

## GALIT SHMUELI

### Associate Professor of Statistics

Director, eMarkets Research Lab  
Dept of Decision, Operations & Information Technologies  
Robert H. Smith School of Business  
4361 Van Munching Hall  
University of Maryland  
College Park, MD 20742-1815  
Phone (301) 405 9679 Fax (301) 405 8655  
Email: gshmueli@rhsmith.umd.edu  
Web: <http://www.smith.umd.edu/faculty/gshmueli>

### Professional Experience

- 2007- Associate Professor of Statistics, Department of Decision, Operations & Information Technologies  
Robert H. Smith School of Business, University of Maryland, College Park, MD.
- 2002-2007 Assistant Professor of Statistics, Department of Decision, Operations & Information Technologies  
Robert H. Smith School of Business, University of Maryland, College Park, MD.
- 2000-2002 Visiting Assistant Professor, Department of Statistics, Carnegie Mellon University, Pittsburgh, PA.
- 1997-1999 Treasurer of the Israeli Statistical Association
- 1995-2000 Instructor and Teaching Assistant, Technion, Israel, Faculty of Industrial Engineering & Management

### Education

- 1997-2000 Ph.D. in Statistics, Faculty of Industrial Engineering & Management, Technion, Israel.  
Thesis topic: "Run-Related Distributions and their Application to Industrial Statistics".
- 1994-1997 M.Sc. in Statistics, Faculty of Industrial Engineering & Management, Technion, Israel.  
Thesis topic: "Analysis and Display of Promotion Data".
- 1992-1994 B.A. in Statistics & Psychology, Summa cum Laude, Haifa University, Israel.
- 1991-1992 First year studies towards B.A. in Statistics & Psychology, The Amirim Program for Excellency, The Hebrew University, Israel.

### Additional Faculty Affiliations

- 2006-present Centre for Information Technology and the Networked Economy (CITNE), Indian School of Business
- 2005-present Center for Health Information and Decision Systems (CHIDS), University of Maryland
- 2003-present Applied Mathematics and Scientific Computation (AMSC) program, University of Maryland
- 2002-present Center for Electronic Markets and Enterprises (CEME), University of Maryland
- 2002-present Statistics Consortium, University of Maryland
- 2000-2002 Center for Automated Learning and Discovery, Carnegie Mellon University

### Honors, Awards, and Grants

- 2008 Top 15% teaching award, Smith School of Business.
- 2007 "Best Conference Paper" Award, Conference on Information Systems & Technology (CIST), for paper "Contrasting Explanatory and Predictive Modeling in IS Research".
- 2006-8 CDC award, *BioSense Initiative to Improve Early Event Detection*, subcontractor to Johns Hopkins Applied Physics Laboratory, \$170,433 to UMD, RFA-PH-05-126.
- 2006 Top 15% teaching award, Smith School of Business.
- 2006 co-PI, NSF Industry/University Cooperative Research Center Planning Grant for the Center for Health Information and Decision Systems, \$10,000, UMD
- 2006 Business & International Education (BIE) travel award, \$1,500, Smith school of business, UMD.
- 2005 NSF award for *1st Interdisciplinary Symposium on Statistical Challenges and Opportunities in Electronic Commerce Research*, \$30,000, grant IIS-0508712.

- 2005 Top 15% teaching award, Smith School of Business.
- 2004-5 Krowe award for teaching excellence in the MBA program, Smith school of business, UMD.
- 2004 Top 15% teaching award, Smith School of Business.
- 2004 *Interactive Visualization Tool for Online Auction Data*, \$12,000, Smith Technology Integration Initiative”, UMD.
- 2004 *Instructional Innovation and Enhancement with Technology – The Use of “Clickers” in the Classroom: A Pilot Project*, \$10,800, Smith Technology Integration Initiative”, University of Maryland.
- 2004 Summer research grant from NSF-ITR grant (DMI-0205489) via the Center for Electronic Markets and Enterprises , Robert H. Smith School of Business, University of Maryland.
- 2004 Young researcher travel award to *The International Workshop of Applied Probability*, Institute of Mathematical Statistics.
- 2004 Young researcher travel award to *University of Florida 6<sup>th</sup> Annual Winter Workshop on Data Mining, Statistical Learning, and Bioinformatics*, NSF.
- 2003 *Introducing Statistical Thinking to Online Auctions*, \$8000, Center for Electronic Markets and Enterprises, Smith School of Business, University of Maryland.
- 2003 *Investigating Online Auctions*, \$2000, Netcentricity Research Laboratory, Smith School of Business, UMD.
- 2003 *Software for independent study research projects, and Migration and update of the Web site SQC online*, \$4000, Smith Technology Integration Initiative, University of Maryland.
- 2000-2 Summer support from *The Agency for Healthcare Research and Quality* (contract number 290-00-0009).
- 2000 The Israel Parliament Award for Excellence in Studies and Research (single PhD candidate selected annually).
- 2000 Miriam and Aaron Gutwirth Memorial Fellowship for Excellence, Technion.
- 1999 First Prize, Mitchener Award in Quality Sciences and Quality Management, Technion.
- 1996 Teaching Assistant Award for Consistent Excellency, Technion.
- 1995 Teaching Assistant Award for Excellency, Technion.
- 1994-5 Excellency Scholarship, Technion.
- 1994-9 Dean’s Scholarship, Technion.
- 1993 Best Student Award, Department of Statistics, Haifa University.
- 1992 Enlisted on the Dean’s list, The Hebrew University.

## RESEARCH

- Statistical methodology for real-world applications
- Models for contemporary data structures
- Anomaly detection

Fields of Applications: Information Systems (electronic markets), Biosurveillance (disease outbreak detection)

## Books

- Jank, W. and Shmueli, G. (2008) *Statistical Methods in eCommerce Research*, John Wiley & Sons, ISBN 978-0-470-12012-5.
- Shmueli, G., Patel, N. R., and Bruce, P., (2008), *Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner*, Wiley India, ISBN 9788126517589.
- Shmueli, G., Patel, N. R., and Bruce, P., (2006), *Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner*, John Wiley and Sons Inc., ISBN 0-470-08485-5.

## Publications - Peer Reviewed Journals

1. Shmueli, G., and Burkom, H. S., “Statistical Challenges Facing Early Outbreak Detection in Biosurveillance”, *Technometrics* (special issue on Anomaly Detection), forthcoming.
2. Lotze, T. and Shmueli, G., “How does improved forecasting benefit detection? An application to biosurveillance”, *International Journal on Forecasting*, forthcoming.
3. Lotze, T., Murphy, S. P., and Shmueli, G., (2008) “Preparing Biosurveillance Data for Classic Monitoring”, *Advances in Disease Surveillance*, vol. 6.
4. Wang, S., Jank, W., Shmueli, G., and Smith, P. (2008) “Modeling Price Dynamics in eBay Auctions Using Principal Differential Analysis”, *Journal of the American Statistical Association (JASA)*, vol. 103 (483), pp. 1100-1118.
5. Wang, S., Jank W., and Shmueli, G. (2008) “Explaining and Forecasting Online Auction Prices and their Dynamics using Functional Data Analysis”, *Journal of Business and Economic Statistics*, vol. 26 (3), pp. 144-160.
6. Bapna, R., Jank, W. and Shmueli, G., (2008) “Consumer Surplus in Online Auctions”, *Information Systems Research*, vol. 19(4), pp. 400 - 416.
7. Shmueli, G., Jank, W., and Hyde, V., (2008) “Transformations for Semi-Continuous Data”, *Computational Statistics & Data Analysis*, vol 52(8), pp. 4000-4020.
8. Rettinger, F., Jank, W., Tutz, G., and Shmueli, G., (2008) “Smoothing Sparse and Unevenly-Sampled Curves using Semiparametric Mixed Models: An Application to Online Auctions”, *Journal of The Royal Statistical Society, Series C (Applied Statistics)*, 57(2), pp. 127-148.
9. Bapna, R., Jank, W. and Shmueli, G., (2008) “Price Formation and its Dynamics in Online Auctions”, *Decision Support Systems*, vol 44, pp. 641-656.
10. Shmueli, G., Russo, R. P., and Jank, W., (2007) “The BARISTA: A Model for Bid Arrivals in Online Auctions”, *Annals of Applied Statistics*, vol 1, no. 2, pp. 412-441.
11. Burkom, H. S., Murphy, S. P., and Shmueli, G., (2007) “Automated Time Series Forecasting for Biosurveillance”, *Statistics in Medicine*, vol 26, no. 22, pp. 4202-4218.
12. Jank, W. and Shmueli, G. (2007) “Modeling Concurrency of Events in Online Auctions via Spatio-Temporal Semiparametric Models”, *Journal of Royal Statistical Society, Series C (Applied Statistics)*, vol 60, no. 1, pp. 1-27.
13. Shmueli, G., Jank, W., Aris, A., Plaisant C., and Shneiderman, B., (2006) “Exploring Auction Databases through Interactive Visualization”, *Decision Support Systems*, vol. 42., no. 3, pp. 1521-1538.
14. Kadane, J. B., Krishnan, R., and Shmueli, G., (2006) “A Data Disclosure Policy for Count Data Based on the COM-Poisson Distribution”, *Management Science*, vol. 52, no. 10, pp. 1610-1617.
15. Hyde, V., Jank W., and Shmueli, G., (2006) “Investigating Concurrency in Online Auctions Through Visualization”, *The American Statistician*, vol. 60, no. 3, pp. 241-250.
16. Jank W., and Shmueli, G., (2006) “Functional Data Analysis in Electronic Commerce Research”, *Statistical Science*, vol. 21, no. 2, pp. 155-166.
17. Jank W., and Shmueli, G., (2006) “A Special Issue on Statistical Challenges and Opportunities in Electronic Commerce Research”, *Statistical Science*, vol. 21, no. 2, pp. 113-115.
18. Fienberg, S. E., and Shmueli, G. (2006), Comment on “A Bayesian Dynamic Model for Influenza Surveillance” by Sebastiani, Mandl, Szolovits, Kohane, and Ramoni, *Statistics in Medicine*, vol 25, no. 11, pp. 1821-1822.
19. Kadane, J. B., Shmueli, G., Minka, T. P., Borle, S., and Boatwright, P. (2006), “Conjugate Analysis of the Conway-Maxwell-Poisson Distribution”, *Bayesian Analysis*, vol. 1, no.2, pp. 363-374.
20. Borle, S., Boatwright, P., Kadane, J. B., Nunes, J. C., and Shmueli, G. (2005), “The Effect of Product Assortment Changes on Customer Retention”, *Marketing Science*, vol. 24, no. 4, pp. 616-622.
21. Shmueli, G. and Jank W. (2005), “Visualizing Online Auctions”, *Journal of Computational and Graphical Statistics*, vol. 14, no. 2, pp. 299-319.
22. Fienberg, S. E. and Shmueli, G. (2005), “Statistical Issues and Challenges Associated with Rapid Detection of Bio-terrorist Attacks”, *Statistics in Medicine*, vol. 24, no. 4, pp. 513-529.

23. Shmueli, G., Minka, T. P., Kadane, J. B., Borle, S. and Boatwright, P. (2005), "A Useful Distribution for Fitting Discrete Data: Revival of the COM-Poisson", *Journal of the Royal Statistical Society, Series C (Applied Statistics)*, vol. 54 no. 1, pp. 127-142.
24. Fu, J. C., Shmueli, G., and Chang, Y. M. (2003), "A Unified Markov Chain Approach for Computing the Run Length Distribution in Control Charts with Simple or Compound Rules", *Statistics & Probability Letters*, vol. 65, no. 4, pp. 457-466.
25. Shmueli, G. (2003), "Computing Consecutive-Type Reliabilities Non-Recursively", *IEEE Transactions on Reliability*, vol. 52 (3), pp. 367-372.
26. Shmueli, G. and Cohen, A. (2003), "Run Length Distribution for Control Charts with Runs Rules", *Communications in Statistics- Theory & Methods*, vol. 32 (2), pp. 475-495.
27. Shmueli, G. (2003), "System-Wide Probabilities for Systems with Runs and Scans Rules", *Methodology and Computing in Applied Probability*, vol. 4, pp. 401-419.
28. Goldenberg, A., Shmueli, G., Caruana, R. A., and Fienberg, S. E. (2002), "Early Statistical Detection of Anthrax Outbreaks by Tracking Over-the-Counter Medication Sales", *Proceedings of the National Academy of Sciences*, vol. 99, Issue 8, pp. 5237-5240.
29. Shmueli, G. and Cohen A. (2000), "Run Related Probability Functions Applied to Sampling Inspection", *Technometrics*, vol. 42 (2), pp. 188-202.
30. Shmueli, G. and Cohen, A. (1999), "Analysis and Display of Hierarchical Life-Time Data", *The American Statistician*, vol. 53 (2), pp. 140-146.

#### **Papers in Conference Proceedings**

31. Lotze, T. and Shmueli, G. (2008) "On the relationship between forecast accuracy and detection performance: An application to biosurveillance", *Proceedings of the 2008 IEEE Conference on Technologies for Homeland Security*, Boston, MA.
32. Lotze, T. and Shmueli, G. (2008) "Ensemble Forecasting for Disease Outbreak Detection", *Proceedings of the 23rd AAAI Conference on Artificial Intelligence (AAAI-08)*, Chicago, IL.
33. Shmueli, G. and Koppius, O. (2008) "Contrasting Predictive and Explanatory Modeling in IS Research", *Conference on Information Systems & Technology (CIST)*, **Best Paper Award**, Seattle, WA.
34. Hyde, V., Jank, W., and Shmueli, G. (2007), "A Family of Growth Models for Representing the Price Evolution in Online Auctions", *9th Intl Conference on Electronic Commerce*, Minneapolis, MA.
35. Buono, P., Plaisant, C., Simeone, A., Aris, A., Shneiderman, B., Shmueli, G., and Jank, W. (2007) "Similarity-Based Forecasting with Simultaneous Previews: A River Plot Interface for Time Series Forecasting", *11th Intl Conference on Information Visualization (InfoViz)*, Zurich, Switzerland.
36. Lotze, T., Shmueli, G., Murphy, S., and Burkom, H. (2006) "A Wavelet-based Anomaly Detector for Early Detection of Disease Outbreaks", *Proceedings of the 23rd International Conference on Machine Learning (ICML), Workshop on Machine Learning Algorithms for Surveillance and Event Detection*, Pittsburgh, PA.
37. Jank, W., Shmueli, G., and Wang, S. (2006) "Dynamic, Real-time Forecasting of Online Auctions via Functional Models", *Proceedings of 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (23% acceptance rate).
38. Murphy, S. P., Burkom, H. B., and Shmueli, G. (2006), "Data Adaptive Multivariate Control Charts for Routine Health Monitoring", *Syndromic Surveillance Conference*, in *Advances in Disease Surveillance*, 1:53.
39. Shmueli, G., Jank W, and Bapna, R. (2005), "Sampling eCommerce Data from the Web: Methodological and Practical Issues," *2005 Proceedings of the American Statistical Association*, Statistical Computing Section [CD-ROM], Alexandria, VA: American Statistical Association.

#### **Book Chapters (Peer Reviewed)**

40. Jank, W. and Shmueli, G., "Forecasting Online Auctions using Dynamic Models", in *Data Mining for Business Applications*, Editors: Carlos Soares & Rayid Ghani, IOS Press.

41. Jank W., and Shmueli, G. (2009) “Studying Heterogeneity of Price Evolution in eBay Auctions Via Functional Clustering”, in *Handbook in Information Systems Series: Business Computing*, Vol 3, Eds: Adomavicius and Gupta, Emerald.
42. Jank, W., Shmueli, G., Dass, M., Yahav, I., and Zhang, S. (2008), “Statistical Challenges in eCommerce: Modeling Dynamic and Networked Data”, *Tutorials in Operations Research, INFORMS 2008*.
43. Hyde, V., Jank, W., and Shmueli, G., (2008) “A Family of Growth Models for Representing the Price Process in Online Auctions”, in *Statistical Methods in eCommerce Research*, Editors: Jank & Shmueli, Wiley.
44. Jank, W., Shmueli, G., and Wang, S., (2008) “Modeling Price Dynamics in Online Auctions via Regression Trees”, in *Statistical Methods in eCommerce Research*, Editors: Jank & Shmueli, Wiley.
45. Russo, R. P., Shmueli, G., and Shyamalkumar, N. D., (2008) “Models of Bidder Activity Consistent with Self-Similar Bid Arrivals”, in *Statistical Methods in eCommerce Research*, Editors: Jank & Shmueli, Wiley.
46. Jank W., Shmueli G., Plaisant C., and Shneiderman B. (2008) “Visualizing Functional Data with an Application to eBays Online Auctions.” in *Handbook on Computational Statistics on Data Visualization*, Eds: Chen, Haerdle, and Unwin, Springer Verlag, Heidelberg, ISBN: 3-540-33036-4, pp. 873-898.
47. Shmueli, G. and Jank W., (2008) “Modeling Dynamics in Online Auctions: A Modern Statistical Approach”, in Kauffman, R., and Tallon, P. *Economics, Information Systems and Electronic Commerce: Empirical Research*, M.E. Sharpe, Armonk, NY, ISBN: 978-0-7656-1532-9.
48. Yahav, I. and Shmueli, G. (2007), “Algorithm Combination for Improved Performance in Biosurveillance Systems”, in *Lecture Notes in Computer Science*, vol 4506 (“Intelligence and Security Informatics: Biosurveillance”), Proceeding of the *Second NSF Workshop, Biosurveillance 2007*, pp. 91-102.
49. Shmueli, G., and Fienberg, S. E. (2006), “Current and Potential Statistical Methods for Monitoring Multiple Data Streams for Bio-Surveillance”, in *Statistical Methods in Counter-Terrorism: Game Theory, Modeling, Syndromic Surveillance, and Biometric Authentication*, Eds: A Wilson, G Wilson, and D H Olwell, ISBN 0-387-32904-8, Springer.
50. Aris, A., Shneiderman, B., Plaisant, C., Shmueli, G., Jank, W., (2005), “Representing Unevenly-Spaced Time Series Data for Visualization and Interactive Exploration”, in *Lecture Notes in Computer Science*, vol 3585, Human-Computer Interaction - INTERACT 2005: IFIP TC13 International Conference, Rome, Italy, September 12-16, 2005.
51. Shmueli, G. and Cohen A. (2000), “Algorithms Based on Runs in Statistical Quality Control: Applying Theoretical Results in the New Millennium”, in *Productivity & Quality Management Frontiers - IX*. pp. 354-355.

### Technical Reports and Working Papers

- Shmueli, G., (2009) “To Explain or To Predict?”, *Working Paper, RHS-*, Robert H. Smith School. University of Maryland (<http://ssrn.com/abstract=1351252>)
- Lin, M., Lucas, H., and Shmueli, G. (2008) “Is More Always Better? Larger Samples and False Discoveries”, *Working Paper, RHS-06-068*, Robert H. Smith School. University of Maryland (<http://ssrn.com/abstract=1336700>)
- Sellers, K. F., and Shmueli, G. (2008) “A Flexible Regression Model for Count Data”, *Working Paper, RHS-06-061*, Robert H. Smith School. University of Maryland (<http://ssrn.com/abstract=1127359>)
- Shmueli, G. and Koppius, O. (2008) “The Challenge of Prediction in IS Research”, *Working Paper, RHS-06-064*, Robert H. Smith School. University of Maryland (<http://ssrn.com/abstract=1112893>)
- Yahav, I. and Shmueli, G. (2007) “Evaluating Directionally-Sensitive Multivariate Control Charts with an Application to Biosurveillance”, *Working Paper, RHS-06-061*, Robert H. Smith School. University of Maryland (<http://ssrn.com/abstract=1119279>)
- Shmueli, G., Lotze, T. and Yahav, I. (2007) “Simulating Multivariate Syndromic Time Series and Outbreak Signatures”, *Working Paper, RHS-06-054*, Robert H. Smith School, University of Maryland (<http://ssrn.com/abstract=990020>)
- Shmueli, G., Jank, W. and Bapna, R. (2007) “Measuring Consumer Surplus on eBay: An Empirical Study”, *Working Paper, RHS-06-053*, Robert H. Smith School. University of Maryland (<http://ssrn.com/abstract=990014>).

- Jank, W., Shmueli, G., Wang, S., and Smith, P. (2006), “Modeling Price Dynamics in Ebay Auctions Using Principal Differential Analysis”, *Working Paper, RHS-06-052, Robert H Smith School, University of Maryland* (<http://ssrn.com/abstract=990009>).
- Shmueli, G., (2005) “Wavelet-Based Monitoring in Modern Biosurveillance”, *Working Paper, RHS-06-002, Robert H Smith School, University of Maryland* (<http://ssrn.com/abstract=902878>).
- Aris, A., Shneiderman, B., Plaisant, C., Shmueli, G., Jank, W., (2005) “Representing Unevenly-Spaced Time Series Data for Visualization and Interactive Exploration”, *Technical Report, HCIL-2005-01, HCIL, University of Maryland*.
- Jank, W. and Shmueli, G. (2005) “Modeling Concurrency of Events in Online Auctions via Spatio-Temporal Semiparametric Models” *Working Paper, RHS-06-030, Robert H Smith School, University of Maryland* (<http://ssrn.com/abstract=918809>).
- Jank, W. and Shmueli, G. (2005) “Profiling Price Dynamics in Online Auctions Using Curve Clustering”, *Working Paper, RHS-06-004, Robert H Smith School, University of Maryland* (<http://ssrn.com/abstract=902893>).
- Bapna, R., Jank, W. and Shmueli, G. (2004) “Price Formation and its Dynamics in Online Auctions”, *Working Paper, RHS-06-003, Robert H Smith School, University of Maryland* (<http://ssrn.com/abstract=902887>).
- Shmueli, G., Russo, R. P., Jank, W. (2004) “Modeling Bid Arrivals in Online Auctions”, *Working Paper, RHS-06-001, Robert H Smith School, University of Maryland* (<http://ssrn.com/abstract=902868>).
- Minka, T. P., Shmueli, G., Kadane, J. B., Borle, S. and Boatwright, P. (2003), “Computing with the COM-Poisson Distribution”, *Technical Report #776, Dept. of Statistics, Carnegie Mellon University*.
- Shmueli, G., Minka, T. P., Kadane, J. B., Borle, S. and Boatwright, P. (2001), “Using Computational and Mathematical Methods to Explore a New Distribution: The v-Poisson”, *Technical Report #740, Dept. of Statistics, Carnegie Mellon University*.
- Publications under Review / In Preparation**
- Kenett, R. S., and Shmueli, G., “Information Quality”, in preparation.
- Shmueli, G., “To Explain or To Predict?”, submitted to *Statistical Science*.
- Dass, M., Jank W., and Shmueli, G., “SOABER: An Innovative Approach to Maximize Bidder Surplus in Simultaneous Online Art Auctions”, submitted to *Decision Support Systems*.
- Lin, M., Lucas, H., and Shmueli, G. “Is More Always Better? Larger Samples and False Discoveries”, submitted to *ISR*.
- Lotze, T. Shmueli, G. and Yahav, I. “Simulating and Evaluating Biosurveillance Datasets”, chapter in *Biosurveillance: A Health Protection Priority*, (ISBN 9781439800461), Eds. Kass-Hout T. and Zhang, X., *Taylor and Francis*, submitted.
- Yahav, I., Lotze, T. and Shmueli, G. “Algorithm Combination for Improved Detection in Biosurveillance”, chapter in *Infectious Disease Informatics and Biosurveillance: Research, Systems, and Case Studies*, Eds. Castillo-Chavez, Chen, Lober, Thurmond & Zeng, *Springer*.
- Sellers, K. F. and Shmueli, G. “A Flexible Regression Model for Count Data”, revision submitted to *AOAS*.
- Shmueli, G. and Koppius, O. “The Challenge of Prediction in IS Research”, revision submitted to *MISQ*.
- Dass, M., Jank, W. and Shmueli, G. “Dynamic Price Forecasting In Simultaneous Online Art Auctions”, submitted to *Marketing Intelligent Systems using Soft Computing* (Editors: Jorge Casillas and Francisco J. Martínez-López).
- Yahav, I. and Shmueli, G. “Evaluating Directionally-Sensitive Multivariate Control Charts with an Application to Biosurveillance”, under revision for *JRSS-A*.
- Yahav, I. and Shmueli, G., “An Elegant Method for Generating Multivariate Poisson Data”, in preparation for *Management Science*.
- Shmueli, G., Jank, W., and Bapna, R., “A Pre-Theory Functional Approach for Detecting Private or Affiliated Value Auction Setting”, in preparation.

## Invited Talks

- To Explain or To Predict? Explanatory Modeling vs. Predictive Modeling in Scientific Research, RMIT, Melbourne, Australia, Feb 2009.
- To Explain or To Predict? Explanatory Modeling vs. Predictive Modeling in Scientific Research, *Melbourne Business School*, Melbourne, Australia, Feb 2009.
- Explanatory Modeling vs. Predictive Modeling in Scientific Research, *Econometrics & Business Statistics Group, Monash University*, Melbourne, Australia, Jan 2009.
- Explanatory vs. Predictive Modeling in Scientific Research, *Dept of Statistics, University of Canterbury*, Christchurch, New Zealand, Dec 2008.
- Explanatory vs. Predictive Modeling in Scientific Research, *Dept of Statistics, Auckland University*, Auckland, New Zealand, Nov 2008.
- A Flexible Regression Model for Count Data, *Baysian Interdisciplinary Research Unit, Indian Statistical Institute (ISI)*, Kolkata, India, Nov 2008.
- Predicting Delays in The Operating Room, *INFORMS*, Washington DC, Oct 2008.
- Measuring the Effect of Improved Forecasting on Detection: An Application to Biosurveillance, *INFORMS*, Washington DC, Oct 2008.
- Directionally Sensitive Multivariate Control Charts with an Application to Biosurveillance, *JSM*, Denver, Aug 2008.
- Statistical Challenges in Biosurveillance, *Spring Research Conference, Special Technometrics Session*, Atlanta, May 2008.
- Explanatory vs. Predictive Modeling in Scientific Research, *Statistics Workshop, Dept. of Mathematical Sciences, United States Military Academy at West Point*, April 2008.
- Explanatory vs. Predictive Modeling in Scientific Research, *Statistics Week Speaker, ASU*, Mar 2008.
- Statistical Challenges in Biosurveillance, *Statistics Week Speaker, ASU*, Mar 2008.
- Explanatory vs. Predictive Modeling in Scientific Research, *Technion- Israel Institute of Technology*, Dec 2007.
- Explanatory vs. Predictive Modeling in Scientific Research, *Statistics Department, Tel Aviv University*, Israel, Dec 2007
- A Family of Growth Models for Representing the Price Evolution in Online Auctions, *INFORMS*, Seattle Nov 2007.
- Automated Time Series Forecasting for Biosurveillance, *Intl Symposium on Forecasting*, June 2007.
- Automated Time Series Forecasting for Biosurveillance, *Biosurveillance and Anomaly Detection session, Intl Biometric Society ENAR meeting*, Mar 2007.
- Plenary speaker, *Attacking Biosurveillance Challenges with Statistical Weapons, U.S. Army Conference on Applied Statistics*, Oct 2006.
- Quantifying Bid Shading in Online Auctions via A Functional Approach, *INFORMS 2006*, Pittsburgh, PA, Nov 2006.
- Time Series Forecasting for Biosurveillance, *INFORMS 2006*, Pittsburgh, PA, Nov 2006.
- A Wavelet-based Anomaly Detector for Early Detection of Disease Outbreaks, *ICML workshop on Machine Learning Algorithms for Surveillance and Event Detection*, Pittsburgh, PA, June 2006.
- The BARISTA: A Model for Bid Arrivals in Online Auctions, *International Workshop on Applied Probability*, Storrs, CT, May 2006.
- Fundamentals of Statistical Monitoring in Biosurveillance, *Johns Hopkins School of Medicine, Health Sciences Informatics*, Baltimore, MD, May 2006.
- Wavelet-Based Monitoring for Bio-Surveillance
  - Columbia Business School, Dept. of Decision Risk & Operations, Mar 2006.
  - Carnegie Mellon University, Heinz School of Public Policy, Mar 2006.

- Technion – Israel Institute of Technology, Faculty of Industrial Engineering & Management, Jan 2006.
- A Functional Data Analytic Approach to Empirical eCommerce Research
  - NIST, Statistical Engineering Division, Gaithersburg, MD, June 2006.
  - Keynote speaker, *First National Seminar of Israel Statistical Association*, Tel Aviv, Israel, January, 2006.
  - NYU, Stern School of Business, Oct 2005.
- Panel on Inference from Internet Auction Data, *FTC Roundtable on The Economics of Internet Auctions*, Washington, DC, Oct 2005.
- Panel on Syndromic Surveillance, *SAMSI Program on National Defense and Homeland Security Workshop*, NC, Sept 2005.
- Current & Potential Methods for Anomaly Detection in Modern Time Series: The Case of Biosurveillance, *Data Mining Methods for Anomaly Detection, KDD Workshop*, Chicago, Aug 2005.
- Sampling eCommerce Data from the Web: Methodological and Practical Issues, *JSM*, Minneapolis, Aug 2005.
- Invited panel on National Systems for Biosurveillance, *JSM*, Minneapolis, Aug 2005.
- Wavelet-based Monitoring for Biosurveillance, *12<sup>th</sup> Annual Spring Research Conference on Statistics in Industry & Technology*, Utah, June 2005.
- Profiling Price Dynamics in Online Auctions Using Curve Clustering, *Statistical Challenges in eCommerce: 1<sup>st</sup> Interdisciplinary Symposium between Statistics, IS, and other Fields*, Maryland, May 2005.
- Modeling the Dynamics of Online Auctions Using a Functional Data Analytic (FDA) Approach, *Intl Sri Lankan Statistical Conference*, Sri Lanka, Dec 2004.
- Modeling Consumer Surplus in Online Auctions, *INFORMS*, Denver, Oct 2004.
- Detecting Bio-Terrorist Attacks By Monitoring Multiple Streams of Data, *Symposium on Machine Learning for Anomaly Detection*, Stanford, May 2004.
- A Useful Model for Count Data: The COM-Poisson, *The International Workshop of Applied Probability (IWAP 2004)*, Piraeus, Greece, Mar 2004.
- Modeling Count Data with the COM-Poisson, *5<sup>th</sup> International Conference on E-Commerce, Workshop on Revolutionary Methods in eCommerce*, Pittsburgh, PA, Sept 2003.
- Modeling Discrete Data with the (nu)COM-Poisson, *EURO/INFORMS*, Istanbul, Turkey, July 2003.
- Statistical Issues and Challenges Associated with Rapid Detection of Bio-Terrorist Attacks, *DIMACS Tutorial On Statistical And Other Health Surveillance Methods*, Rutgers University, NJ, June 2003.
- Real-time Monitoring of Daily Sales Using Wavelets, *The 2003 Quality & Productivity Research Conference*, IBM Research Center, NY, May 2003.
- Rapid Detection of Bio-Terrorist Attacks, *The 9<sup>th</sup> Biennial CDC/ATSDR Symposium on Statistical Methods*, Atlanta, GA, Jan 2003.
- Early Statistical Detection of Bio-Terrorism Attacks by Tracking OTC Medication, *The 2002 Quality & Productivity Research Conference*, Tempe, AZ, June 2002.
- A Method for Computing Runs- and Scans-Related Probabilities, University of British Columbia, Dept of Statistics, Vancouver, CA, Jan 2002.
- A Method for Computing Run-Related Probabilities: Theory & Applications, *The Second Statistics Workshop*, Winnipeg, Canada, July 2001.
- Run-Related Probability Functions Applied to Quality Control
  - Wharton School of Business, Dept. of Statistics, Feb 2000.
  - Carnegie Mellon University, Dept. of Statistics, Feb 2000.
  - Rutgers University, Dept of Statistics, Feb 2000.
  - Bell Labs, Statistics & Data Mining Research, Feb 2000.
  - IBM Research Center, NY, Jan 2000.
  - Tel-Aviv University, Dept of Statistics, May 1999.

## Conference Presentations: Contributed

- Ensemble Forecasting for Disease Outbreak Detection, *23rd AAAI Conference on Artificial Intelligence*, Chicago July 08 (short paper, acceptance rate: 25%) – presented by Thomas Lotze.
- Contrasting Explanatory and Predictive Modeling in IS Research, *INFORMS Conference on Information Systems and Technology (CIST)*, Seattle, Nov 2007.
- Explanatory vs. Predictive Models in eCommerce Research, *1st Symposium on Information Systems*, Hyderabad (ISB), India, Dec 2006.
- An Evaluation of Wavelet-Based Techniques for Prediction and Anomaly Detection in Syndromic Data, *Syndromic Surveillance Conference*, Baltimore, MD, Oct 2006.
- Preparing Biosurveillance Data for Classic Monitoring, *Syndromic Surveillance Conference*, Baltimore, MD, Oct 2006.
- Dynamic, Real-Time Forecasting of Online Auctions using Functional Models, *KDD*, Philadelphia, PA, Aug 2006.
- Quantifying Bid Shading in Online Auctions via a Functional Approach, *2nd Statistical Challenges in eCommerce Research Symposium*, May 2006.
- Explanatory vs. Predictive Modeling in Electronic Commerce (panel), *2nd Statistical Challenges in eCommerce Research Symposium*, May 2006.
- Wavelet-based Monitoring for Biosurveillance (poster), *A Conference on Nonparametric Inference and Probability with Applications to Science*, University of Michigan, Ann Arbor, Sept 2005.
- Wavelet-based Monitoring Methods for the Rapid Detection of Bioterrorist Attacks, *The 10th Biennial CDC/ATSDR Symposium on Statistical Methods*, Bethesda, MD, Mar 2005.
- Current and Potential Statistical Methods for Bio-Surveillance, *Workshop on Statistics and Counterterrorism*, NY, Nov 2004.
- Computing Reliabilities of Large Consecutive-Type Systems, *Conference On Mathematical Methods In Reliability (MMR2004)*, Santa Fe, NM, June 2004.
- Dynamic Profiling of Online Auctions Using Curve Clustering (poster), *University of Florida 6th Annual Winter Workshop on Data Mining, Statistical Learning, and Bioinformatics*, Gainesville, FL, Jan 2004.
- System-Wide Probabilities for Systems with Runs and Scans Rules, *The International Workshop of Applied Probability (IWAP 2002)*, Caracas, Venezuela, Jan 2002.
- Early Statistical Detection of Bio-Terrorism Attacks by Tracking OTC Medication Sales, *The Haifa Winter Workshop on Computer Science and Statistics (CsStat 2001)*, Haifa, Israel, Dec 2001.
- Observations from Two Collaborations, *The Second Young Statisticians' Meeting*, sponsored by Indigo - a Hewlett Packard company, Rehovot, Israel, Aug 2001.
- Statistics in Industry in the New Millennium: Using Web Applications to Bridge the Academia-Industry Gap, *The 2001 Quality & Productivity Research Conference*, Austin, Texas, May 2001.
- Systems with Multi-State Components Compared to Control Charts with Supplemental Runs-Rules, *The Second International Conference On Mathematical Methods In Reliability (MMR2000)*, Bordeaux, France, July 2000.
- Teaching Industrial Statistics with Excel, presented at *The First Young Statisticians' Meeting*, sponsored by Indigo - a Hewlett Packard company, Rehovot, Israel, Dec 1999.
- Run Related Probability Functions Applied to Quality Control, *The First International Symposium on Industrial Statistics*, Linkoping, Sweden, Aug 1999.
- Deriving k-Order Probability Functions from their Generating Functions", *Prague Stochastics '98*, Prague, Czech Republic, Aug 1998.
- Graphical Methods for the Presentation of Promotion Data, *The Annual Conference of the Israeli Statistical Association*, Jerusalem, Israel, May 1996.

## TEACHING

2002-current	Department of Decision, Operations & Information Technologies, Robert H. Smith School of Business, University of Maryland, College Park, MD <i>Scientific Data-Collection</i> (BMGT883) – PhD level <i>Data Mining for Business</i> (BUDT733) – MBA level <i>Data, Models, and Decisions</i> (BMGT630, BUSI630) – MBA level <i>Statistical Linear Models in Business</i> (BMGT430) – Undergraduate level <i>Research Interactive Team (RIT) on Exploring Online Auctions via Statistics &amp; Data Mining</i> (AMSC689) – PhD <i>Research Interactive Team (RIT) on Biosurveillance</i> (AMSC689) - PhD
2000-2002	Department of Statistics, Carnegie Mellon University, Pittsburgh, PA <i>Engineering Statistics and Quality Control</i> (36-220) <i>Sampling, Surveys, and Society</i> (36-203) Center for Automated Learning & Discovery, Carnegie Mellon University, Pittsburgh, PA <i>Applying Six Sigma Tools to Business Data</i>
1999-2000	Faculty of Industrial Engineering & Management, Technion, Israel <i>Industrial Statistics</i> (Instructor)
1994-1999	Faculty of Industrial Engineering & Management, Technion, Israel <i>Time Series and Forecasting, Multivariate Analysis, Industrial Statistics, Introduction to Statistics, Statistics for Engineers</i> (Teaching assistant).
1993-1994	Department of Statistics, Haifa University, Israel: <i>Introduction to Stochastic Processes, Introduction to Probability 1, Introduction to Probability 2</i> (Teaching assistant)

### Details of Teaching at Smith School of Business

Semester	Course #	Level/Location	Course Title	# Students	Avg Instructor Rating
Spring 2008	BUDT733	MBA/College Park	Data Mining for Business	24	4.51
Fall 2007	BMGT883	PhD/College Park	Scientific Data Collection	7	4.2
Fall 2007	BUDT733	MBA/DC-evening	Data Analysis for Decision Makers	38	4.6
Spring 2007	BMGT883	PhD/College Park	Scientific Data Collection	4	4.59
Spring 2007	BUDT733	MBA/College Park	Data Analysis for Decision Makers	33	4.5
Fall 2006	BUDT733	MBA/DC-evening	Data Analysis for Decision Makers	27	4.26
Spring 2006	BUDT733	MBA/College Park	Data Analysis for Decision Makers	39	4.64
Spring 2006	BUDT733	MBA/DC-weekend	Data Analysis for Decision Makers	14	4.25
Fall 2005	BUDT733	MBA/DC-evening	Data Analysis for Decision Makers	36	4.69
Spring 2005	BUDT733	MBA/College Park	Data Analysis for Decision Makers	25	4.66
Fall 2004	BUDT733	MBA/DC-evening	Data Analysis for Decision Makers	25	4.52
Spring 2004	BUSI630	MBA/DC-evening	Data, Models, and Decisions	50	4.54
Spring 2004	BUSI630	MBA/DC-evening	Data, Models, and Decisions	50	4.15
Fall 2003	BUDT733	MBA/DC-evening	Data Analysis for Decision Makers	36	4.58
Spring 2003	BMGT630	MBA/DC-evening	Data, Models, and Decisions	50	3.81
Spring 2003	BMGT630	MBA/DC-evening	Data, Models, and Decisions	50	3.53
Spring 2003	BMGT430	UG/College Park	Linear Statistical Models in Business	30	4.5

### Off-load teaching

Semester	Course #	Type	Credits	Title
Spring 2008	AMSC689	Research Interactive Team (RIT)	3	Explanatory vs. Predictive Models
Spring 2006	AMSC689	Research Interactive Team (RIT)	3	Biosurveillance
Fall 2005	AMSC689	Research Interactive Team (RIT)	3	Biosurveillance
Spring 2004	AMSC689	Research Interactive Team (RIT)	3	Exploring Online Auctions via Statistics & Data Mining
Fall 2004	AMSC689	Research Interactive Team (RIT)	3	Exploring Online Auctions via Statistics & Data Mining

## SERVICE

### External Service to Statistics and Information Systems Communities

- Associate Editor      2008- *Annals of Applied Statistics (AoAS)*  
2006- *Advances in Disease Surveillance*  
2006-2008 *Journal of the American Statistical Society (JASA), Applications & Case studies*
- Guest Editor      *Statistical Science*, special May 2006 issue on “Statistical Challenges and Opportunities in Electronic Commerce Research”

### Reviewer (alphabetical)

*Advances in Disease Surveillance*  
*Applied Stochastic Models in Business and Industry*  
*Communications in Statistics*  
*Communications of the ACM*  
*Computational Statistics and Data Analysis*  
*Decision Support Systems*  
*Emerging Infectious Diseases*  
*IEEE Computer Graphics & Applications*  
*IEEE Transactions on Reliability*  
*Information Systems Research*  
*International Journal of Reliability, Quality and Safety Engineering*  
*Journal of Quality Technology*  
*Journal of Statistical Planning and Inference*  
*Journal of the Royal Statistical Society*  
*Machine Learning*  
*Management Science*  
*Marketing Science*  
*Methodology & Computing in Applied Probability*  
*Omega – The International Journal of Management Science*  
*Operations Research*  
*Proceedings of the National Academy of Sciences (PNAS)*  
*Statistical Methodology*  
*Statistical Papers*  
*Statistical Science*  
*Statistics in Medicine*  
*The American Statistician*  
*The Open Statistic & Probability Journal*

Books: *John Wiley & Sons, Inc., McGraw-Hill, SAGE publications*

Grants: *NSA Mathematical Sciences Grant Program (American Mathematical Association)*

### Conference and session organization and committees

- 2009      Program committee member, *Conference on Information Systems and Technology (CIST)*, San Diego CA
- 2007      Program committee member, *Conference on Information Systems and Technology (CIST)*, Seattle WA
- 2007      Program committee member, *European Conference on Machine Learning (ECML) and European Conference on Principles & Practice of Knowledge Discovery in Databases (PKDD)*, Warsaw, Poland
- 2006      Program committee member, *KDD-2006 Workshop on Data Mining for Business Applications*, Philadelphia, PA.
- 2006      Organizing committee member, *International Symposium of Information Systems*, Indian School of Business, Hyderabad, India.

- 2006 Organized invited session “Online Trading”, *3rd Intl Workshop on Applied Probability*, University of Connecticut, Storrs, CT.
- 2005 Program committee member, *KDD-2005 Workshop on Data Mining Methods for Anomaly Detection*
- 2005 Co-organizer of *Statistical Challenges in eCommerce: 1st Interdisciplinary Symposium between Statistics, IS, and other Fields*, University of Maryland, College Park.
- 2004 Organized invited session “Online Auctions”, *Intl Sri Lankan Statistical Conference*, Sri Lanka.
- 2003 Organized invited session “Wavelets in Statistical Process Control”, *The 2003 Quality & Productivity Research Conference*, IBM Research Center, NY.
- 2002 Organized invited session “Monitoring Non-traditional Data for the Purpose of Early Detection”, *The 2002 Quality & Productivity Research Conference*, Tempe, AZ.

### **Professional Membership**

- Elected member, The International Statistical Institute (ISI)
- American Statistical Association (ASA)
- Institute of Mathematical Statistics (IMS)
- European Network for Business and Industrial Statistics (ENBIS)
- Institute For Operations Research and the Management Sciences (INFORMS)
- Statistical Research Committee, International Society for Disease Surveillance (ISDS)

### **Internal Service to Smith School and University**

- 2008 Admissions committee, Applied Math & Scientific Computation program, University of Maryland.
- 2006- Program and Curriculum Committee (PCC), Smith School of Business.
- 2007 Judge for Krowe award for teaching excellence, Smith School of Business.
- 2006-7 Service on Honor Board, Student Honor Council, University of Maryland.
- 2006 MBA Case Competition, faculty judge, Smith School of Business.
- 2005 Service appreciation recognition from the Center for Electronic Markets and Enterprises, Smith School of Business.
- 2005 Admissions committee, Applied Math & Scientific Computation program, University of Maryland.
- 2005 D&IT Department Recruiting Committee for statistics faculty, Smith School of Business..
- 2004 Advisory board member, Human Computer Interaction Lab (HCIL), University of Maryland.
- 2004 Applied Statistics Track Committee, Applied Math & Scientific Computation program, University of Maryland.
- 2004 D&IT Departmental Seminar Committee, Smith School of Business.
- 2004 “Clickers in the classroom” pilot study, initiator, funded by Smith Techology Initiative.
- 2003 D&IT Departmental MBA IS electives Review Committee, Smith School of Business.
- 2003 MBA Case Competition, faculty judge, Smith School of Business.
- 2003 Initiated and created a coffee lounge for D&IT faculty on 4th floor of Van Munching Hall. Smith School of Business.

## **Mentorship, Advising and Research Supervision**

### **Dissertations Chaired**

Thomas Lotze, PhD candidate, Applied Mathematics & Scientific Computation Program.  
Inbal Yahav, PhD candidate, Decision, Operations & Information Technologies, Smith School of Business.  
Valerie Hyde, PhD in Applied Mathematics and Scientific Computation Program, graduated 2007.  
Bernard Dillard, M.Sc. in Applied Mathematics and Scientific Computation Program, graduated 2005.

### **Dissertation Committees**

Jagan Sankaranarayanan, Dept of Computer Science, UMD (Dean's representative)  
Shamir Mukhi, Department of Electrical and Computer Engineering, University of Manitoba, Canada  
Abhishek Pani, Smith School of Business, Dept of Decision & Information Technologies, UMD  
Yufeng Tu, Smith School of Business, Dept of Decision & Information Technologies, UMD  
Shanshan Wang, Statistics Program, UMD  
Shihua Wen, Statistics Program, UMD  
Haiming Guo, Statistics Program, UMD  
Anna Goldenberg, M.Sc., Carnegie Mellon University  
Cristian Ghiuvela, Dept of Statistics, Carnegie Mellon University

### **Other Student Research Advising**

2008	Igor Nakshin, MBA student, Smith School of Business, UMD.
2007-2008	Adam Wilson, graduate student, Applied Mathematics & Scientific Computation (advisor).
2005-6	Abhishek Pani, graduate student, Dept of Decision & Information Technologies, UMD.
2004-5	Aleks Aris, graduate student, Human-Computer Interaction Lab, Computer Science.
2004	Shiping Zhang, undergraduate student, Mathematics department.
2003	Emily Marker, undergraduate student, Smith School of Business.