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ERIC D. KOLACZYK

Curriculum Vitae

Department of Mathematics and Statistics
Boston University
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Boston, MA 02215

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EDUCATION

1994 Ph.D. Statistics, Stanford University, Stanford, CA
1992 M.S. Statistics, Stanford University, Stanford, CA
1990 B.S. Mathematics, The University of Chicago, Chicago, IL

ACADEMIC POSITIONS

2009 – present **Professor**, Department of Mathematics and Statistics, Boston University

2003 – 2009 **Associate Professor**, (with tenure).
Department of Mathematics and Statistics, Boston University

2002 – present **Director**, Program in Statistics
Department of Mathematics and Statistics, Boston University

Spring 2005 **Visiting Associate Professor**, Department of Statistics, Harvard University

Fall 2004 **Visiting Research Associate**, Laboratoire d'Informatique Algorithmique,
Fondements, et Applications (LIAFA), l'Université Paris 7, France.

1998 – 2003 **Assistant Professor**, Department of Mathematics and Statistics,
Boston University

1997 – 1998 **Visiting Assistant Professor**, Department of Statistics, Harvard University

1994 – 1998 **Assistant Professor**, Department of Statistics, The University of Chicago

ACADEMIC AFFILIATIONS

Member, Center for Biodynamics, Boston University
Member, Bioinformatics Program, Boston University
Member, Division of Systems Engineering, Boston University

AWARDS & HONORS

| | |
|---------|---|
| 2006 | Senior Member (Elected), Institute of Electronics and Electrical Engineers (IEEE) |
| 1996 | Project Kaleidoscope Faculty for the 21 st Century |
| 1993 | Stanford University Centennial Teaching Assistant Award |
| 1990 | Sigma Xi, Associate Member |
| 1990 | Mulvaney Scholar Athlete, The University of Chicago |
| 1988-90 | University of Chicago Stagg Scholarship |

RECENT RESEARCH GRANTS

(Currently PI/CoPI on active awards totaling \$2.4M)

- 2009 – 2012 Office of Naval Research grant, “Statistical Propagation of Low-Level Uncertainty to High-Level Knowledge and Decision-Making in Network Information Environments.” (Kolaczyk)
- 2009 – 2012 National Science Foundation grant, “Wide-Aperture Traffic Analysis for Internet Security.” (Crovella (PI), Kolaczyk, Barford (UWisc))
- 2006 – 2011 National Institutes of Health grant, “Predicting drug mechanism via chemo-genomic profiling and sparse simultaneous equation models of gene regulation.” (Kolaczyk (PI), Schaus, Collins)
- 2003 – 2009 National Science Foundation grant, “Modular strategies for internetwork monitoring.” (BU Sub-award: Kolaczyk (PI), Crovella; 7 (co)PIs at UMich, UWisc, and BU.)
- 2005 – 2009 Office of Naval Research grant, “Statistical aspects of information integration for net-centric environments.” (Kolaczyk)
- 2003 – 2007 National Science Foundation grant, “Complexity of spatial and categorical scale in land cover characterization: a statistical and computational framework. (Kolaczyk (PI), Gopal, Shekhar)
- 2002 – 2005 Office of Naval Research grant, “A multiscale framework for whole-network information superiority: representation, analysis, and inference.” (Kolaczyk)
- 2001 – 2002 National Science Foundation REU supplement grant to “A multiscale framework for spatial modeling in geography.” (Kolaczyk (PI), Gopal)
- 2001 – 2003 National Science Foundation grant, “A multiscale framework for spatial modeling in geography.” (Kolaczyk (PI), Gopal)

PUBLICATIONS

Books

Kolaczyk, E.D. (2009). *Statistical Analysis of Network Data: Methods and Models..* Springer, New York.

Manuscripts

Yang, S. and Kolaczyk, E.D. (2009). Target detection via network filtering. Submitted to *IEEE Transactions on Information Theory*.

Jiang, X., Gold, D.L., and Kolaczyk, E.D. (2009). Network-based auto-probit modeling for protein function prediction. *Biometrics*, (under revision).

Scott, C. and Kolaczyk, E.D. (2007). Nonparametric assessment of contamination in multivariate data using generalized quantile sets and FDR. *Journal of Computational and Graphical Statistics*, (revised; under review).

Di, J., and Kolaczyk, E.D. (2007). Complexity-penalized estimation of minimum volume sets for dependent data. *Journal of Multivariate Analysis* (revised; under review).

Published Papers

Kramer, M.A., Eden, U.T., Cash, S.S., and Kolaczyk, E.D. (2009). Network inference – with confidence – from multivariate time series. *Physical Review E*, 79, 061916.

Gandhi, V., Kang, J.M., Shekhar, S., Ju, J., Kolaczyk, E.D., and Gopal, S. (2009). Context-inclusive function evaluation: A case study with EM-based multi-scale multi-granular image classification. *Knowledge and Information Systems*, doi10.1007/s10115-009-0208-0.

Kolaczyk, E.D., Chua, D.B., and Barthelemy, M. (2009). Group-betweenness and cobetweenness: Inter-related notions of coalition centrality. *Social Networks*, 31:3, 190-203.

Xiang, J., Nariai, N., Steffen, M., Kasif, S., Gold, D., and Kolaczyk, E.D. (2008). Combining hierarchical inference in ontologies with heterogeneous data sources improves gene function prediction. *Proceedings of the IEEE International Conference on Bioinformatics and Biomedicine*.

Cosgrove, E.J., Zhou, Y-C., Gardner, T.S., and Kolaczyk, E.D. (2008). Drug target prediction via Lasso regression analysis of mRNA expression compendia. *Bioinformatics*, 24(21):2482-2490.

Jiang, X., Steffen, M., Kasif, S., and Kolaczyk, E.D. (2008). Integration of relational and hierarchical network information for protein function prediction. *BMC Bioinformatics*, 9, 350.

Kramer, M.A., Kolaczyk, E.D., and Kirsch, H.E. (2008). Emergent network topology at seizure onset in humans. *Epilepsy Research*, 79, 173-186.

Chhabra, P., Scott, C., Kolaczyk, E., Crovella, M. (2008). Distributed spatial anomaly detection. *Proceedings of the IEEE INFOCOM*, Phoenix, AZ.

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Scott, C. and Kolaczyk, E.D. (2007). Annotated minimum volume sets for nonparametric anomaly discovery. *Proceedings of the IEEE Statistical Signal Processing Workshop*. Madison, WI.

Nariai, N., Kolaczyk, E.D., and Kasif, S. (2007). Probabilistic model for protein function prediction from multiple types of genome-wide data. *PLoS ONE*, 2:3, e337.

Viger, F., Barrat, A., Dall'Asta, L., Zhang, C-H., and Kolaczyk, E.D. (2007). What is the real size of a sampled network? The case of the Internet. *Physical Review E*, 75, 056111.

Chua, D.B., Kolaczyk, E.D., and Crovella, M. (2006). Network kriging. *IEEE Journal on Selected Areas in Communications, Special Issue on Sampling the Internet*, 24:12, 2263-2272.

Louie, M.M. and Kolaczyk, E.D. (2006). Multiscale detection of localized anomalous structure in aggregate disease incidence data. *Statistics in Medicine*, 25:5, 787-810.

Louie, M.M. and Kolaczyk, E.D. (2006). A multiscale method for disease mapping in spatial epidemiology. *Statistics in Medicine*, 25:8, 1287-1306.

Kolaczyk, E.D., Ju, J., and Gopal, S. (2005). Multiscale, multigranular statistical image segmentation. *Journal of the American Statistical Association*, 100, 1358-1369.

Ju, J., Gopal, S., and Kolaczyk, E.D. (2005). On the choice of spatial and categorical scale in remote sensing land cover characterization. *Remote Sensing of Environment*, 96:1, 62-77.

Chua, D., Kolaczyk, E.D., and Crovella, M. (2005). Efficient estimation of end-to-end network properties. *Proceedings of the IEEE Infocom 2005*.

Kolaczyk, E.D. and Nowak, R.D. (2005). Multiscale generalized linear models for nonparametric function estimation. *Biometrika*, 92:1, 119-133.

Kolaczyk, E.D. and Nowak, R.D. (2004). Multiscale likelihood analysis and complexity penalized estimation. *Annals of Statistics*, 32, 500-527.

Lakhina, A., Papagiannaki, K., Crovella, M., Diot, C., Kolaczyk, E.D., and Taft, N. (2004). Structural analysis of network traffic flows. *Proceedings of the ACM Sigmetrics 2004*.

Louie, M.M. and Kolaczyk, E.D. (2004). On the covariance properties of certain multiscale spatial processes. *Statistics and Probability Letters*, 66:4, 407-416.

Kolaczyk, E.D. (2003). On the use of prior and posterior information in the sub-pixel proportion problem. *IEEE Transactions on Geoscience and Remote Sensing*, 41(11), 2687-2691.

Crovella, M. and Kolaczyk, E.D. (2003). Graph wavelets for spatial traffic analysis. *Proceedings of the IEEE Infocom 2003*.

Kolaczyk, E.D. and Nowak, R.D. (2003). Multiscale statistical models. In *Nonlinear Estimation and Classification*, Denison *et al.* (eds.). Springer-Verlag: New York.

Kolaczyk, E.D. (2003). Bayesian multiscale methods for Poisson count data. In *Statistical Challenges in Modern Astronomy III*, Babu and Feigelson (eds.). Springer-Verlag: New York.

Kolaczyk, E.D. (2003). Comment on "Wavelet-based nonparametric modeling of hierarchical functions in colon carcinogenesis." *Journal of the American Statistical Association*, 98, 585-587.

Ju, J., Kolaczyk, E.D., and Gopal, S. (2002). Gaussian mixture discriminant analysis and sub-pixel land cover classification in remote sensing. *Remote Sensing of Environment*, 84(4), 550-560.

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Morales, C.J. and Kolaczyk, E.D. (2002). Wavelets-based fractal analysis of human balance. *Annals of Biomedical Engineering*, 30, 588-597.

Nowak, R.D. and Kolaczyk, E.D. (2002). Multiscale maximum penalized likelihood. *Proceedings of the 2002 IEEE International Symposium on Information Theory*.

Ju, J., Kolaczyk, E.D., and Gopal, S. (2002). Gaussian mixture discriminant analysis and sub-pixel land cover classification in remote sensing. *Proceedings of the 34th Annual Conference on the Interface of Computing Science and Statistics*, Montreal, Canada.

Kolaczyk, E.D. and Huang, H. (2001). Multiscale statistical models for hierarchical spatial aggregation. *Geographical Analysis*, 33:2, 95-118.

Nowak, R.D. and Kolaczyk, E.D. (2000). A Bayesian multiscale framework for Poisson inverse problems. *IEEE Transactions on Information Theory*, 46:5, 1811-1825.

Kolaczyk, E.D. and Dixon, D.D. (2000). Nonparametric estimation of intensity maps using Haar wavelets and Poisson noise characteristics. *The Astrophysical Journal*, 534:1, 490-505.

Kolaczyk, E.D. and Nowak, R.D. (2000). Reconstruction in emission tomography via a Bayesian multiscale statistical framework. *Proceedings of 45th Annual SPIE Conference*, San Diego, CA.

Nowak, R.D., Kolaczyk, E.D., Lalush, D. and Tsui, B. (2000). A Bayesian multiscale framework for SPECT. *Proceedings of the IEEE Medical Imaging Conference*, Seattle, WA.

Kolaczyk, E.D. (1999). Bayesian Multi-Scale Models for Poisson Processes. *Journal of the American Statistical Association*, 94, 920-933.

Nowak, R.D. and Kolaczyk, E.D. (1999). A Bayesian multiscale framework for Poisson inverse problems. *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing*.

Nowak, R.D. and Kolaczyk, E.D. (1999). Multiscale methods for Poisson inverse problems. *Proceedings of the IEEE Information Theory Workshop on Detection, Estimation, Classification, and Imaging*.

Kolaczyk, E.D. (1999). Some observations on the tractability of certain multiscale models. In *Bayesian Inference in Wavelet-Based Models*, Muller and Vidakovic (eds). Springer-Verlag: New York.

Dixon, D.D., Harmann, D.H., Kolaczyk, E.D., Samimi, J., Diehl, R., Kanbach, G., Mayer-Hasselwander, H., and Strong, A.W. (1998) Evidence for a gamma-ray halo. *New Astronomy*, 3:7, 539-561.

Kolaczyk, E.D. (1998) Wavelet Shrinkage Estimation of Certain Poisson Intensity Signals Using Corrected Thresholds. *Statistica Sinica*, 9, 119-135.

Nowak, R.D. and Kolaczyk, E.D. (1998). A multiscale MAP estimation method for Poisson inverse problems. *Proceedings of the 32nd Asilomar Conference on Signals, Systems, and Computers*.

Chipman, H.A., Kolaczyk, E.D., and McCulloch, R.E. (1997) Adaptive Bayesian Wavelet Shrinkage. *Journal of the American Statistical Association*, 92, 1413-1421.

Kolaczyk, E.D. (1997) Non-Parametric Estimation of Gamma-Ray Burst Intensities Using Haar Wavelets. *The Astrophysical Journal*, Vol. 483, 340-349.

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Kolaczyk, E.D. (1997) Methods for Analyzing Certain Poisson Signals and Images in Astronomy. *Proceedings of the 31st Asilomar Conference on Signals, Systems, and Computers*.

Hartmann, D.H., Dixon, D.D., Kolaczyk, E.D., and Samimi, J. (1997) Evidence for GeV emissions from the Galactic Center Fountain. *Proceedings of the 4th Compton Symposium: AIP Conference Proceedings*.

Dixon, D.D., Kolaczyk, E.D., Samimi, J. and Saunder, M.A. (1997) Non-parametric estimates of high energy gamma-ray source distributions. *Proceedings of the 4th Compton Symposium: AIP Conference Proceedings*.

Kolaczyk, E.D. (1996) A Wavelet Shrinkage Approach to Tomographic Image Reconstruction. *Journal of the American Statistical Association*, 91, 1079-1090.

Kolaczyk, E.D. (1996) Signal De-Noising Using Adaptive Bayesian Wavelet Shrinkage. *Proceedings of the 3rd IEEE-SP International Symposium on Time-Frequency Time-Scale Analysis*.

Kolaczyk, E.D. (1996) An Application of Wavelet Shrinkage to Tomography. In *Wavelets in Medicine and Biology*. Aldroubi and Unser (eds):CRC Press.

Kolaczyk, E.D. (1995) Comment on "Wavelet Shrinkage: Asymptopia?" *Journal of the Royal Statistical Society, Series B*, 57, 356.

Kolaczyk, E.D. (1994) Wavelet Shrinkage in Tomography. *Proceedings of the 16th Annual International Conference of the IEEE-EMBS*.

Kolaczyk, E.D. (1994) Empirical Likelihood and Generalized Linear Models. *Statistica Sinica*, 4, 199-218.

INVITED PRESENTATIONS

“Statistical Analysis of Network Data”. Institut de Statistique, l’Université Catholique de Louvain, Belgium. Two-week short-course. Sept/Oct 2009.

“Network Filtering with Application to Drug Target Prediction.” First IMS Asia-Pacific Rim Meeting. Seoul, Korea. June, 2009.

“Network-based Auto-probit Modeling for Protein Function Prediction.” Workshop on Network Modeling: Statistical Analysis of Network Data in Practice. Dublin, Ireland. June, 2009.

“Network Filtering with Application to Detection of Gene Drug Targets.” ENAR International Biometric Society Spring Meeting. San Antonio, Texas. March, 2009.

“Statistical Multiresolution Analysis of Internet Traffic on Graphs: Good Idea or Wishful Thinking?” Workshop on Multiscale Representation, Analysis and Modeling of Internet Data and Measurements. IPAM, UCLA, Los Angeles. September, 2008.

“Whole-Network Methods for Traffic Analysis and Anomaly Detection.” MITACS/MASCOS Joint Workshop on Fusion, Mining, and Security for Networks. McGill University. June, 2008.

“Distributed Spatial Anomaly Detection.” DIMACS/DyDAn Workshop on Internet Tomography. Rutgers University. May, 2008.

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“Network Filtering: Finding ‘Needles’ in Haystacks.” Workshop on Theoretical Aspects and Models of Large, Complex and Open Information Networks. ISI Foundation, Turin, Italy. November, 2007.

“Network Kriging.” Annual Joint Statistical Meetings. Salt Lake City, Utah. August, 2007.

“Multiscale, Multigranular Image Segmentation.” IS&T/SPIE 19th Annual Symposium on Electronic Imaging. San Jose, California. January, 2007.

“Multiscale, Multigranular Statistical Image Segmentation.” Graybill Conference. Fort Collins, Colorado. June, 2006.

“Network Kriging.” Network Science Conference. Bloomington, Indiana. May, 2006.

“Sampling Networks and the Inference of Network Characteristics.” Network Science Workshop. Bloomington, Indiana. May, 2006.

“Path-based Sampling and Inference in the Internet: Implications of Network Structure.” Classification Society of North America 2006 Meeting on Network Data Analysis and Data Mining. DIMACS Center, Rutgers University. May, 2006.

“On Network Sampling and Inference of Network Structure: A Case Study Using Traceroute and the Internet.” SAMSI Satellite Workshop on Dynamic Networks. Carnegie Mellon, Pennsylvania. April, 2006.

“Implications of Path-Based Sampling in the Internet.” National Academies of Science, Workshop on ‘Statistics on Networks’. Washington, D.C. September, 2005.

“Multiscale, Multigranular Image Analysis.” Annual Joint Statistical Meetings. Minneapolis, Minnesota. August, 2005.

“Efficient Monitoring of End-to-End Computer Network Traffic.” Graybill Conference. Fort Collins, Colorado. June, 2005.

“Empirical Analysis of Structure in Computer Network Traffic Flows”. 36th Symposium on the Interface of Computing and Statistics. Baltimore, Maryland. May 2004.

“Multi-Scale ‘Spatial’ Analysis of Computer Network Traffic Data.” IEEE Workshop on Statistical Signal Processing. St. Louis, Missouri. September 2003.

“Multi-Scale ‘Spatial’ Analysis of Computer Traffic Data on Network Graphs.” Annual Joint Statistical Meetings. San Francisco, California. August 2003.

Comment on “Wavelet-based nonparametric modeling of hierarchical functions in colon carcinogenesis.” Annual Joint Statistical Meetings. San Francisco, California. August 2003.

“Multiscale ‘Spatial’ Analysis of Network Data: Putting Wavelets on Graphs.” 35th Symposium on the Interface of Computing and Statistics. Salt Lake City, Utah. March 2003.

“Bayesian Multiscale Methods for Poisson Count Data.” Statistical Challenges in Modern Astronomy III. University of Pennsylvania. July 2001.

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“A Multiresolution Analysis for Likelihoods: Theory and Methods.” Workshop on Nonlinear Estimation and Classification. Mathematical Sciences Research Institute (MSRI), Berkeley, California. March 2001.

“Likelihood-based Multiscale Models for Spatial Data.” Annual National Radio Science Meeting. Boulder, Colorado. January 2001.

“Multiscale Statistical Modeling of Scale Effects.” First International Conference on Geographic Information Science. Savannah, Georgia. October 2000.

“Segmentation of Astronomical Time Series via a Bayesian Multiscale Framework.” Annual Joint Statistical Meetings. Indianapolis, Indiana. August 2000.

“Bayesian Multiscale Analysis via Recursive Partitioning.” 6th World Meeting of the International Society for Bayesian Analysis. Heraklion, Crete. June 2000.

“Multiscale Models for Hierarchical Aggregation of Spatial Data.” International Conference in Honor of Professor C.R. Rao. San Antonio, Texas. March 2000.

“Capturing Complex Scale Relationships Using Hierarchies: Some Problems in Astronomy and Geography.” Annual Meeting of the American Association for the Advancement of Science (AAAS). Washington, DC. February 2000.

“A Bayesian Multi-Scale Approach to Poisson Inverse Problems.” Annual Joint Statistical Meetings. Baltimore, Maryland. August 1999.

“Partition-Based Multi-Scale Models for Poisson Data.” 15th Annual New England Statistics Symposium. Storrs, Connecticut. April 1999.

“Bayesian Multi-Scale Models for Poisson Intensity Functions.” Annual Joint Statistical Meetings. Dallas, Texas. August 1998.

“Methods for Analyzing Certain Poisson Signals and Images in Astronomy.” The 31st Asilomar Conference on Signals, Systems, and Computers. November 1997.

“Wavelet Shrinkage Estimation of Poisson Intensities Using Corrected Thresholds, with Applications to Astronomical Signals and Images.” International Workshop on Wavelets in Statistics, Duke University. October 1997.

“Analysis of BATSE Data Using the Haar Transform and Poisson Noise Characteristics.” Converging Computing Methodologies in Astronomy Conference. Sonthofen, Germany. September 1997.

“Wavelet Shrinkage for Tomographic Image Reconstruction.” 40th Anniversary Meeting of the Society for Industrial and Applied Mathematics (SIAM). Stanford, California. July 1997.

“Wavelet Methods for Estimating the Intensity Profiles for Astronomical Gamma-Ray Bursts.” Regional Meeting of the American Mathematical Society, Detroit, Michigan. May 1997.

“Adaptive Bayesian Wavelet Shrinkage.” Annual Joint Statistical Meeting. Chicago, Illinois. August 1996.

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“Wavelet Shrinkage De-Noising: Variations on a Theme.” Annual SRCOS Meeting. Bismark, Arkansas. June 1996.

“Wavelet Shrinkage in Tomography.” 26th Conference on the Interface of Statistics and Computing. Raleigh, North Carolina. June 1994.

Also presented invited talks at Boston University, Brown University, Columbia University, Harvard-Smithsonian Center for Astrophysics, Harvard University, INRIA, L’Institut Henri Poincaré, Massachusetts Institute of Technology, Michigan State University, Northwestern University, Rice University, Rutgers University, Sprint Advanced Technology Laboratory, University of Chicago, University of Massachusetts-Amherst, University of Missouri-Columbia, University of Montreal, Université Joseph Fourier, Université Paris 6, Université Paris VII, University of Washington, University of Wisconsin-Madison, and Yale University.

STUDENTS

Boston University

- Carlos Morales Ph.D. 2002, Dept. of Mathematics & Statistics (1st Reader)
(Currently Vice-President & Quantitative Analyst,
Wellington Management LLC, Boston, MA)
- Mary Louie Ph.D. 2003, Dept. of Mathematics & Statistics (1st Reader)
(Currently Research Statistician, AIR Worldwide Corporation, Boston, MA)
- Junchang Ju Ph.D. 2004, Dept. of Geography (2nd Reader)
(Currently Postdoctoral Fellow, Geographical Information Science
Center for Excellence, South Dakota State University)
- Byron Shock Ph.D. 2004, Dept. of Cognitive and Neural Systems (3rd Reader)
- David Chua Ph.D. 2006, Dept. of Mathematics & Statistics (1st Reader)
(Currently Quantitative Analyst, State Street Bank, Boston, MA)
- Anukool Lakhina Ph.D. 2006, Dept. of Computer Science (3rd Reader)
(Currently founder and CEO, Guavas)
- Jasmine Zhou Ph.D. 2007, Dept. of Mathematics & Statistics (2nd Reader)
(Currently Postdoctoral Fellow, National Institute of Statistical Sciences,
Durham, NC)
- Jianing Di Ph.D. Jan 2008, Dept. of Mathematics & Statistics (2nd Reader)
(Currently Statistician, Johnson & Johnson Pharmaceutical Research
and Development, San Diego, CA)
- Xiaoyu Jiang Ph.D. Jan 2009, Dept of Mathematics & Statistics (1st Reader)
(Currently Statistician, Boehringer Ingelheim Pharmaceuticals , CT)
- Naoki Nariai (Current Ph.D. student, Program in Bioinformatics (2nd Reader))
- Elissa Cosgrove (Current Ph. D. student, Dept.of Biomedical Engineering (2nd Reader))
- Hawk Ding (Current Ph.D. student, Dept. of Mathematics & Statistics (1st Reader))
- Shu Yang (Current Ph.D. student, Dept. of Mathematics & Statistics (1st Reader))
- Wes Viles (Current Ph.D. student, Dept. of Mathematics & Statistics (1st Reader))
- Lisa Pham (Current Ph.D. student, Bioinformatics Program (1st Reader))

University of Chicago

- Vadim Kutsy M.S., 1996, Dept. of Statistics
Currently Statistician, Cytokinetics, Inc. (PhD, Univ. of Michigan-Ann Arbor)

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TEACHING EXPERIENCE

Boston University

Linear Models; Basic Statistics and Probability; Elementary Probability; Introduction to Stochastic Processes; Methods of Scientific Computing; Sampling Design; Statistics for Network Science; Statistical Learning; Art and Science of Quantitative Reasoning.

Harvard University

Regression Analysis and Modeling; Wavelet and Multiscale Methods for Statistical Estimation; Statistics for Network Science.

The University of Chicago

Linear Models and Experimental Design; Quantitative Reasoning; Spectral and Time-Frequency Methods; Statistical Methods and Their Applications; Statistical Consulting (Co-Director).

Stanford University

Introduction to Statistical Methods for Social Scientists.

PROFESSIONAL ACTIVITIES

Associate Editor, *IEEE Transactions on Image Processing* (January 2007 to present).

Associate Editor, *Statistics Surveys* (November 2008 to present).

Program Leader, SAMSI Program on Complex Networks, 2010-2011

Program Committee, IMS Section Co-Chair, 2008 Joint Statistical Meetings (JSM).

Technical Committee, 2003 IEEE Workshop on Statistical Signal Processing.

Panel reviewer for the National Institutes of Health (NIH), and the National Science Foundation.

Reviewer for grant proposals submitted to the Army Research Office (ARO), the National Science Foundation (NSF), the National Sciences and Engineering Research Council of Canada (NSERC), and the Council of Physical Sciences of the Netherlands Organization for Scientific Research (NWO).

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Reviewer for manuscripts submitted to various journals, including:

Statistics: *Annals of Applied Statistics, Annals of the Institute of Mathematical Statistics, Annals of Statistics, Bernoulli, Biometrika, Computational Statistics and Data Analysis, Environmental and Ecological Statistics, Journal of the American Statistical Association, Journal of Computational and Graphical Statistics, Journal of Nonparametric Statistics, Journal of the Royal Statistical Society, Journal of Statistical Planning and Inference, Probability Theory and Related Fields, Sankhya, Scandinavian Journal of Statistics, Statistica Sinica, Statistics in Medicine, and Test.*

Other: *Applied Econometrics, Astronomy and Astrophysics, The Astrophysical Journal, Bioinformatics, BMC Bioinformatics, European Physical Journal, Geographical Analysis, IEEE Signal Processing Letters, IEEE Transactions on Geoscience and Remote Sensing, IEEE Transactions on Image Processing, IEEE Transactions on Information Theory, IEEE Transactions on Medical Imaging, IEEE Transactions on Signal Processing, International Journal of Geographical Information Systems, Journal of Microscopy, SIAM Journal on Imaging, and Social Networks.*

Organized various sessions at the Annual Meeting of the American Association for the Advancement of Science (AAAS), the First SIAM Conference on Imaging Science, and the Joint Statistical Meetings (JSM).

Currently a member of the American Statistical Association (ASA), the Institute of Mathematical Statistics (IMS), and the Institute of Electrical and Electronics Engineers (IEEE).