

IMOLA K FODOR

Associate Director/Global Head

Nonclinical Biostatistics

Genentech/Roche

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EDUCATION

PhD Statistics, University of California, Berkeley, 1999

MA Statistics, University of California, Berkeley, 1996

BA Highest Honors, Mathematics and Statistics with Minor in Physics, Rutgers University, 1994

Polytechnic University, Cluj Napoca, Romania, 1989-1990

Electrical Engineering and Computer Science Department

SUMMARY

- Nonclinical Biostatistics group leader
- Applied statistician with extensive experience in the physical and biological sciences and nonclinical drug development

SKILLS

- Excellent analytical and interpersonal skills
- Theoretical and applied statistics, including experimental design, exploratory data analysis, hypothesis testing, linear and nonlinear modeling, repeated measures analysis, multivariate analysis, clustering, classification, re-sampling methods
- Bioinformatics, data mining, signal processing, image analysis, scientific computing
- Applications: applied statistics in nonclinical drug development, including preclinical research, assay development, and manufacturing support for marketed products; chip manufacturing; climate modeling; radio astronomy; network intrusion detection; solar physics
- Programming languages and utilities: C++, C, FORTRAN, Java, R, S-PLUS, HTML, perl, python, cvs, doc++
- Statistical software: SAS, MATLAB, Mathematica
- Text formatting: LaTeX, Microsoft Office, Open Office
- Operating systems: Linux, UNIX, Mac OS, Windows

EXPERIENCE

Global Head, Nonclinical Biostatistics, Roche 6/09-present

Associate Director, Nonclinical Biostatistics, Genentech, South San Francisco, CA 2/08-present

- Lead and manage a group of Nonclinical Biostatisticians as they collaborate with and support scientists from diverse groups in Research, Development Sciences, Process R&D, and Product Operations
- Responsible for the statistical input provided by the group to nonclinical investigators within Genentech
- Contribute technical expertise to nonclinical statistical problems

- Provide innovative solutions to challenges faced by the group

Senior Statistical Scientist, Nonclinical Biostatistics, Genentech

2/07-2/08

- Provided statistical support and guidance to investigators in Molecular Oncology, Molecular Biology, Biomedical Imaging, Research Pathology, Antibody Engineering, Protein Engineering, Tumor Biology, Translational Oncology, Bioinformatics, Development Sciences, Pharmacokinetics, PD Biomarkers, and Manufacturing and Quality Control

Computational Mathematician, Biology, Atmosphere, Chemistry and Earth Division, Lawrence Livermore National Laboratory (LLNL), Livermore, CA

1/05-1/07

Biostatistics

- Designed experiments and developed methods to analyze complex datasets from high-throughput genomic and post-genomic platforms, including microarrays, 2D protein gels, protein arrays, mass spectrometry, and phenotype arrays. Collaborated with biologists and biochemists on applications using diverse sample types such as human whole blood, urine and tissue, as well as mouse blood and tissue, and bacterial cell cultures. Representative experimental goals included assessing differential gene expression in healthy versus cancerous cells after exposure to compounds of interest, quantifying the technical variation within a platform, finding proteomic signatures in samples exposed to pathogens of varying levels of virulence, uncovering phenotypic differences among bacterial organisms under differing physiological conditions, and measuring the effects of intervention foods on the levels of urine metabolites.

Highlights: proposed method for 2D gels reduced the number of apparently differentially expressed proteins by over 50%; proposed method for phenotype arrays was the first one to take experimental variation into account and attach uncertainty estimates to the results.

Computational Mathematician, Center for Applied Scientific Computing (CASC), LLNL

4/01-1/05

Signal processing

- Developed statistical models to characterize network traffic and detect anomalies in massive computer network datasets
- Adapted independent component analysis to geostatistics, and separated the contributions of different sources in spatio-temporal global temperature measurements
- Quantified the bias introduced by the spatio-temporally incomplete historic temperature record on estimates of global temperature trends

Highlights: identified the El Nino component in global temperatures more accurately than previous methods; found no evidence that the gaps in the historic temperature record resulted in an over-estimate of the global warming.

Image analysis

- Implemented statistical shape similarity measures based on thin-plate splines for similarity-based object retrieval in images
- Developed and implemented efficient techniques based on simple K-means and hidden Markov models to segment spatio-temporal images

- Designed and implemented a C++ library for wavelet denoising

Highlights: the algorithms were integrated into a scientific data mining software library.

Data mining

- Developed algorithms to automate the prohibitive visual detection and classification of radio galaxies in the FIRST (Faint Images of the Radio Sky at Twenty Centimeters) astronomical survey
- Experienced with the entire data mining process, from data pre-processing (spatial filters, wavelet denoising), to feature extraction (defining galaxy-specific features based on the geometry and other properties of the galaxies), and classification (generalized linear models, principal component analysis, and decision trees)

Highlights: successfully automated the detection of bent-double galaxies, saving years of manual exploration for the astronomers. The automated methods found galaxies missed by the astronomers in the region they have inspected visually.

Post-Doctoral Research Staff, CASC, LLNL 2/99-4/01

Conducted data mining research in various scientific contexts, ranging from astronomy to climate modeling. Experience in high performance and parallel computing.

Graduate Student Researcher, Department of Statistics, UC Berkeley, CA 8/94-12/98

Researched optimal techniques for estimating solar oscillation parameters from satellite and Earth-based experiments. Introduced and implemented a novel statistical method to estimate the power spectrum of solar oscillations. The state-of-the-art international [Global Oscillation Network Group](http://www.gong.noao.edu/) (GONG, <http://www.gong.noao.edu/>) adopted the procedure, as it resulted in superior parameter estimates than the previously used techniques.

- Introduced optimal methods for multitaper spectrum estimation for time series with missing values
- Developed realistic uncertainty estimates using bootstrap methods for the resulting multitaper spectrum estimates

Graduate Student Instructor, Department of Statistics, UC Berkeley, CA 8/95-12/98

Instructed various graduate and undergraduate level, theoretical and applied statistics courses

- Conducted weekly discussion and computer laboratory sessions, prepared tutorials and laboratory assignments, graded homeworks and exams, and lectured

Graduate Student Researcher, Institute of Geophysics and Planetary Physics, LLNL 6/97-9/97

Researched time series methods to accurately estimate the parameters of the five-minute oscillations of the Sun.

Statistical Consultant, Department of Statistics, UC Berkeley, CA 1/97-5/97 and 8/95-12/95

Advised clients on proper statistical methodology in subject areas ranging from biology to electrical engineering.

Senior Technical Associate, Mathematical Sciences Research Center, AT&T Bell Labs, NJ

5/94-7/94

Performed experimental design and statistical analysis to quantify the sources of variation in an integrated circuit wafer manufacturing process.

Statistical Consultant, Kwasha Lipton (Pricewaterhouse Coopers), Fort Lee, NJ

1/94-4/94

Consulted companies on employee benefit programs.

Undergraduate Student Researcher, Department of Mathematics, Lafayette College, Easton, PA

5/93-8/93

Conducted research in probability theory. Derived distributions of random variables for random walks of specific forms.

TEACHING EXPERIENCE

Graduate Student Instructor, Department of Statistics, University of California, Berkeley, CA

Linear Modeling (Statistics 151A), Fall 1999. Textbook: *Regression Analysis: Theory, Methods, and Applications* by A Sen and M Srivastava

Linear Modeling (Statistics 230A), Fall 1998. Textbook: *Linear Models: Least Squares and Alternatives* by CR Rao and H Toutenberg

Analysis of Time Series (Statistics 248), Fall 1997. Textbooks: *Time Series: Data Analysis and Methods* by DR Brillinger and *Modern Applied Statistics with S-Plus* by WN Venables and BD Ripley

Generalized Linear Models: Theory and Applications (Statistics 151B), Spring 1997. Textbook: *Generalized Linear Models* by P McCullagh and JD Nelder

Linear Models: Theory and Applications (Statistics 151A), Fall 1996. Textbook: *Linear Regression Analysis* by GAF Seber

Introduction to Theoretical Statistics (Statistics 102), Spring 1996. Textbooks: *Mathematical Statistics and Data Analysis* by JA Rice and *Statistics* by D Freedman, R Pisani, R Purves and A Adhikari

Survey Sampling (Statistics 152), Fall 1995. Textbooks: *Survey Sampling* by L Kish and *Sampling Techniques* by WG Cochran

PUBLICATIONS AND PRESENTATIONS

Journal Publications

Fodor IK, Corzett TH, M Choi, VL Walsworth, BA Chromy, KW Turteltaub, SL McCutchen-Maloney, "Statistical analysis of variation in the human plasma proteome", *J Biomed Biotechnol* 2010; 2010:258494. Epub 2010 Jan 14.

Corzett TH, **IK Fodor**, M Choi, VL Walsworth, BA Chromy, KW Turteltaub, SL McCutchen-Maloney, "Statistical analysis of the experimental variation in the proteomic characterization of human plasma by two-dimensional differential gel electrophoresis", *J Proteome Research* 2006 5(10), 2611-9.

Fodor IK, DO Nelson, M Alegria-Hartman, K Robbins, RG Langlois, KW Turteltaub, SL McCutchen-Maloney, "Statistical challenges in the analysis of two-dimensional difference gel electrophoresis experiments using DeCyder", *Bioinformatics*, **21** (2005), 3733-3740.

Fodor IK and C Kamath, "Denoising through Wavelet Shrinkage: An Empirical Study", *Journal of Electronic Imaging*, **12** (2003), 151-160. UCRL-JC-144258.

Kamath C, E Cantu-Paz, **IK Fodor**, and NA Tang, "Classifying Bent-Double Galaxies", *Computing in Science and Engineering*, **4**(4) (2002), 52-60. UCRL-JC-147497.

Fodor IK and C Kamath, "Dimension Reduction Techniques and the Classification of Bent Double Galaxies", *Computational Statistics and Data Analysis*, **41** (2002), 91-122. UCRL-JC-144209.

Duffy PB, C Doutriaux, **IK Fodor** and BD Santer, "Effect of Missing Data on Estimates of Near-Surface Temperature Change Since 1900", *Journal of Climate* **14** (13) (2001), 2809-2814. UCRL-JC-140272.

Fodor IK and PB Stark, "Multitaper Spectrum Estimation for Time Series with Gaps", *IEEE Trans Signal Processing*, **48** (2000), 3471-3483. UCRL-JC-136909.

Komm RW, Y Gu, F Hill, PB Stark, and **IK Fodor**, "Multitaper Spectral Analysis and Wavelet Denoising Applied to Helioseismic Data", *Astrophysical Journal*, **519** (1999), 407-421.

Drucker S, **I Fodor**, and E Fisher, "On Random Walks and Levels of the Form n^α ", *Rocky Mountain Journal of Mathematics*, **26** (1/1996), 117-134.

Book Chapters

Kamath C, E Cantu-Paz, SS Cheung, **IK Fodor**, and NA Tang, "Experiences in Mining Data from Computer Simulations", Chap 10 in *New Generation of Data Mining Applications*, Wiley-IEEE Press, Kantardzic M and Zurada J (Editors), (2005), pp. 211-32. UCRL-BOOK-200043.

Fodor IK and C Kamath, "The Role of Multiresolution in Mining Massive Image Datasets", in *Multiscale and Multiresolution Methods, Lecture Notes in Computational Science and Engineering*, Springer-Verlag, (2001), pp. 307-317. UCRL-JC-139713.

Kamath C, E Cantu-Paz, **IK Fodor** and NA Tang, "Searching for Bent-Double Galaxies in the FIRST Survey", in *Data Mining for Scientific and Engineering Applications*, Kluwer Academic Publishers, (2001), pp. 95-114. UCRL-JC-140418.

Technical Reports and Conference Proceedings

Various Genentech internal technical reports, 2007-2010.

Fodor IK, AE Holtz-Morris, SL McCutchen-Maloney, "Improving current microbial pathway models by statistical modeling of phenotype array experiments", *Proc IEEE International Workshop on Genomic Signal Processing and Statistics*, pp. 37-38, 2006. UCRL-PROC-217869.

Fodor IK, AE Holtz-Morris, SL McCutchen-Maloney, "Growth curve models for the analysis of phenotype arrays for a systems biology overview of *Yersinia pestis*", *Proc American Statistical Association*, Biopharmaceutical Section, 2005. UCRL-PROC-215338.

Fodor IK and DO Nelson, "Leveraging genomics software to improve proteomics results", *LLNL Technical Report*, September 2005. UCRL-TR-215176.

Chromy B, Zhang C, Clatworthy A, Forde C, Holtz-Morris A, Montgomery K, **IK Fodor**, et al, "Improved detection, surveillance, and threat characterization via host-pathogen interaction studies", *Proc 1st Annual National Homeland Security R&D Conference*, Research and Development Partnerships in Homeland Security, April 2005. UCRL-PROC-211890.

Holtz AE, **IK Fodor**, JP Fitch, SL McCutchen-Maloney, "Metabolic differences in *Yersinia pestis* as a function of temperature and calcium detected by phenotype arrays", *American Society of Cell Biology Annual Meeting*, 2004. UCRL-ABS-205617. **Fodor IK** and C Kamath, "Independent Component Analysis for the Separation of Signals in Global Temperature Series", *LLNL Technical Report*, 2004. UCRL-JC-151613.

Kamath C, **IK Fodor**, E Cantu-Paz, "Feature Selection in Scientific Applications", Technical Brochure, *Supercomputing Conference*, Phoenix, AZ, November 2003. UCRL-BR-200894.

Fodor IK, "Statistical Techniques to Find Similar Objects in Images", *Proc American Statistical Association*, Statistical Computing Section, October 2003. UCRL-PROC-200388.

Fodor IK and C Kamath, "Using Independent Component Analysis to Separate Signals in Climate Data", *Proc Independent Component Analysis, Wavelets, and Neural Networks, SPIE Aerosense*, Orlando, pp.25-36, April 2003. UCRL-JC-151808.

Fodor IK and C Kamath, "Efficient Segmentation of Spatio-Temporal Data from Simulations," *Proc Image and Video Communications and Processing, SPIE Electronic Imaging*, vol. 5022, pp. 366-376, San Jose, January 2003. UCRL-JC-148906.

Gyaourova A, C Kamath and **IK Fodor**, "Undecimated Wavelet Transforms for Image De-Noising", *LLNL Technical Report*, 2002. UCRL-ID-150931.

Fodor IK, "A Survey of Dimension Reduction Techniques", *LLNL Technical Report*, 2002. UCRL-ID-148494.

Fodor IK and C Kamath, "Separation of Climate Signals", Technical Brochure, *Supercomputing Conference*, Baltimore, MD, November 2002. UCRL-ID-150775.

Fodor IK, "On the Use of Independent Component Analysis to Separate Meaningful Sources in Global Temperature Series", *LLNL Technical Report*, 2002. UCRL-JC-146972.

Fodor IK and C Kamath, "Simple Dimension Reduction Techniques in Data Mining", *Proc Signal and Imaging Sciences Workshop, Center for Advanced Signal and Imaging Sciences*, LLNL, 2001. UCRL-PRES-146035.

Fodor IK and C Kamath, "A Comparison of Denoising Techniques for FIRST Images", *Proc Third Workshop on Mining Scientific Datasets, First SIAM International Conference on Data Mining*, pp. 13-20, 2001. UCRL-JC-142085.

Kamath C and **IK Fodor**, "Dimension Reduction and Sampling in the Scientific Data Management Center (SDM-ISIC)", *SDM-ISIC Kickoff meeting*, Berkeley, July 2001. UCRL-PRES-144537.

Kamath C, E Cantu-Paz, **IK Fodor**, NA Tang, "Using Data Mining to Find Bent-Double Galaxies in the FIRST Survey", *Astronomical Data Analysis, SPIE Annual Meeting*, San Diego, August 2001. UCRL-JC-143458.

Fodor IK and C Kamath, "On Denoising Images Using Wavelet-Based Statistical Techniques", *LLNL Technical Report*, 2001. UCRL-JC-142357.

Fodor IK and C Kamath, "Wavelet Denoising Methods in Sapphire", *Proc Signal and Imaging Sciences Workshop, Center for Advanced Signal and Imaging Sciences*, LLNL, 2000. UCRL-JC-141298.

Kamath C, C Baldwin, **IK Fodor** and NA Tang, "On the Design and Implementation of a Parallel, Object-Oriented Image Processing Toolkit", *Proc Parallel and Distributed Methods for Image Processing IV, SPIE Annual Meeting*, 2000. UCRL-JC-138953.

Fodor IK, E Cantu-Paz, C Kamath and NA Tang, "Finding Bent-double Radio Galaxies: A Case Study in Data Mining", *Computing Science and Statistics, vol. 32: Modeling the Earth's Systems: Physical to Infrastructural*, Eds EJ Wegman and Y Martinez, pp. 37-47, 2000. UCRL-JC-138071.

Fodor IK, Spectrum Estimation in Helioseismology, PhD thesis, University of California, Berkeley, 170 pp, 1999.

Fodor IK, PB Stark, "Multitaper Spectrum Estimates for Time Series with Missing Values", *Computing Science and Statistics, vol. 31: Models, Predictions, and Computing*, Eds K Berk and M Pourahmadi, (1999), pp. 383-387.

Fodor IK and PB Stark, "Multitaper Spectrum Estimates", *Proc SOHO6/GONG98 Workshop on the Structure and Dynamics of the Interior of the Sun and Sun-Like Stars*, ESA Special Publication SP-418, **1** (1998), pp. 171-176.

Komm RW, E Anderson, F Hill, R Howe, AG Kosovichev, PH Scherrer, J Schou, **IK Fodor**, and PB Stark, "Comparison of SOHO-SOI/MDI and GONG Spectra", *Proc SOHO6/GONG98 Workshop on the Structure and Dynamics of the Interior of the Sun and Sun-Like Stars*, ESA Special Publication SP-418, **1** (1998), pp. 253-256.

Komm RW, E Anderson, F Hill, R Howe, **IK Fodor** and PB Stark, "Multitaper Analysis Applied to a 3-Month Time Series", *Proc SOHO6/GONG98 Workshop on the Structure and Dynamics of the Interior of the Sun and Sun-Like Stars*, ESA Special Publication SP-418, **1** (1998), pp. 257-260.

Komm RW, Y Gu, F Hill, PB Stark, and **IK Fodor**, "Multitaper Spectral Analysis and Wavelet Denoising Applied to Helioseismic Data", *Proc Tenth Cambridge Workshop on Cool Stars, Stellar Systems and the Sun*, ASP Conference Series, **154** (1998), CDR pp. 783-790.

Fodor IK, JG Berryman, and PB Stark: "Comparison of Autoregressive and Multitaper Spectral Analysis for Long Time Series", *Stanford Exploration Project*, **95** (1997), pp. 331-355.

Presentations

Forrest W and **IK Fodor**, "Comparability of degradation profiles for two vial configurations of a marketed monoclonal antibody", First Nonclinical Biostatistics Conference, Boston, MA, October 2009

Fodor IK and W Forrest, "Statistical methods for the analysis of RNAi screens", Joint Statistical Meetings, Denver, CO, August 2008.

Fodor IK, "Introduction to the Enzyme-linked Immunosorbent (ELISA) assay and its use at Genentech", Genentech internal seminar, March 2008.

Fodor IK, "Systems biology insights from host-pathogen interaction studies", invited presentation, Systems Biology: The 39th Symposium on the Interface of Computing Science and Statistics, Philadelphia, PA, May 2007.

Fodor IK, "Phenotypic characterization of *Yersinia pestis*", invited presentation, University of California, San Francisco, November 2006.

Fodor IK, Corzett TH, Choi M, Walsworth VL, Turteltaub KW, McCutchen-Maloney SL, "Technical, longitudinal and genetic variation in proteomic analysis of human plasma", Joint Statistical Meetings, August 2006, UCRL-ABS-218476.

Fodor IK, "Host-pathogen science: statistical opportunities", invited presentation, Workshop on Computational and Statistical Genomics, Banff International Research Station, Banff, Canada, July 2006

Fodor IK, "Statistical Methods for the Analysis of Two-dimensional Differential Gel Electrophoresis and Phenotype Array Experiments", invited presentation, University of California, San Francisco, December 2005. UCRL-PRES-208384.

Fodor IK, AE Holtz, SL McCutchen-Maloney, DO Nelson, "Phenotype Array Experiments to Improve Current Genome Annotations", Computation Directorate Research and Technology Showcase, LLNL, Livermore, CA, November 2005. UCRL-POST-215758.

Fodor IK, "Using Statistical Growth-Curve Models to Quantify the Information in Phenotype Microarray Experiments", Joint Statistical Meetings, Minneapolis, MN, August 2005. UCRL-PRES-214250.

Fodor IK, "Statistical Challenges in Two Post-Genomic Technologies: 2D Difference Gel Electrophoresis and Phenotype Microarrays", invited presentation, Department of Statistics, University of California, Davis, January 2005. UCRL-PRES-208384.

Fodor IK, "Statistical Challenges in the Analysis of 2D Difference Gel Electrophoresis Experiments", invited presentation, Statistics and Genomics Seminar, Biostatistics Division, University of California, Berkeley, October 2004. UCRL-PRES-208384.

Fodor IK, "Statistical Issues in 2D Difference Gel Electrophoresis Experiments", Division Meeting, Center for Applied Scientific Computing, LLNL, September 2004. UCRL-PRES-208384.

Fodor IK, "Statistical Techniques to Quantify Shape Similarity", Signal and Imaging Sciences Workshop, LLNL, November 2003. UCRL-PRES-150776.

Fodor IK, "Using Independent Component Analysis to Separate Signals in Climate Data", invited presentation, Neyman Seminar, Department of Statistics, University of California, Berkeley, November 2003. UCRL-PRES-151808.

Fodor IK "Challenges and Opportunities in Scientific Data Mining", invited presentation, VIGRE Seminar, Department of Statistics, University of California, Berkeley, October 2003. UCRL-PRES-200590.

Fodor IK and C Kamath, "Independent Component Analysis Generalization", SDM ISIC All-Hands Meeting, Argonne National Laboratory, Chicago, IL, August 2003. UCRL-PRES-200038.

Fodor IK, "Statistical Techniques to Find Similar Objects in Images", Joint Statistical Meetings, San Francisco, CA, August 2003, UCRL-PRES-154621.

Fodor IK and C Kamath, "Using Independent Component Analysis to Separate Signals in Climate Data", Independent Component Analysis, Wavelets, and Neural Networks, SPIE Aerosense, Orlando, FL, April 2003. UCRL-PRES-151808.

Fodor IK and C Kamath, "Efficient Segmentation of Spatio-Temporal Data from Simulations", Image and Video Communications and Processing, SPIE Electronic Imaging, San Jose, January 2003. UCRL-PRES-148906.

Fodor IK and C Kamath, "Independent Component Analysis in the Atmospheric Sciences", Signal and Imaging Sciences Workshop, LLNL, November 2002. UCRL-PRES-150776.

Fodor IK and C Kamath, "Dimension Reduction and Sampling in the Scientific Data Management Center", SDM ISIC All-Hands Meeting, San Diego, CA, September 2002. UCRL-PRES-149962.

Fodor IK, "On the Use of Independent Component Analysis to Separate Meaningful Sources in Global Temperature Series", Joint Statistical Meetings, New York, NY, August 2002. UCRL-PRES-146972.

Fodor IK and C Kamath, "Dimension Reduction and Sampling in the Scientific Data Management Center", SDM ISIC All-Hands Meeting, Gatlinburg, TN, March 2002. UCRL-PRES-147626.

Fodor IK and C Kamath, "Exploring the Use of Wavelet Thresholding for Denoising Images", Mathematical Challenges in Scientific Data Mining workshop, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA, January 2002. UCRL-PRES-145671.

Fodor IK and C Kamath, "Mining the FIRST Astronomical Survey", Mathematical Challenges in Scientific Data Mining workshop, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA, January 2002. UCRL-PRES-145672.

Fodor IK and C Kamath, "Simple Dimension Reduction Techniques in Data Mining", Signal and Imaging Sciences Workshop, Center for Advanced Signal and Imaging Sciences, LLNL, November 2001. UCRL-PRES-146035.

Fodor IK, "The Benefits of Data Mining in the FIRST Astronomical Survey", invited presentation, RAND Statistics Seminar Series, Santa Monica, CA, October 2001. UCRL-PRES-145673.

Fodor IK, "Statistical Issues in Data Mining", Fifth North American Meeting of New Researchers in Statistics and Probability, Atlanta, GA, August 2001. UCRL-JC-142212-abs.

Fodor IK and C Kamath, "A Comparison of Denoising Techniques for FIRST Images", Third Workshop on Mining Scientific Datasets, First SIAM International Conference on Data Mining, Chicago, IL, April 2001. UCRL-VG-142085.

Fodor IK and C Kamath, "Nonlinear Methods in Data Mining: Comparison of 2D Wavelet Denoising Methods", MSRI Workshop on Nonlinear Estimation and Classification, Berkeley, CA, March 2001. UCRL-JC-141738-abs.

Fodor IK and C Kamath, "Wavelet Denoising Methods in Sapphire", Signal and Imaging Sciences Workshop, Center for Advanced Signal and Imaging Science, LLNL, Livermore, CA, November 2000. UCRL-VG-141298.

Fodor IK and C Kamath, "The Role of Multiresolution in Mining Massive Image Datasets", Yosemite Educational Symposium on Advanced Multiscale and Multiresolution Methods, Yosemite National Park, CA, October 2000. UCRL-VG-139713.

Kamath C, C Baldwin, **IK Fodor** and NA Tang, "On the Design and Implementation of a Parallel, Object-Oriented Image Processing Toolkit", Parallel and Distributed Methods for Image Processing IV, SPIE Annual Meeting, San Diego, CA, July 2000. UCRL-VG-138953.

Fodor IK, E Cantu-Paz, C Kamath and NA Tang, "The Search for Bent-Double Galaxies: Latest Results", Second Workshop on Mining Scientific Datasets, Army High Performance Computing Research, Minneapolis, MN, July 2000. UCRL-VG-139561.

Fodor IK, E Cantu-Paz, C Kamath and NA Tang, "Finding Bent-double Radio Galaxies: A Case Study in Data Mining", Computing Science and Statistics, The 32nd Symposium on the Interface: Computing Science and Statistics, New Orleans, LA, April 2000. UCRL-JC-138071.

Fodor IK, PB Duffy, BD Santer, C Kamath and C Baldwin, "Effect of Missing Data on Estimates of Near-Surface Temperature Change Since 1860", American Geophysical Union Meeting, San Francisco, CA, December 1999. UCRL-VG-135586.

Fodor IK, "Multitaper Spectrum Estimates for Time Series with Missing Values", The 31st Symposium on the Interface: Computing Science and Statistics, Chicago, IL, June 1999.

Fodor IK, "Spectrum Estimation for Observations with Incomplete Coverage", Neyman Seminar, Department of Statistics, University of California, Berkeley, CA, March 1999.

Fodor IK, "Teaching Statistics", Teaching and Orientation Conference for Graduate Student Instructors, University of California, Berkeley, CA, August 1998.

Fodor IK, "Multitaper Spectrum Estimates", SOHO6/GONG98 Workshop on the Structure and Dynamics of the Interior of the Sun and Sun-Like Stars, Boston, MA, June 1998.

Fodor IK, "Estimation of Solar Oscillation Eigenfrequencies", Lucent Technologies / Bell Labs Research Academic Forum, Murray Hill, NJ, January 1998.

Fodor IK, "Innovative Techniques: Multitaper Methods", Joint GONG/SOI Workshop on Resonant Mode Identification, Stanford, CA, December 1997.

Fodor IK, L Tenorio, "Power Spectrum Estimation of Cosmic Microwave Background Fluctuations", 51st Session of the International Statistical Institute, Istanbul, Turkey, August 1997. Based on collaboration with George Smoot of Lawrence Berkeley National Laboratory who shared the 2006 Nobel Prize in Physics for the "discovery of the blackbody form and anisotropy of the cosmic microwave background radiation".

Patents

Kamath C, CH Baldwin, **IK Fodor**, NA Tang, US Patent 6,879,729 "Parallel object-oriented denoising system using wavelet multiresolution analysis", 2005.

PROFESSIONAL MEMBERSHIPS

American Statistical Association (ASA)

Institute of Mathematical Statistics (IMS)

PROFESSIONAL ACTIVITIES

Nonclinical Biostatistics Leaders' Forum Steering Committee, 2010

Genentech Scholars Program Committee, 2010

NIH/NCI Review Panel for Genome Characterization Centers and Genome Data Analysis Centers for The Cancer Genome Atlas Research Network, 2009

Institute of Mathematical Statistics, The IMS Representative to the AAAS Section in Information, Computing, and Communications, 2006-2008

Institute of Mathematical Statistics, Committee on New Researchers, 2003-2006

LLNL Computation Directorate Strategic Planning Committee, 2005

LLNL Computation Directorate Postdoctoral Program Deputy, 2003

Reviewer for IEEE Trans Signal Processing; IEEE Proc Vision, Image, and Signal Proc; IEEE Trans Pattern Analysis and Machine Intelligence; Computational Statistics and Data Analysis; Bioinformatics; BMC Bioinformatics; IEEE/ACM Trans Computational Biology and Bioinformatics

LANGUAGE SKILLS

Fluent in Hungarian (native language), Romanian, and English

Twelve years of German, four years of French, one year of Latin

SELECTED HONORS AND AWARDS

LLNL Computation Directorate Grant, "Leveraging Genomic Software Technology to Improve Proteomic Results", 2005

LLNL Computation Directorate Grant, "Example Application of Data Mining to Detect Anomalies in Large Data Streams", with T Bartoletti, 2004

LLNL Institute for Scientific Computing Research (ISCR) Grant 05-01, "A Regularization Approach to Nonrigid Structure from Motion", with Prof S Belongie, Department of Computer Science and Engineering, UCSD, 2005

LLNL ISCR Grant 04-03, "Feature-Based Approaches for Long-Range Motion Segmentation and Object Tracking, with Prof S Belongie, EECS, UCSD, 2004

LLNL ISCR Grant 03-00, "Computationally Efficient Example-Based Image Segmentation", with Prof S Belongie, EECS, UCSD, 2003

LLNL ISCR 02-09 Grant, "Similarity Search and Indexing in Very Large Image Databases", with Prof B Manjunath, Department of Electrical Engineering and Computer Science, UCSB, 2002

LLNL ISCR 01-08 Grant, "Similarity Search and Indexing in Very Large Image Databases", with Prof B Manjunath, EECS, UCSB, 2001

LLNL ISCR 00-14 Grant, "Tailor-Made Virtual Libraries", with Prof B Manjunath, EECS, UCSB, 2000

Outstanding Graduate Student Instructor, University of California, Berkeley, 1998

National Science Foundation Graduate Research Fellowship in the Mathematical Sciences, 1994–97

AT&T Bell Laboratories Graduate Research Grant, 1994–99

National Science Foundation Undergraduate Research Fellowship in Mathematics, 1993

Hans Lagerloef Scholarship, 1993

Rutgers University Alumni Scholarship, 1993

Rutgers College Merit Scholarship, 1992, 1993

Rutgers College Deans' Award for Excellence (Perfect 4.0 GPA), 1991

Rutgers College Deans' List, 1991-1994

SELECT CONTINUING EDUCATION AND CONFERENCE PARTICIPATION

Development Directors' Forum, Genentech Internal Training, South San Francisco, CA, 2009

Genentech Internal Training, South San Francisco, CA, 2008

- Crucial Conversations, Situational Leadership, Leading the Business

IBC's 16th annual Bioassay Conference, San Francisco, CA, Spring 2008

Emerging Statistical Challenges in Genome and Translational Research, Banff, Canada, Spring 2008

Business and Technical Writing, Vincler Communications, Pleasanton, CA, Fall 2007

Principles of Molecular Biology, UC Berkeley Extension X107A, Berkeley, CA, Fall 2005

Biology and Mathematics in the Bay Area, UCSF, San Francisco, CA, December 2005

Advanced Computing in R, XL Solutions Training, San Francisco, CA, March 2005

Difference Gel Electrophoresis User's Meeting, GE Healthcare, Foster City, CA, July 2004

Supervision II: People, Performance, and Problem Solving, LLNL, Livermore, CA, March 2004

IEEE Visualization Conference, Seattle, WA, October 2003

Workshop on Statistical Inference, Computing and Visualization for Graphs, Institute of Mathematical Statistics, Stanford, CA, August 2003

Third SIAM International Conference on Data Mining, Society for Industrial and Applied Mathematics, San Francisco, CA, May 2003

Representations and Algorithms for Computational Molecular Biology, Computer Science 274/Biomedical Informatics 214, Stanford, CA, Spring 2002

3rd International Conference on Independent Component Analysis and Blind Signal Separation, Institute for Neural Computation, University of California, San Diego, CA, December 2001

Harvard Management Mentor Program, CyberLearning Universe, Summer 2001

Presenting Data and Information, Stanford, CA, June 2001

First SIAM International Conference on Data Mining, Society of Industrial and Applied Mathematics, Chicago, IL, April 2001

Edge Conference, University of California, Berkeley, CA, October 2000

Statistics for Large Data Sets Workshop, National Center for Statistics in the Environment and the Geophysical Statistics Project, Boulder, CO, July 2000

Signal and Imaging Sciences Workshop, Center for Advanced Signal and Imaging Sciences, LLNL, November 1999

Fundamentals of Automatic Target Recognition, The International Society for Optical Engineering (SPIE) Series of Optics Short Courses on Aerospace Science and Sensing, LLNL, CA, November 1999

Multispectral Image Processing, SPIE Series of Optics Short Courses, LLNL, CA, October 1999

C++ and Object-Oriented Programming, Stanford Center for Professional Development, CA, 1999

NASA Workshop on Data Fusion and Data Mining, NASA Ames Research Center, Moffett Field, CA, July 1999

Data Mining Short Course, The 31st Symposium on the Interface: Computing Science and Statistics, Chicago, IL, June 1999

Using the Livermore Computing Machines, with an Emphasis on IBM SPs: Tutorials and Lectures, LLNL, CA, June 1999

Introduction to Digital Image Processing, SPIE Series of Short Courses, LLNL, CA, Spring 1999

Fuzzy and Neural Pattern Recognition, SPIE Series of Short Courses, LLNL, CA, Spring 1999

The Conference on High Speed Computing for Los Alamos and LLNL, Salishan Lodge, OR, April 1999

REFERENCES Available upon request