, 315–321.
29. VIDAKOVIC, B. and DASGUPTA, A. (1996). Efficiency of linear rules for estimating a bounded normal mean. *Sankhyā A*, **58**, 81–100.
30. KATUL, G. and VIDAKOVIC, B. (1996). The partitioning of attached and detached eddy motion in the atmospheric surface layer using Lorentz wavelet filtering. *Boundary Layer Meteorology*, **77**, 153–172.
31. VIDAKOVIC, B. (1997). Γ -minimax estimation with ordered observations. *Sankhyā A*, **59**, 366–375.
32. DASGUPTA, A. and VIDAKOVIC, B. (1997). Sample size problems in Anova: Bayesian point of view. *Journal of Statistical Planning and Inference*, **65**, 335–347.
33. PINHEIRO, A. and VIDAKOVIC, B. (1997). Estimating the square root of a density via compactly supported wavelets. *Computational Statistics & Data Analysis*, **25**, 399–415.
34. VANNUCCI, M. and VIDAKOVIC, B. (1997). Preventing the Dirac disaster: Wavelet based density estimation. *Journal of Italian Statistical Society*, **6**, 145–159.
35. KATUL, G. and VIDAKOVIC, B. (1998). Identification of low-dimensional energy containing/flux transporting eddy motion in the atmospheric surface layer using wavelet thresholding methods. *Journal of the Atmospheric Sciences*, **55**, 377–389.
36. VIDAKOVIC, B. (1998). Nonlinear wavelet shrinkage with Bayes rules and Bayes factors. *Journal of the American Statistical Association*, **93**, 173–179.
37. VIDAKOVIC, B. (1999). Linear versus nonlinear rules for mixture normal priors. *Annals of Institute of Statistical Mathematics*, **51**, 111–124.
38. CLYDE, M., PARMIGIANI, G., and VIDAKOVIC, B. (1998). Multiple shrinkage and subset selection in wavelets. *Biometrika* **85**, 391–401.
39. VIDAKOVIC, B. and BIELZA LOZOYA, C. (1998). Time-adaptive wavelet denoising. *IEEE Transactions on Signal Processing*, **46**, 2549–2554.

40. KATUL, G., SCHIEDGE, J., KUHN, G., HSIEH, C-I., and VIDAKOVIC, B. (1998). Skin temperature perturbations induced by surface layer turbulence above a grass surface. *Water Resources Research*, **34**, 1265–1274.
41. KATUL, G., GERON, C.D., HSIEH, C.I., VIDAKOVIC, B., and GUENTHER, A. (1998). Active turbulence and scalar transport near the forest-atmosphere interface. *Journal of Applied Meteorology*, **37**, 1533–1546.
42. VIDAKOVIC, B. (1998). On algorithmic complexity, universal priors and Ockham’s razor. *Resenhas de Instituto de Matemática e Estatística da Universidade de São Paulo*, **3**, 4, 359–390.
43. MÜLLER, P. and VIDAKOVIC, B. (1999). Bayesian inference with wavelets: Density estimation. *Journal of Computational and Graphical Statistics*, **7**, 456–468.
44. RUGGERI, F. and VIDAKOVIC, B. (1999). A Bayesian decision theoretic approach to the choice of thresholding parameter. *Statistica Sinica*, **9**, 1, 183–197.
45. VIDAKOVIC, B. and RUGGERI, F. (1999). Expansion estimation by Bayes rules. *Journal of Statistical Planning and Inference*, **79**, 223–235.
46. RIOS INSUA, D. and VIDAKOVIC, B. (2000). Wavelet-based random densities. *Computational Statistics*, **15**, 183–203.
47. PENSKY, M. and VIDAKOVIC, B. (2000). Adaptive wavelet estimator for nonparametric density deconvolution. *Annals of Statistics*, **27**, 2033–2053.
48. TAO, T. and VIDAKOVIC, B. (2000). Almost everywhere convergence of general wavelet shrinkage estimators. *Applied Computational and Harmonic Analysis*, **9**, 72–82.
49. VIDAKOVIC, B., KATUL, G., and ALBERTSON, J. (2000). Multiscale denoising of self-similar processes. *J. Geophys. Res.-Atmos.* **105**, (D22) 27049–27058.
50. KATUL, G., VIDAKOVIC, B., and ALBERTSON, J. (2001) Estimating global and local scaling exponents in turbulent flows using wavelet transformations. *Physics of Fluids*, **13**, 1, 241–250.
51. PENSKY, M. and VIDAKOVIC, B. (2001). On non-equally spaced wavelet regression. *Annals of Institute of Statistical Mathematics*, **53**, 681–690.
52. VIDAKOVIC, B. (2001). Discussion on Antoniadis and Fan “Regularization of Wavelet Approximations” , *J.Amer. Statist. Assoc.*, **96**, 455, 956–958.
53. KATUL, G., LAI, C-T., ALBERTSON, J., SCHÄFER, K., VIDAKOVIC, B., HSIEH, C-I., and OREN, R. (2001). Quantifying the Complexity in Mapping Energy Inputs and Hydrologic State Variables into Land-Surface Fluxes, *Geophys. Res. Lett.* **28**, 17, 3305–3307.
54. VIDAKOVIC, B. and RUGGERI, F. (2001). BAMS Method: Theory and Simulations. *Sankhyā, Series B*, **63**,2 (Special Issue on Wavelets), 234–249.
55. KATUL, G. G., LAI, C-T., SCHAFFER, K., VIDAKOVIC, B., ALBERTSON, J., ELLSWORTH, D., and OREN, R. (2001). Multiscale Analysis of Vegetation Surface Fluxes, *Advances in Water Resources*, **24**, 1119–1132.
56. CHANG, W. and VIDAKOVIC, B. (2002). Wavelet Estimation a Baseline Signal From Repeated Noisy Measurements by Vertical Block Shrinkage, *Computational Statistics and Data Analysis*, **40**, 317–328.

57. KATUL, G., ANGELINI, C., DE CANDITIIS, D., VIDAKOVIC, B. and ALBERTSON, J. (2002). Are the Effects of Large Scale Flow Conditions Really Lost Through the Turbulent Cascade?, *Geophys. Res. Lett.*, **30**, 4, 1164.
58. CHANG, W., KIM, S. and VIDAKOVIC, B. (2003). Wavelet-Based Estimation of a Discriminant Function, *Applied Stochastic Models in Business and Industry*, **19**, 185–198.
59. ARIÑO, M., MORRETIN, P. and VIDAKOVIC, B. (2004). On wavelet scalograms and their applications in economic time series. *Brazilian Journal of Probability and Statistics*, **18**, 37–51.
60. ANGELINI, C. and VIDAKOVIC, B. (2004). Γ -Minimax Wavelet Shrinkage: A Robust Incorporation of Information about Energy of a Signal in Denoising Applications, *Statistica Sinica*, **14**, 103–125.
61. DE CANDITIIS, D. and VIDAKOVIC, B. (2004). Wavelet Bayesian Block Shrinkage via Mixtures of Normal-Inverse Gamma Priors, *Journal of Computational & Graphical Statistics*, **13**, 383–398.
62. ABRAMOVICH, F., ANTONIADIS, A., SAPATINAS, T., and VIDAKOVIC, B. (2004). Optimal testing in functional analysis of variance models. *Int. J. Wavelets, Multiresolution Info. Processing*, **2**, 323–349.
63. SHI, B., VIDAKOVIC, B., KATUL, G., and ALBERTSON, J. (2005). Assessing the Effects of Atmospheric Stability on the Fine Structure of Surface Layer Turbulence using Local and Global Multiscale Approaches. *Physics of Fluids*, **17**, 0545104, 1–12.
64. ANGELINI, C., CAVA, D., KATUL, G., and VIDAKOVIC, B. (2005). Resampling Hierarchical Processes in the Wavelet Domain: A Case Study Using Atmospheric Turbulence. *Physica D: Nonlinear Phenomena*, **207**, 24–40.
65. SHI, B., MOLONEY, K.P., PAN, Y., LEONARD, V. K., VIDAKOVIC, B., JACKO, J., and SAINFORT, F. (2006). Classification of High Frequency Pupillary Responses Using Schur Monotone Descriptors in Multiscale Domains. *Journal of Statistical Computation and Simulation*, **76** 431–446.
66. JEONG, M.K., LU, J.C., HUO, X., VIDAKOVIC, B., and CHEN D. (2006), Wavelet-based Data Reduction Techniques for Process Fault Detection, *Technometrics*, **48**, 26–40.
67. KATUL, G., RUGGERI, F., and VIDAKOVIC, B. (2006). BAMS Filtering and Applications to Denoising Ozone Concentration Measurements, *Journal of Statistical Planning and Inference*, **136**, 2395–2405.
68. MOLONEY, K. P., JACKO, J. A., VIDAKOVIC, B., SAINFORT, F., LEONARD, K. J. and SHI, B. (2006). Leveraging data complexity: Pupillary behavior of older adults with visual impairment during HCI. *ACM Trans. Comput.-Hum. Interact.*, **13**, 376–402.
69. PENSKY, M., VIDAKOVIC, B. and DE CANDITIIS, D. (2007). Bayesian Decision Theoretic Scale-Adaptive Estimation of Spectral Density. *Statistica Sinica*, **17**, 635–666.
70. YI, J.-S., JUNG, Y.-Y., JACKO, J., SAINFORT, F., and VIDAKOVIC, B. (2007). Parallel Wavestrap: Simulating Acceleration Data for Mobile Context Simulator, *Current Development in Theory and Applications of Wavelets*, **1**, 251–272.
71. GRIFFIN, S., OONG, E., KOHN, W., VIDAKOVIC, B., GOOCH, B., BADER, J., CLARKSON, J., FONTANA, M., MEYER, D., ROZIER, G., WEINTRAUB, J., and ZERO, D. (2007). The Effectiveness of Sealants in Managing Carious Lesions, *Journal of Dental Research*, **87**, 169–174.

72. CUTILLO, L., JUNG, Y.-Y., RUGGERI, F., and VIDAKOVIC, B. (2008). Larger Posterior Mode Wavelet Thresholding and Applications, *Journal of Statistical Planning and Inference*, **138**, 3758–3773.
73. LAVRIK, I., JUNG, Y.-Y., RUGGERI, F., and VIDAKOVIC, B. (2008). Bayesian False Discovery Rate Wavelet Shrinkage: Theory and Applications. *Communications in Statistics - Simulation and Computation*, **37**, 1086–1100.
74. ROGATKO, A., GHOSH, P., VIDAKOVIC, B., and TIGHIOUART, M. (2008). Patient-Specific Dose Adjustment in Cancer Clinical Trial Setting. *Pharmaceutical Medicine*, **22**, 6, 345–350.
75. JUNG, Y. Y., PARK, Y., JONES, D., ZIEGLER, T., and VIDAKOVIC, B. (2009). Self-similarity in NMR Spectra: An Application in Assessing the Level of Cysteine, To appear in *Journal of Data Science*.
76. LUND, R., BASSILY, R., and VIDAKOVIC, B. (2009). Testing Equality of Stationary Autocovariances. To appear in *Journal of Time Series Analysis*.
77. NICOLIS, O. and VIDAKOVIC, B. (2009). On Some Properties of Autoregressive Wavelet Coefficients. To appear in *Current Developments in Theory and Applications of Wavelets*.

C. Other Publications

Articles in Peer Reviewed Proceedings

78. VIDAKOVIC, B. (1984). On some properties of the Martin-Löf measure of randomness of finite binary words. *Proceedings of the Conference: Algebra and Logic, Zagreb*, 171–176.
79. VIDAKOVIC, B. (1995). Wavelet transformations as diversity enhancers. *Proceedings of SPIE-International Society for Optical Engineering*, **2569**, 845–857.
80. VIDAKOVIC, B. (1997). Wavelet random variables. *Proceedings of SPIE-International Society for Optical Engineering*, **3169**, 315–327.
81. RIOS INSUA, D. and VIDAKOVIC, B. (1997). Wavelet based random densities. *Proceedings of 6th International Workshop on Artificial Intelligence and Statistics, Fort Lauderdale*, 263–274.
82. RUGGERI, F. and VIDAKOVIC, B. (1996). Bayesian decision theoretic approach to wavelet thresholding: Scale parameter models. *1996 JSM Proceedings, Chicago, USA*.
83. CLYDE, M., PARMIGIANI, G., and VIDAKOVIC, B. (1996). Using Markov chain Monte Carlo to account for model uncertainty, with applications to wavelets. *Proceedings of the 28th Symposium on the Interface: Computing Science and Statistics*.
84. VIDAKOVIC, B. (2001). Wavelet-Based Functional Data Analysis: Theory, Applications and Ramifications. F3399, Proceedings of The 3rd Pacific Symposium on Flow Visualization and Image Processing, Editor T. Kobayashi, ISBN 1-930746-01-6.
85. VIDAKOVIC, B., and LUND, R. B. (2003). Editors Foreword, Special Journal Edition on Wavelets, Applied Stochastic Models in Business and Industry, 19, Volume 3, 169–170.
86. ZHANG, Y., AUGENBROE, G. and VIDAKOVIC, B. (2005). Uncertainty Analysis in Using Markov Chain Model to Predict Roof Life Cycle Performance, Proceedings of International Conference on Durability of Building Materials and Components LYON [France] 17-20 April 2005 TT5-096.

87. MOLONEY, K. P., LEONARD, V. K., SHI, B., JACKO, J. A., VIDA KOVIC, B., and SAINFORT, F. (2005). From Extraneous Noise to Categorizable Signatures: Using Multi-scale Analyses to Assess Implicit Interaction Needs of Older Adults with Visual Impairments, Proceedings of the 10th IFIP TC13 International Conference on Human-Computer Interaction (INTERACT 2005), Rome, Italy, September 12-16, 1108–1111.
88. BEGOVIC, M., DJURIC, P., PERKEL, J., VIDA KOVIC, B., and NOVOSEL, D. (2006). New Probabilistic Method for Estimation of Equipment Failures and Development of Replacement Strategies, Proceedings of the 39th Hawaii International Conference on System Sciences - 2006.
89. LE FAUCHEUR, X., VIDA KOVIC, B., and TANNENBAUM A. (2007). Bayesian spherical wavelet shrinkage: applications to shape analysis. *Proc. SPIE Vol. 6763, 67630G*.
90. BAYER, C. W., GABRAM, S. G., HENDRY, R. J., SELLERS, N., LUND, M. B., THOMPSON, W., VIDA KOVIC, B. and MIZA IKOFF, B. (2008). Breath analysis as a method for breast cancer early detection. *Journal of Clinical Oncology*, 2008 ASCO Annual Meeting Proceedings (Post-Meeting Edition). Vol. 26, No. 15S (May 20 Supplement), 1522-1523.
91. LE FAUCHEUR, X., VIDA KOVIC, B., NAIN, D., and TANNENBAUM A. (2008). Adaptive Bayesian Shrinkage Model for Spherical Wavelet Based Denoising and Compression of Hippocampus Shapes. Proceedings of MICCAI 2008 – 11th International Conference on Medical Image Computing and Computer Assisted Intervention, September 6-10, 2008, 87–97.

Other Articles/Not peer-reviewed

92. VIDA KOVIC, B. (1982). On the process complexity of finite objects. *Saopštenja Mašinskeg Fakulteta, Beograd 1-2*, 45-49.
93. VIDA KOVIC, B. (1983). On a procedure for testing uniformity of distribution of pseudo-random numbers. *Praksa XVII 10*, 36–40.
94. VIDA KOVIC, B. (1984). On a statistical modeling of priority queuing systems with preorientation. *Praksa XIX*, 28–31.
95. VIDA KOVIC, B. (1985). About the sign test from the algorithmic complexity standpoint. *Statistička Revija 3-4*, 289–291.
96. CLYDE, M., PARMIGIANI, G., and VIDA KOVIC, B. (1996). Bayesian strategies for wavelet analysis. In *Joint Newsletter of the Statistical Computing & Statistical Graphics Sections of the American Statistical Association* (Special Issue on Bayesian Function Estimation), **7**, No. 2, 4–9.

Discussion Papers/Technical Reports

97. VIDA KOVIC, B. and KATUL, G. The filtering of ozone concentration measurements in a turbulent air stream using Bayesian models in the wavelet domain. Discussion Paper **98-30**, ISDS, Duke University.
98. VIDA KOVIC, B. and MÜLLER, P. Wavelets for Kids: Tutorial Introduction. Duke University Discussion Paper **94-13**.
99. DASGUPTA, A., RINOTT, Y., and VIDA KOVIC, B. Stopping times related to diagnostics and outliers. Discussion Paper **94-15**, ISDS, Duke University.
100. BURCH, K., CLYDE, M. and VIDA KOVIC, B. A Bayesian design for eco-regional assessment of Minnesota’s lakes. Discussion Paper **94-19**, ISDS, Duke University.

101. GOEL, P. and VIDAKOVIC, B. Wavelet transformations as diversity enhancers. Discussion Paper **95-04**, ISDS, Duke University.
102. VIDAKOVIC, B. and MÜLLER, P. Wavelet shrinkage with affine Bayes rules with applications. Discussion Paper **95-34**, ISDS, Duke University.
103. MA, Y., STRANG, G., and VIDAKOVIC, B. The first moment of wavelet random variables. Discussion Paper **97-10**, ISDS, Duke University.
104. ROSNER, G. and VIDAKOVIC, B. (2000). Wavelet Functional ANOVA, Bayesian False Discovery Rate, and Longitudinal Measurement of Oxygen Pressure in Rats, Technical Report, ISyE, Georgia Institute of Technology.
105. SHI, B., KATUL, G. and VIDAKOVIC, B. (2006). Quantifying the Effects of Atmospheric Stability on the Multifractal Spectrum of Turbulence. Technical Report, ISyE, GaTech.
106. LAVRIK, I. and VIDAKOVIC, B. (2006). Linear Feature Identification and Inference in Nano-scale Images, Technical Report, ISyE, GaTech.
107. CHEN, H., VIDAKOVIC, B., and MAVRIS, D. (2007). Multiscale Forecasting Method Using ARMAX Models, Under revision for: *Technological Forecasting and Social Change*.
108. NICOLIS, O., RAMÍREZ, P., and VIDAKOVIC, B. (2008). 2-D Wavelet-Based Spectra with Applications in Analysis of Geophysical Images. Submitted.
109. RAMÍREZ, P. and VIDAKOVIC, B. (2008). On Bayesian estimation of multinomial probabilities under incomplete experimental information. Submitted.
110. RAMÍREZ, P. and VIDAKOVIC, B. (2008). Wavelet-based 2D Multifractal Spectrum with Applications in Analysis of Digital Mammography Images. Submitted.
111. POGGI, D., KATUL, G. and VIDAKOVIC, B. (2008). Two-dimensional scalar spectra inside dense canopies. Submitted.
112. LEE, K. S., ABOUELNASR, F. M., BAYER, C. W., GABRAM, S. G. A., MIZAIKOFF, B., ROGATKO, A., and VIDAKOVIC, B. (2008). Mining Exhaled Volatile Organic Compounds for Breast Cancer Detection. Submitted.

D. Presentations

Plenary Talks

1. *Ondellettes et Statistique: 10 Années D'histoire*, Guest Plenary Speaker at CUMC'97 (Canadian Undergraduate Mathematics Conference), July 1997, Montreal, Canada.
2. *A Wavelet Primer*, Guest Plenary Speaker at the Meeting of Acoustical Society of America - North Carolina Chapter, October 1997, Asheboro, NC.
3. *Wavelet-Based Functional Data Analysis: Theory, Applications and Ramifications*, Plenary Talk at Third Pacific Symposium for Flow Visualization and Image Processing (PSFVIP-3), Maui, Hawaii, March 18-21, 2001.
4. One of four instructors and plenary speakers at: XIX Computational Mathematics School (Wavelets and Statistics), Naples, Italy, April 2-7, 2001.
<http://www.iam.na.cnr.it/smc2001/smc2001less.html>

5. Invited Lecturer at the workshop *On the links between nonlinear physics and information sciences*, Les Houches, France September 8-13, 2002
<http://www.lis.inpg.fr/houches.htm>.
6. Plenary Speaker at NSF/NSA Sponsored Workshop for Mathematical Tools and Statistical Techniques for Quantitative Medical Data Analysis, October 13-14, 2005 ETSU, Johnson City, TN. Theme: *Wavelets in Biomedical Data Analysis: Scaling and FANOVA in Applications*.
7. Featured Speaker at SCMA2005: Statistics, Combinatorics, Mathematics and Applications, December 2-4, 2005, Auburn University. Theme: *Wavelets in Biomedical Data Analysis*
<http://www.stat.auburn.edu/scma2005/featured.html> .
8. Two Plenary Lectures (i) Wavelets as Statistical Tools, (ii) Wavelet Solutions to Statistical Applications. *21st Mini Conference on Harmonic Analysis and Related Areas*, November 24-25, 2006; Auburn University, Auburn, Alabama. <http://www.math.auburn.edu/HAmini06/> .
9. *A Multitude of Wavelet-Based Spectra and their Use: From Scalegrams to Multifractal Directional Spectra of Multidimensional Objects*, One of three Special Invited Guests (with David Stoffer and David Brillinger), at Colloquium on Time Series at the Occasion of Pedro A. Morettin's 65th Anniversary 6/28 - 7/1, 2007, Campos do Jordão, SP, Brazil.
<http://www.ime.usp.br/~ubatuba/colloquium/>

Invited Talks

1. *On Some Properties of the Martin-Löf Measure of Randomness of Finite Binary Words*, Conference *Algebra and Logic*, March 1984, Zagreb, Croatia.
2. *Being reasonably conservative: Γ -minimax at work*, 1st North American New Researchers Meeting, June 1993, Berkeley, CA.
3. *Robust Inference via Γ -minimax*, Joint ASA and IMS Meeting, August 1993, San Francisco, CA.
4. *Wavelet-Based Random Densities*, The Biometric Society-ENAR Spring Meeting, April 1994, Cleveland, OH.
5. *Bayesian Wavelet Shrinkage*, 26th Symposium on the interface: Computer Science and Statistics. June 1994, Research Triangle Park, NC.
6. *Random Variables with Random Densities*, IMS Satellite Conference to the 3rd World Meeting of Bernoulli Society, June 1994, Chapel Hill, NC.
7. *Estimating the Square Root of a Density by Compactly Supported Wavelets*, Multiple Decision Theory and Related Topics, June 1995, Purdue University, W. Lafayette, IN.
8. *Wavelets and Their Statistical Use*, 2nd North American New Researchers Meeting, July 1995, Kingston, Canada.
9. *Estimation of a Square Root of a Density by Wavelets*, StatSci Inc., July 1995, Seattle, WA.
10. *Improving MLE-type Rules in Γ -Minimax Estimation Problems*, INFORMS Meeting, October 1995, New Orleans, LA.
11. *On Wavelet Regression*, The Joint IMS-ASA Meetings, August 1995, Orlando, FL.
12. *Wavelets for a Bayesian*, 3rd World Meeting of the International Society for Bayesian Analysis, September 1995, Oaxaca, Mexico.

13. *Wavelet Introduction and Some Aspects of Statistical Inference via Wavelets*, June 1996, Institute for Optics, CSIC, Madrid, Spain.
14. *Time Adaptive Wavelet Denoising*, Workshop on Default Bayesian Statistical Methodology, November 1996, Purdue University, W. Lafayette, IN.
15. *An Introduction to Wavelets I, II*, Two invited talks in the *Wavelet Day* at CNR-IAMI, December 1996, Milano, Italy.
16. *Random Densities by Wavelets*, Sixth International Workshop on Artificial Intelligence and Statistics, January 1997, Fort Lauderdale, FL.
17. *Wavelets: What They Are and What They Are Not*. Third International Triennial Conference on Probability and Statistics, Calcutta University, December 1997, Calcutta, India.
18. *Deconwavelets: Fast Deconvolutions by Wavelets*, ISI-Bernoulli Meeting, December 1997, Calcutta, India.
19. *Wavelet Based Statistical Procedures: An Overview*, NSF-CBMS Conference *Wavelet Analysis as a Tool for Computational and Harmonic Analysis*, May 1998, Orlando, FL.
20. *Bayes "Center" Shrinkage*, 6th Purdue International Symposium on Statistics, June 1998, W. Lafayette, IN.
21. *An Honest Modeling in Wavelet Domain*, Symposium on Nonlinear and Nonstationary Signal Processing Isaac Newton Institute for the Mathematical Sciences, Cambridge University, July/August 1998, Cambridge, England.
22. *Some Statistical Applications of Wavelets*, Conference *Celebrating Statistics in the Research Triangle Area: Legacy of Gertrude Cox*, September 1999, Research Triangle Park, NC.
23. *Multiresolution Methods in Statistics: A Two-day Tutorial*, October 1999, University of Simon Bolivar, Caracas, Venezuela.
24. *Wavelet Primer, Statistical Applications of Wavelets, and Wavelet-based Functional Data Analysis*, A wavelet day, series of 3 back-to-back lectures, Centre de Recherches Mathematiques, Universite de Montreal, Canada.
25. *Wavelets: Basics and Statistical Applications*, A minicourse of 8 lectures, December 1999, CNR-IAMI, Milano, Italy.
26. *Bayesian Models in General Time/Frequency Representations of Geophysical Signals*, May 2000, ISBA2000, Heraklion, Crete, Greece. <http://www.ntua.gr/ISBA2000/>
27. *Wavelet Based Processing of Geophysics Signals: Anova-Like Decompositions and (Multi)Fractality Assessment*, Chapter ASA Meeting: Talk at GaTech Campus, February 22, 2001.
28. *Wavelet based analysis of multifractals arising in geoscience measurements*, IMA Special Workshop: Frontiers of Mathematics in Geosciences, Minneapolis, March 5 - 7, 2001.
29. *Multiscale analysis of biometric measurements*, IMS/ENAR Spring Regional Meeting, Charlotte, NC, March 25-28, 2001.
30. *Wavelet-Based Denoising of Self-Similar Processes With Time Varying Hurst Exponent: Applications in Geophysics and Discussant to the Talk of Antoniadis and Fan*. IMS-ASA Joint Statistical Meetings, August 2001, Atlanta, GA.

31. Γ -Minimax wavelet shrinkage for the noisy signals with low signal-to-noise ratio, International Conference ICWA - Wavelets and Applications, January 8, 2002. Anna University, Chennai (Madras), India.
32. *Robust Bayes-Minimax Incorporation of Prior Information in Wavelet Denoising Applications*. Invited talk at Special session *Bayesian Robustness*, at JSM Meeting 2002, New York, August 13, 2002.
33. *Optimal Testing in Functional Analysis of Variance Models*, Invited Speaker at University of Florida Fifth Annual Winter Workshop: An IMS Mini-Meeting on Functional Data Analysis, January 10-11, 2003, Gainesville, Florida.
<http://www.stat.ufl.edu/symposium/2003/fundat/>
34. *Bayes-Minimax Wavelet Shrinkage*, 1st joint statistical meeting of IMS (Institute of Mathematical Statistics) and ISBA(International Society for Bayesian Analysis), Isla Verde, San Juan, PR, USA, 24-26 July 2003. <http://www.cnnnet.clu.edu/math/ims-isba-pr2003/>
35. *Bayesian Estimation of Log-spectral Density*, Invited Speaker at International Workshop on Bayesian Decision Analysis, 7-10 August 2003, Santa Cruz, CA
<http://www.ams.ucsc.edu/bayes03/>
36. *What does a single run tell about ensemble*, Invited Speaker at 2004 AAAS Annual Meeting, 12-16 February 2004
<http://www.project2061.org/meetings/AAASSeattlemeeting.htm>
37. *Wavelet-Based Estimation of a Bayes Discriminant Function*, Invited Speaker at Conference of International Society for Bayesian Analysis (ISBA), Viña del Mar, Chile, 23-27 May 2004.
<http://isba.mat.puc.cl/>
38. *Classification of High Frequency Pupillary Responses using Schur Monotone Descriptors in Multi-scale Domains*. Joint invited talk with Bin Shi, Annual meeting of Southwest Regional Council on Statistics (SRCOS), Virginia Tech, 6/6-6/9, 2004.
39. Minicourse *WAVELETS AND SELF-SIMILARITY: THEORY AND APPLICATIONS* , 7 lectures in 10 hours. December 14-16, 2004. CNR-IMATI Milano, Italy
http://www.mi.imati.cnr.it/conferences/brani_05.html
40. *Wavelets and Bootstrap*, Mini-Workshop on Bayesian Statistical Modeling in Wavelet Domain, CNR-IMATI, Milano, Italy. December 17, 2004.
41. *Wavelet-based convex rearrangements in inference about self-similarity*, Invited talk at International Conference on the Interactions between Wavelets and Splines, Athens, Georgia, May 18, 2005.
<http://www.math.uga.edu/~was/>
42. *Wavelet-based convex rearrangements in inference about self-similarity*, Talk at IMS Invited Session *Wavelets and Selfsimilarity*, JSM Minneapolis, August 12, 2005.
43. *Wavelets for Health: A Cartoon Overview*, Invited talk at Workshop on Multiresolution Modeling and Statistical Inference, October 27–29, 2005 at Radcliffe Institute, Harvard University.
44. *Wavelets in Biomedical Data Analysis*, Invited presentation at IMA Workshop Integration of Sensing and Processing, Minneapolis, December 5–9, 2005.
<http://www.ima.umn.edu/2005-2006/W12.5-9.05/>

45. Discussion on *Bayesian modelling with overcomplete representations*, by Merlise Clude and Robert Wolpert, Valencia 8 & ISBA June 2-6, 2006, Benidorm, Alicante, Spain
<http://www.uv.es/valenciameeting#IP6>
46. *Wavelets in Bioinformatics: Protein and DNA Random Walks and their Multiscale Analysis*, Graybill Conference Multiscale Methods and Statistics, Fort Collins, Colorado, June 11-13, 2006.
<http://www.stat.colostate.edu/graybillconference/>
47. *Wavelet Shrinkage by Bickel's Prior*, ICSA 2006 APPLIED STATISTICS SYMPOSIUM, June 14-17, 2006 University of Connecticut, Storrs, Connecticut.
<http://www.stat.uconn.edu/ICSA2006/>
48. *Mining the Noise in Biomedical Data*. Invited talk at 2008 SIAM International Conference on Data Mining, April 24-26, 2008, Atlanta, GA.
<http://www.siam.org/meetings/sdm08/>
49. *Mining the Noise: Wavelet-based Assessment of Scaling and Applications in Biomedical Data*. Invited talk at International Conference on Multivariate Statistical Modeling & High Dimensional Data Mining, 19-23 June 2008, Kayseri, Turkey.
<http://hdm2008.erciyes.edu.tr/>
50. *Individual Patient Dosing in Cancer Clinical Trials*. Invited talk at International Conference Bayesian Biostatistics 2009, 26-28 January 2009, Houston, TX.
<http://www.mdanderson.org/pdf/bayesianbiostatconfprogram.14jan09.pdf>

Seminar Talks

1. Ohio State University, Department of Statistics, February 1992. *Linear Γ -Minimax Rules and Their Performance in Estimation Problems*.
2. Duke University, ISDS, October 1992. *Algorithmic Complexity: Relevance to a Bayesian*.
3. Southern Louisiana University, Department of Statistics, October 1993. *On Linear Γ -Minimax*.
4. University of Maryland at Baltimore County, Department of Mathematics, October 1993. *Polynomial Rules in Estimation Problems*.
5. Duke University, Department of Computer Science, September 1993. *Kolmogorov Complexity: A Link Between Statistics and Computer Science*.
6. Duke University, Department of Computer Science, October 1994. *Discrete Wavelet Transformations and Their Fast Calculation*.
7. University of Georgia at Athens, Statistics Department, February 1994. *Wavelets in Statistics*.
8. University of North Carolina at Chapel Hill, Statistics Department, February 1995. *Wavelet Transformations as Diversity Enhancers*.
9. Chicago School of Business, November 1995. *Bayesian Decision Theoretic Modeling by Wavelets*.
10. Universidad Politecnica de Madrid, Spain, May 1996. *Wavelets: A Tutorial Introduction*.
11. Universidad de Valencia, Spain, June 1996. *Bayesian Shrinkage in Wavelet Domain*.
12. Purdue University, Department of Statistics, November 1996. *Nonstandard Wavelet Statistical Methods*.

13. University of Pavia, Italy, Department of Statistics, December 1996. *Wavelet Scalograms and Bayesian Wavelet Smoothing: Applications in Economics*.
14. University of Montreal, Canada, Department of Statistics, July 1997. *Wavelet Based Random Variables and Their Properties*.
15. University of North Carolina at Chapel Hill, Department of Statistics, September 15, 1997. *Random Variables with "Wavelet" Densities*.
16. North Carolina State University, Department of Electrical Engineering, September 1998. *On Non-Equally Spaced Wavelet Regression*.
17. Wharton College, Department of Statistics, November 1998. *Wavelet-Based Deconvolutions*.
18. Temple University, Department of Statistics, November 1998. *An Introduction to Multiresolution Methods and Some of Their Statistical Applications*.
19. Texas A&M University, Department of Statistics, November 19, 1998. *Bayesian Wavelet Shrinkage: Principles and Applications*.
20. Rice University, Department of Statistics, November 23, 1998. *Bayesian Wavelet Shrinkage and Applications in Time Series and Turbulence Measurements*.
21. National Institute of Statistical Sciences, Research Triangle Park, December 1998. *Wavelet Models in Turbulence Research*.
22. Georgia Institute of Technology, Department of Mathematics, February 1999. Two talks: *Bayesian Wavelet Shrinkage by Example* and *Kolmogorov Complexity and its Statistical Interfaces*.
23. Princeton University, Program in Applied and Computational Mathematics, March 1999. *Bayesian Strategies for Wavelet Shrinkage*.
24. Purdue University, Department of Statistics, April 1999. *Algorithmic Complexity: Is it Relevant?*
25. Simon Bolivar University, Venezuela, Department of Statistics, October 1999. *Wavelet Functional Anova: Some Applications in Longitudinal Data*.
26. Georgia State University, Department of Mathematics and Statistics, November 10, 1999. *Wavelets in Statistics: Some Standard and Non-Standard Applications*.
27. University of South Carolina, Department of Statistics, November 1999. *Bayesian False Discovery Rate and Longitudinal Measurements of Oxygen Pressure in Rats*.
28. Bocconi University, Italy, Department of Mathematics and Statistics, December 1999. *Wavelet-based Approach to Functional Data Analysis*.
29. Georgia Institute of Technology, ISyE, March 2000. *Practical Implications of Wavelet-based Statistical Modeling*.
30. University of California at Santa Cruz, Department of Applied Mathematics and Statistics, April 3, 2000. *Statistical Models in the Wavelet Domain: Results, Applications, and Perspectives*.
31. University of Connecticut, Department of Statistics, April 21, 2000. *Functional Data Analysis via Wavelets*.

32. Georgia Institute of Technology, Mathematics Department, November 2000. *Some Nonstandard Applications of Wavelets*.
33. Ohio State University, Department of Statistics, April 24, 2001. *Wavelets approximate principal components: Application in functional regression and chemometry*.
34. Simon Bolivar University, CESMA, June 30, 2001. *Novel Algorithms in Wavelets: 2-D Continuous Transformation and Discrete Complex Wavelets*.
35. University of Georgia, Department of Statistics, September 28, 2001. *GammaShrink - A Robust Shrinker for Smoothing Signals with Small Signal-to-Noise Ratio: Theory and Applications*.
36. Emory University, Department of Biostatistics, October 5, 2001. *Adaptive Spokoiny's Tests in the Wavelet-Based Anova*.
37. Anna University, Workshop on Wavelets, Chennai, India, January 5, 2002. *Wavelet Based Anova, Tutorial Lecture*.
38. University of Georgia, Athens, GA, March 6, 2003. *Optimal Tests in WANOVA models*.
39. University of Belgrade, School of Mechanical Engineering, Belgrade, Serbia & Montenegro, December 21, 2004. *Statistical Modeling With Wavelets with Engineering Applications*.
40. Emory University, Department of Biostatistics, October 12, 2005. *Wavelets in Biostatistics: An Introduction*.
41. Clark University of Atlanta, Department of Mathematics and Statistics, February 28, 2006. *Wavelets in Biomedical Data Analysis: Recent Research Projects*.
42. Georgia Institute of Technology, Department of Computer Science, September, 29, 2006. *Efficient filtering and classification procedures based on scaling in the wavelet-domains*.
43. Kennesaw University, Department of Mathematics and Statistics, February 5, 2007. *Wavelets in Statistical Analysis of Biomedical Data*.
44. University of Washington, Department of Statistics, February 26, 2007. *Scaling Assessment Based on Wavelet-Based Convex Rearrangements*.
45. University of Washington, Center of Statistics and Social Sciences, February 28, 2007. *Wavelets in Biomedical Data Analysis: Scaling in Applications*.
46. University at Campinas, Departamento de Estatística, June 26, 2007. *Scaling Assessment with Wavelet Based Convex Rearrangements*.
47. University of Sao Paulo, Departamento de Estatística, June 27, 2007. *Bayesian Wavelet Estimation of Log-Spectral Density*.
48. North Carolina State University, Department of Statistics, December 13, 2007. *Scaling in Medical data and Applications*.
49. Emory University, Department of Medicine, EPICORE, May 30, 2008. *Self-similarity in Medical data and Applications*.

Contributed Talks in Person

1. *The Process Complexity of Finite Objects*, VII Yugoslav Symposium of Mathematics, Physics, and Astronomy, October 1980, Bečići, Montenegro.

2. *On Combinational Complexity of Finite Binary Words*, VIII Yugoslav Symposium of Mathematics, Physics, and Astronomy, October 1985, Priština, Serbia.
3. *About the Sign Test From the Algorithmic Complexity Standpoint*, 5th Pannonian Symposium on Mathematical Statistics, June 1985, Visegrad, Hungary.
4. *The Complexity Theory Approach to Statistical Testing of Randomness*, 6th Pannonian Symposium on Mathematical Statistics, September 1986, Bad Tatzmannsdorf, Austria.
5. *On the Efficiency of Affine Minimax Rules in Estimating a Bounded Multivariate Normal Mean*, Joint Statistical Meeting of IMS and ASA, August 1991, Atlanta, GA.
6. *Lower Bounds on Bayes Risk for Estimating a Normal Variance*, Purdue Conference on Decision Theory and Related Topics, May 1992, W. Lafayette, IN.
7. *Estimation of a Bounded Normal Mean: Constrained Estimators*, Joint Statistical Meeting of IMS and ASA, August 1992, Boston, MA.
8. *Decision-Theoretic Wavelet Hard-Thresholding*, Joint Statistical Meeting of IMS and ASA, August 1994, Toronto, Canada.
9. *Bayesian Wavelet Regression via Normal-Inverse-Gamma Priors*, Workshop on Model Uncertainty and Model Robustness, July 1995, Bath, England.
10. *Wavelet Transformations as Diversity Enhancers*, SPIE's International Symposium on Optical Science, Engineering and Instrumentation, July 1995, San Diego, CA.
11. *Wavelet Shrinkage: An Application to Image Denoising*, Joint ASA and IMS Meetings, August 1996, Chicago, IL.
12. *Bayesian Density Estimation in the Wavelet Domain with Hierarchical Mixture Priors*, JSM 157 Annual Meetings, August 1997, Anaheim, CA.
13. *Wavelet Random Variables*, SPIE Meeting, July 1997 San Diego, CA.
14. *Bayesian Wavelet Estimation of a Spectral Density*, Valencia International Meetings on Bayesian Statistics, May/June 1998, Valencia, Spain.
15. *Bayesian Modeling in Wavelet Domain: An Overview*, Discussion at IMS-ASA Joint Statistical Meetings, August 1998, Dallas, TX.
16. *The Filtering of Ozone Concentration Measurements Collected in a Turbulent Air Stream Using Bayesian Models*, IMS-ASA Joint Statistical Meetings, August 1999, Baltimore, MD.
17. *BEFE and BAMS: Two methods for denoising geophysics signals*, IMS-ASA Joint Statistical Meetings, August 2000, Indianapolis, IN.
18. *Bayesian Wavelet Shrinkage in Spectral Density Estimation*. Organization of session *Wavelets in Statistics* and talk at Fifth Biennial International Conference on Statistics, Probability and Related Areas, May 14-16, 2004 The University of Georgia, Athens, GA.
19. *New Probabilistic Method for Estimation of Equipment Failures and Development of Replacement Strategies*, contributed talk at HICSS-39 HAWAII INTERNATIONAL CONFERENCE ON SYSTEM SCIENCES, January 4-7, 2006, Sponsored by the College of Business, University of Hawaii at Manoa, Hawaii.

20. *2-D Wavelet-Based Spectra with Applications in Analysis of Geophysical Images*, Talk at Topic-Contributed IMS-Sponsored Session, JSM 8/2/2007, Salt Lake City.
<http://www.amstat.org/meetings/jsm/2007/onlineprogram/>
21. *Semi-Supervised Wavelet Thresholding and Applications*, Talk at Topic-Contributed IMS-Sponsored Session, JSM 8/4/2008, Denver.
<http://www.amstat.org/meetings/jsm/2008/>

E. Other Scholarly Accomplishments

- *A study of properties of computationally simple rules in estimation problems*, Ph.D thesis, Purdue University, July 1992. Thesis Advisor: Anirban DasGupta.
- *Complexity and Randomness*, Master Thesis, Belgrade University, May 1981, Thesis Advisors: Z. Ivkovic and D. Banjevic.
- **WEB MASTER of Jacket's Wavelets**, an influential web-wavelet resource.
<http://www.isye.gatech.edu/~brani/wavelet.html>

V. Service

A. Professional Contributions

Secondary/Adjunct/Courtesy Appointments

- 7/05–present **ISyE, Georgia Tech**, Atlanta, GA.
Jointly Appointed Professor
- 3/01–9/05 **Nicholas School of Environment, Duke University**, Durham, NC.
Adjunct Professor
- 6/03–present **Rollings School of Public Health, Department of Biostatistics, Emory University**, Atlanta, GA.
Professor with Secondary Appointment
- 9/03–4/07 **Statistics Department, University of Georgia**, Athens, GA.
Adjunct Professor
- 6/06–present **Karl E. Peace Center for Biostatistics**
 Jiann-Ping Hsu College of Public Health
 Georgia Southern University, Statesboro, GA.
Adjunct Professor
- Fall 97 **Statistics Department, University of North Carolina**, Chapel Hill, NC
Visiting Assistant Professor of Statistics.
- 4/96–8/96 **Universidad Politecnica de Madrid**, Madrid, Spain
Visiting Assistant Professor of Statistics.

Centers

- 12/04–present **Center for Bioinformatics and Computational Biology**, Biology Department,
 Georgia Institute of Technology, Atlanta, GA.
Member
- 4/06–present **Parker H. Petit Institute for Bioengineering and Bioscience**, Georgia Institute of Technology, Atlanta, GA.
Member

Leadership

- President of the Georgia Chapter of American Statistical Association (May 2005 - February 2007).

Editorial Work

- Editor-in-Chief for the Second Edition of *Encyclopedia of Statistical Sciences*, John Wiley & Sons.
- Associate Editor of *Journal of American Statistical Association - Applications and Case Studies*, From November 2007.
- Associate Editor of *Journal of Institute of Statistical Mathematics*, From January 2006.
- Associate Editor of *Communications in Statistics - Theory and Methods*, From January 2002.
- Associate Editor of *Bayesian Statistics*, An electronic Journal of International Society for Bayesian Analysis (ISBA), from Fall 2004.
- Associate Editor of *Annals of Applied Statistics*, From September 2005 - September 2007.
- Associate Editor of *Journal of Statistical Planning and Inference*, From January 2004 - January 2007.
- Guest Editor of a Special Issue of *Applied Stochastic Models in Business and Industry*, devoted to applications of wavelets and multiscale methods in business and industry. Number **19**, Volume 3, Fall 2003.
- Member of Editorial Board for *Applied Stochastic Models in Business and Industry*, ISSN 1524-1904, Wiley-Interscience. 1999–2006.
- Corresponding Editor to *The International Society for Bayesian Analysis (ISBA) Newsletter* 1999–2001.
- Nominating Committee of *The International Society for Bayesian Analysis (ISBA)* 2004–2006.
- Editor of the Electronic Proceedings for *International Workshop on Wavelets and Statistics, Duke University, 12-13 October 1997*; [<http://www.stat.duke.edu/conferences/BV97/elpro.html>]

Conference Organization

- Organizer and Chair of the Program Committee of INTERNATIONAL WORKSHOP ON WAVELETS AND STATISTICS, Duke University, October 12-13, 1997; [<http://www.isds.duke.edu/conferences/BV97/bv.html>].
- Organizer of the IMS invited session *Bayes and Wavelets* at Joint Statistical Meetings: 1996, 1997, 1998, and 1999, session *Turbulent Bayes* in 2000, and *Statistics in High-Frequency Data* in 2005.
- Organizer of the special contributed session *Wavelets and Statistics* at International Conference on the Interactions between Wavelets and Splines, Athens, Georgia May 16–19, 2005.
- Chair of IMS Local Organizing Committee and Member of JSM Local Organizing Committee, JMS 2001 Meetings, Atlanta, August 5-9, 2001.
- Member of Organizing Committee of International Conference on *Wavelets and their Applications*, Anna University, Chennai, India, 6-8 January 2002.
- Member of the Organizing Committee of International Conference *Wavelets and Statistics, Wathering the Seed*, Villard de Lans, Grenoble University, France September 4-7, 2003, <http://www-lmc.imag.fr/grenoblet2003/grenoble.htm>
- Member of the Scientific Committee of International Conference on *Multivariate Statistical Modeling & High Dimensional Data Mining*, 19-23 June 2008, Kayseri, TURKEY. <http://hdm2008.erciyes.edu.tr>.

B. Campus Contributions

- Pre-Major Advisor, Duke PMAC (1994-2000) and Founding Member of the Faculty Associate Program (FAP) at Duke University (Associate for Edens, Clocktower, Bassett, and Randolph Residence Halls)
- Organizer and Chair of Departmental Seminars 1999/00 at ISDS, Duke University.
- Hosting long- and short-term visiting scholars at Duke University *Marina Vannucci, Miguel Arino, Fabrizio Ruggeri, Rainer von-Sacks, and Juanmi Marin*

- Hosting long- and short-term visiting scholars at ISyE and BME Georgia Institute of Technology *Claudia Angelini* (2001, 2002, 2003), *Daniela DeCanditiis* (2001), *Fabrizio Ruggeri* (2002, 2004, 2006, 2007), *Gabriel Katul* (2001, 2004), *Luisa Cutillo* (2005), *Yoon Jung* (2005/2006), *Daniel Zantedeschi* (2005/2006), *Anna Kathleen Jolly* (2006), *Youngja Park* (2006), *Orietta Nicolis* (2006, 2007, 2008), *Josefa Pepa Ramirez* (2007, 2008)
- Committee for the PhD Exam in Statistics 1993/94 (ISDS-Duke), 2000/01 (ISyE-GaTech) Chair of the Committee, 2001/02; 2004/05 (ISyE-GaTech).
- Member of ISyE Information Technology Committee, from Fall 2001-Fall 2003.
- Member of ISyE Faculty Search Committee, From Fall 2002; Chair of the committee for 2003/04.
- Member of ISyE Advisory Committee, 2003-2005.
- Member of College of Engineering Committee for Peer Evaluation of Teaching, 2003/04.
- Member of College of Engineering Committee for Tenure and Promotion, from 2004/05.
- Faculty Advisor of the IIE Local Chapter at ISyE (2001-2004). Nationally, this chapter is the largest and certainly the most influential.
- Representative of Georgia Tech in Southern Regional Council on Statistics - SRCOS (2004 – present).

C. Review Work

- A member of the External Advisory Panel for Geophysical Statistics Project (GSP) at the National Center for Atmospheric Research (NCAR). Mandate: 2002-2006. Chair of the Panel in 2005.
- Panelist for the National Science Foundation: Evaluation of proposals submitted to the Biocomplexity in the Environment - Instrumentation Development for Environmental Activities (BE-IDEA) competition (14-16 June 2001).
- Panelist for the National Science Foundation. DMS Program: Evaluation of Proposals in Statistics. (2001, 2005).
- Invited Discussant for the National Science Foundation Workshops.(i) Frontiers of Mathematics in Geosciences (IMA, Minneapolis, March 5-7, 2001) and (ii) New Directions in Statistical Sciences (NSF, Washington, May 5-8, 2002).
- Grant Evaluator for the National Science Foundation, National Security Agency, Natural Sciences and Engineering Research Council of Canada, EPSRC (UK), American Association for the Advancement of Science (AAAS), The Netherlands Organization for Scientific Research (NWO).
- Book Reviewer for: Academic Press, Springer-Verlag, Addison Wesley, Cambridge University Press, Birkhäuser, and Wiley.

D. Statistical Consulting

- Consulting through Duke University's ISDS Statistical Consulting Center. A variety of consulting projects for researchers from Biology, School of Environment, Econ, Social Sciences, Education, Restaurant Industry, and Medical School at Duke University.
- Active involvement in ISyE Senior Design Courses in consulting several student teams in statistical issues critical for their senior design projects.
- Statistical Consulting for Emory University, Immucor, Chick-A-Fila, Wiley, CDC, GTRI.

E. Memberships and Awards

- Fellow of American Statistical Association, 2008 (Member of ASA from 1988, # 031524)
- Elected Member of International Statistical Institute (ISI # 13116)
- Institute of Mathematical Statistics (IMS # 8610)
- International Society for Bayesian Analysis
- Institute of Industrial Engineering (IIE # 880013865), 2002–2005.
- Bernoulli Society (# 13116)
- David Ross fellowship at Purdue University, 1991 and 1992

- I. W. Burr Award for excellence in teaching, consulting and research at Purdue University, May 1992.

VI. Grants and Contracts

Awarded Grants.

1. NSF Grant DMS-9404151 at Duke University (Bayesian Regression in Nonlinear AR, Neural Networks, Wavelet Representations and Longitudinal Data Models, Co-PI, Awarded \$ 65,000.00).
2. National Security Agency. Grant MDA904-97-1-0105 at Duke University (International Workshop on Wavelets in Statistics, Duke University, October 12-13, 1997, Chair of the organizing committee, Awarded \$ 10,000.00).
3. NSF Grant DMS-9700733 at Duke University (International Workshop on Wavelets in Statistics, Duke University, October 12-13, 1997, Chair of the organizing committee, Awarded \$ 10,000.00).
4. Army Research Office. Support for three distinguished researchers to attend the Workshop on Wavelets in Statistics, October 12-13, 1997 (approx. \$5,000.00).
5. NSF Grant DMS-9626159 at Duke University (Bayesian Wavelet Shrinkage with Applications in Turbulence, PI, Awarded \$ 65,000.00).
6. NSF Grant DMS-0072585 at ISyE, Georgia Institute of Technology (Bayesian Modeling in the Wavelet Domain with Applications in Atmospheric Turbulence. PI, Awarded \$125,000.00 jointly with Gabriel Katul from SOE, Duke University.)
7. National Security Agency, Grant 240660R at GaTech, 2004-2005. Wavelet Applications in Monitoring. PI, Awarded \$30,001.00
8. NIH-AHRQ: Comprehensive IT Solution for Medication Errors in Pediatric, B. Vidakovic and J. Jacko Co-PIs. Dr François Sainfort is PI, 10/04-9/07, Awarded \$1,495,571.00 total.
9. Georgia Cancer Coalition 2005/2006: Wavelet Image Interpolation and Applications in Mammography. (GaTech [B. Vidakovic, PI], Emory [D. Bowman, PI]), Awarded \$39,000.00 total.
10. NSF Grant DMS-0505490 at BME, Georgia Institute of Technology. Collaborative Research: Analysis of High-Dimensional or Functional Data by Multiscale Methods with Applications. (GaTech [Vidakovic, PI] and UCF [Pensky, PI]), 2005-2008, Awarded \$156,000 total, 84,000.00 GaTech Part.
11. NSF Grant ATM 0724524 at BME, Georgia Institute of Technology. Collaborative Research: Multiscale Statistical Methodologies to Unravel Complexities in Atmospheric Turbulence Data, 2007-2010. Awarded \$360,000 total, 244,000.00 GaTech Part.
12. Comprehensive Health Solutions Inc. Grant at Health System Institute, PI Vidakovic. "WHAM 2.0: Increasing Predictive Power of a Bayesian Expert System for Modeling Health Burdens in a Large Company Work Force." [August 1, 2008 - July 31, 2009] \$157,078.00
13. Emory-Georgia Tech BME-Neurology Seed Grant Program 2008. PIs Vidakovic GT and LaRoche Emory . "Vasospasm Diagnostics by Multifractional Descriptors in EEG" [May 1, 2008-April 30, 2009] Total \$20,000

Other Minor Funding.

- Duke Arts and Sciences Research Council seed grants: 1995/96, 1996/97, 1997/98, 1999/2000 totaling \$ 8,260.
- Spanish Ministry of Education, 1996 (2,620,000 pts \approx \$ 18,000 in 1996).
- IMS North American New Researchers Meeting: Travel and Housing Grants (Berkeley, 1993 and Kingston, Canada, 1995).
- NSF-SBIR Statistical Analysis With Wavelets Project at StatSci, Consultant on NSF Grant DMI-94-61370.

Patents.

1. CRYPTOWAVE: WAVELET BASED CRYPTOGRAPHY ALGORITHM, GTRC ID 2874 provisional, USPTO.

Summary of Instruction Opinion Survey¹**Undergraduate Courses**

Sem/Year	Course	Number	# of Students	# of Resp.	Teach. Effect.
Spring/2001	Basic Statistical Meth	ISyE 2028	72	17	5.0
Fall/2001	Basic Statistical Meth	ISyE 2028	46	18	4.9
Summer/2002	Probability With Apps	ISyE 2027	39	6	4.8
Fall/2002	Basic Statistical Meth	ISyE 2028	27	11	5.0
Fall/2003	Basic Statistical Meth	ISyE 2028	37	19	4.9
Fall/2004	Basic Statistical Meth	ISyE 2028	54	25	4.8
Spring/2005	Basic Statistical Meth	ISyE 2028	52	27	4.9
Summer/2005	Statistics & Applications	ISyE 3770	99	24	4.4
Spring/2006	Problems-Biomed Engr I	BMED 1300	8	2	5.0
Spring/2006	Problems-Biomed Engr I	BMED 1300	8	7	4.9
Summer/2006	Problems-Biomed Engr II	BMED 2300	15	6	4.2
Spring/2007	Special Topics (Bioengr Stat)	BMED 2803	30	7	4.9
Fall/2007	Special Topics (Bioengr Stat)	BMED 2803	50	20	4.3
Spring/2008	Intro-Bioengr Stats	BMED 2400	39	11	4.5
Fall/2008	Intro-Bioengr Stats	BMED 2400	57	31	4.5
<i>Average</i>			42.2	15.4	4.70

Graduate Courses

¹The average score for teaching effectiveness is found as a weighted average where the weights are proportional to the number of people responded.

Sem/Year	Course	Number	# of Students	# of Resp.	Teach. Effect.
Fall/2000	Nonparametric Data Analy	ISyE 6404	17	6	4.2
Spring/2001	Special Topics (Wavelets)	ISyE 8801	8	4	4.0
Summer/2001	Stat Models & Dsgn Expts	ISyE 6401	64	17	4.4
Spring/2002	Adv. Topics-Statistics (Wavelets)	ISyE 8841	6	1	5.0
Summer/2002	Probabilistic Models	ISyE 6650	28	6	4.5
Fall/2002	Nonparametric Data Analy	ISyE 6404	22	8	4.9
Spring/2003	Time Series Analysis	ISyE 6402	48	18	4.6
Fall/2003	Nonparametric Data Analy	ISyE 6404	19	10	4.9
Spring/2004	Time Series Analysis	ISyE 6402	29	11	4.6
Fall/2004	Adv. Topics-Statistics (Biostat)	ISyE 8843	21	8	4.8
Fall/2005	Adv. Topics-Statistics (Biostat)	ISyE 8843	11	5	4.7
Fall/2005	Special Topics (Biostat)	BIOL 8803	8	4	4.8
Summer/2006	Special Topics (Health Stat)	BMED 8813	3	1	5.0
Summer/2006	Special Topics (Health Stat)	HS 8803	15	6	4.5
Fall/2006	Special Topics (Bioengr Stat)	BMED 8813	11	5	4.9
	<i>Average</i>		20.7	7.3	4.61