7/18/2025

E R I C D. K O L A C Z Y K

Curriculum Vitae

Department of Mathematics and Statistics
Faculty of Science
McGill University

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Git: github.com/KolaczykResearch

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

Leadership:

2022 – now	Director, Computational & Data Systems Initiative, McGill
2020 – 2022	Director, Boston University Rafik B. Hariri Institute for Computing
2015 – 2020	Founding Director, MS in Statistical Practice (MSSP) program Department of Mathematics and Statistics, Boston University
2002 – 2019	Director, Program in Statistics Department of Mathematics and Statistics, Boston University

Faculty Appointments:

2022 – now	Professor, Department of Mathematics & Statistics, McGill University
2022 - now	Adjunct Professor, Department of Mathematics & Statistics, Boston University
2020 – 2022	Founding Member, Faculty of Computing and Data Sciences, Boston University
2009 – 2022	Professor, Department of Mathematics and Statistics, Boston University
2018 – 2020	Data Science Faculty Fellow, Boston University
2003 – 2009	Associate Professor (with tenure). Department of Mathematics and Statistics, Boston University
1998 – 2003	Assistant Professor, Department of Mathematics and Statistics, Boston University
1994 – 1998	Assistant Professor, Department of Statistics, The University of Chicago

Visiting Appointments:

2011- 2019	Visiting Professor, ENSAE, Paris, France. [One short-course per year.]
Fall 2011	Visiting Professor, l'Université d'Evry, France.
Spring 2005	Visiting Associate Professor, Department of Statistics, Harvard University
Fall 2004	Visiting Research Associate, LIAFA, l'Université Paris 7, France.
1997 – 1998	Visiting Assistant Professor, Department of Statistics, Harvard University

Affiliations

2023 – now Associate Academic Member, Mila -- Quebec AI Institute
2022 – now Member, Centre de recherche mathématiques, Laboratoire de statistique (Montreal)
2018 – 2022 Member, Graduate Program in Urban Biogeosciences & Environmental Health
2014 – 2022 Member, Hariri Institute for Computing & Computational Science & Engineering
2011 – 2022 Member, Program in Neuroscience, Boston University
2008 – 2022 Member, Division of Systems Engineering, Boston University
2005 – 2022 Member, Program in Bioinformatics, Boston University
2004 – 2022 Member, Center for Information & Systems Engineering, Boston University

AWARDS and HONORS

2020-2026	President-Elect/President/Past-president, New England Statistical Society
2020	Mosteller Statistician of the Year, Boston Chapter of the ASA
2017	Fellow (Elected), American Assoc. for the Advancement of Science (AAAS)
2017	Fellow (Elected), Institute of Mathematical Statistics (IMS)
2012	Gordon C. Ashton Memorial Lecturer, Biomathematics & Biostatistics Symposium, University of Guelph
2011	Fellow (Elected), American Statistical Association (ASA)
2011	Member (Elected), International Statistical Institute (ISI)
2006	Senior Member (Elected), Inst. of Electronics and Electrical Engineers (IEEE)
1996	Project Kaleidoscope Faculty for the 21st 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

2012 ACM SIGKDD Best Student Paper Award (Student: Qi Ding)

Keynote/Plenary speaker at various workshops. (See Invited Talks)

EDITORIAL RESPONSIBILITIES

Associate Editor, *SIAM Journal on Mathematics of Data Science* (2018 – 2020)
Associate Editor, *Journal of the Royal Statistical Society, Series B* (2015 – 2019)
Associate Editor, *Network Science* (2012 – 2018)
Associate Editor, *Journal of the American Statistical Association* (2010 – 2018)
Associate Editor, *Statistics Surveys* (2008 -- 2018).
Associate Editor, *IEEE Transactions on Network Science & Engineering* (2014 – 2017)
Associate Editor, *Electronic Journal of Statistics* (2010 – 2015)
Associate Editor, *IEEE Transactions on Image Processing* (2007 – 2009).

Guest Editor, *Proceedings of the National Academy of Sciences*, 2013

PROFESSIONAL ACTIVITIES

Key Leadership Positions and Outcomes

Internal Leadership

Director, McGill University Computational & Data Systems Initiative (July 2022 – now)

Inaugural director of McGill's newest mechanism in the university's effort to put the power of data-intensive analytical methods at the fingertips of McGill researchers. CDSI aims to connect, complement and, ultimately, amplify the rich ecosystem of McGill investments at the nexus where computing, data, and systems meet – particularly around AI and data science. Key accomplishments to date include: (i) established an ecosystem of 30+ workshops per semester with 4000+ registrations per year, a model upon which IVADO is now basing its R3AI CFREF workshop series for Quebec universities; (ii) created a Data Science Solutions Hub (DaSSH) that federates statistical consulting, geographical data science, and several other units on campus to provide scores of McGill researchers with a range of solutions services; (iii) initiated a research seed funding program that has supported exploratory and proof-of-concept projects by multi-disciplinary teams drawn from across the McGill Faculties, and in turn complemented that with an innovative Student-Faculty Research Bridge program that pairs researchers with graduate student summer interns from the MSc in Computer Science program; (iv) spearheaded development of the McGill Collaborative for AI & Society (McCAIS), as a coordinating entity among all of the McGill Faculties for the university's many and diverse strengths where AI and society meet, which itself had accomplishments that included creating an undergraduate summer research program and an interdisciplinary seed funding program, and which is now managing the university's $2M BMO Responsible AI gift supporting (under)graduate student research in this space; and (v) worked closely with University Advancement to establish AI as one of four transversal themes of the university's next major campaign, with McCAIS as its driver.

Director, Boston University Rafik B. Hariri Institute for Computing (January 2020 – June 2022)

Responsible for direction and oversight of Boston University's primary research institute for the computing and data sciences (~$1.5M annual budget). The Institute houses 2 centers and 6 formal initiatives, defined around strengths in artificial intelligence, cloud computing, and cyber security and privacy, both independently and in collaboration with specific domain areas. It develops various programs leveraging the energy and interests of over 330 affiliates from over 60 departments among the broader Boston University community, as well as a constellation of industry partners, and stimulates research convergence among them. Key accomplishments included: (i) reformulated the Institute's core research funding mechanisms from small-scale incubation awards towards larger-scale, year-long focused research programs aligned with university-level strategic directions and national-level funding opportunities; (ii) engineered a joint research partnership pilot between cloud computing, statistics and machine learning, and earth systems faculty at BU and collaborators with NASA's Jet Propulsion Laboratory; (iii) shepherded a 5yr / $20M renewal of the Institute's research collaboration with Red Hat, around AI systems and cloud computing; and (iv) launched a coordinated collection of new activities and events, including an Initiative on AI and Education.

Director, Program in Statistics, Boston University (2002 – 2019)

Led all programmatic aspects of the primary academic unit responsible for statistics at Boston University. Housed within the Department of Mathematics & Statistics, the Program in Statistics offers minors, major, MA, MS, and PhD degrees in statistics. Key accomplishments included: (i) a complete review and overhaul of the entire curriculum (from minor through PhD) over a ten-year period covering 2002-2012, and ongoing evolution afterwards; (ii) close to 100% growth in recruitment and hiring of faculty, postdocs, and graduate students during this same period; (iii) the development of a new and innovative MS in Statistical Practice (MSSP) degree in 2015; (iv) the simultaneous launch of an integrated statistical consulting service for the Boston University community (MSSP Consulting); (iv) a successful multi-level cluster hiring initiative in statistics, recruiting 5 new faculty (2 women and 1 URM) to the department over 4 years, and lastly, (v) a new joint undergraduate major in Statistics and Computer Science, in September 2019.

Founding Director, M.S. in Statistical Practice program, Boston University (2015 – 2020)

This novel degree program was launched as a department-level response to then-current and emerging needs in data science. Run in a cohort-based style, the goal is to produce holistically trained professional statisticians in 2-3 semesters. Adaptive learning and collaborative, group-based organization are used heavily throughout the program. Key aspects of my role in this program were the following: (i) led the design, proposal, and development of the program from inception in 2015 until stepping down as director; (ii) developed and led the Statistics Practicum course sequence central to the program (see Innovations in Teaching below); (iii) simultaneously launched an integrated statistical consulting service for the Boston University community (MSSP Consulting), with a combination of M.S. students, PhD student mentors, and MSSP program faculty providing multi-tiered service to roughly 100 clients/year; (iv) grew the program from 5 to 55 students/yr in 5 years (~$2.5M in new tuition revenue / year); and (v) curated a diverse constellation of industry, government, and university partners across sectors like health analytics, finance, and sports analytics, and inclusive of nonprofits and the City of Boston.

External Leadership

Co-chair, Data Science Education Roundtable, U.S. National Academies of Sciences (2017 – 2019)

This group of approximately 30 representatives from academic data science programs, funding agencies, professional societies, foundations, and industry was charged with assembling to discuss the community's needs, best practices, and ways to move forward on the task of preparing large numbers of professionals to help realize the potential of data science. Sponsored by a variety of stakeholders, in addition to the U.S. National Academies, including the ACM, ASA, MAA, and NIH, the roundtable convened four times per year. Throughout its three-year lifespan, I led this roundtable in planning, convening, and discussing topics in data science education that include foundations and domain areas, alternative mechanisms, ethics and privacy, reproducibility, diversity, academia-industry coordination, social good, and graduate program development.

Leader, Program on Complex Networks, SAMSI (2010 – 2011)

Led the development and execution of a year-long program on complex networks at the primary NSF-funded research institute in statistics and applied mathematics. Coordinated with local management and a scientific advisory committee, over the course of the 2010-2011 academic year, to enable (i) six multi-day workshops, (ii) five research working groups, and (iii) one co-taught course, focused particularly on themes in network modeling and inference, dynamics of and on networks, and network flows. Actively integrating participants from applied mathematics, computer

science, engineering, statistics and probability, and statistical physics, this program set the record for participation among all SAMSI programs in the Institute's first 10 years.

Professional Service

Service to Professional Societies

President, 2022 – 2024. New England Statistical Society. Elected for a two-year term (following 2 years as president-elect and preceding two years as past-president), I oversaw the activities of New England's regional statistical association, which includes a 4-day annual conference, several annual workshops, a journal, and various initiatives in education and next-generation outreach.

Member, 2021 – present. Bernoulli Society Subject Area Committee on Statistical Network Science

Member, 2017 – present. Management Committee, Astrostatistics Special Interest Group, International Statistical Institute (ISI).

Member, 2018 – 2020. Data Science Steering Group, Institute of Mathematical Statistics (IMS)

Member, 2017 – 2020. Council, New England Statistical Society (NESS).

Co-Chair, 2016 – 2019. Data Science Education Roundtable, Committee on Applied and Theoretical Statistics, U.S. National Academies of Sciences, Engineering, and Medicine (NAS).

Member, 2014 – 2019. Lingzi Lu Award Committee, American Statistical Association (ASA).

Conferences and Workshops

Co-organizer, 2026. Workshop on Recent Advances in Complex Networks. Institute for Mathematical & Statistical Innovation (IMSI). Chicago, IL.

Program Committee, 2025. Symposium for Model Accountability, Sustainability, and Healthcare (SMASH). Mila, Montreal.

Co-organizer, 2024. Workshop on Causal Inference and Prediction for Network Data. Banff International Research Station.

Program Committee, Member. 2020 Data Science Leadership Summit

Co-organizer, 2019. Statistics and the Life Sciences: Creating a Healthier World. Boston University School of Public Health Dean's Symposium [1000 attendees, physical+virtual]

Technical Committee, Co-Chair. 2018 IEEE Data Science Workshop.

Technical Committee, Member. NetSci 2018 Conference.

Co-organizer. 2018 Workshop on Complex Time Series Modelling and Forecasting: Dynamic Networks, Spatio-temporal Data, and Functional Processes. Tsinghua Sanya International Mathematics Forum (TSIMF), China.

Co-organizer. 2014 Workshop on Revisiting the Foundations of Statistics in the Era of Big Data: Scaling Up to Meet the Challenge. Boston University.

Program Committee. 2014 Grace Hopper Celebration of Women in Computing Conference

Co-Organizer. 2012 New England Statistics Symposium (NESS). Boston University.

Co-Organizer. 2011 Workshop on Large Graphs: Modeling, Algorithms and Applications. Institute for Mathematics and its Applications (IMA).

Program Leader, 2010-11 Program on Complex Networks, Statistical and Applied Mathematical Sciences Institute (SAMSI).

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

Technical Committee. 2003 IEEE Workshop on Statistical Signal Processing.

In addition, I have organized various individual research sessions at different conferences and workshops over the years, including for the Annual Meeting of the American Association for the Advancement of Science (AAAS), the Joint Statistical Meetings (JSM), and SIAM.

Funding Panels

NSF Panelist, 2017. Mathematical Sciences.
NIH Panelist, 2015. Modeling of Social Behavior.
NSF Panelist, 2014. National Research Traineeship Program.
NSF Panelist, 2010. Mathematical Biology.
NSF Panelist, 2004. Mathematical Sciences / Astronomy.
NIH Panelist, 2001. NIAAA Biosensor Workshop.

Academic Program Review Committees

Member, 2019. For the Center for Information and Systems Engineering (CISE), Boston University. (College-level external review committee.)

Member, 2018. For the Hariri Institute of Computing & Computational Science & Engineering, Boston University. (Internal member of external review committee)

Member, 2015. For the Applied and Computational Mathematics and Statistics Department, University of Notre Dame.

Member, 2015. For the Department of Mathematical and Statistical Sciences, University of Colorado Denver.

Reviewer

Reviewer for grant proposals submitted to various agencies over the years, including: the Canadian NSERC; the Netherlands NWO; the Swiss NSF; the UK EPSRC; and the US AFOSR, ARO, NIH, NSA, and NSF.

Reviewer for manuscripts submitted to countless journals and conferences over the years, including:

Within Statistics: *AISTATS, 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, Scandanavian Journal of Statistics, Statistica Sinica, Statistics in Medicine,* and *Test.*

Outside of Statistics: *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 Econometrics, Journal of Microscopy, Nature, NeurIPS, PLoS ONE, Proceedings of the National Academy of Sciences, Science, SIAM Journal on Imaging,* and *Social Networks.*

Note: Please see Editorial Responsibilities for a summary of editorial services provided to date.

Statistical Consultant

*Consultant,*2016. Stanford Team for NSASAG Mathematical/Statistical Problems Project
Statistical Advisor, 2016. BU Office of the General Counsel
External Advisor, 2015 – present. Riffyn

Departmental and University Service

I have served on a variety of committees at the departmental, college, and university levels throughout my career. Below is a summary list of the more prominent roles in which I have served while at McGill University and, previously, at Boston University.

McGill University

Departmental
Member, Chairs Advisory Committee, 2023 - present
Member, Computer Committee, 2022 – present
*Member***,** Committee on Undergraduate Affairs, 2022 – 2024

University

Member, Advisory Committee, Reappt. of the Dean of the Desautels Faculty of Mgmt, 2025-present
Member, Data Governance Working Group, VPRI, 2024 – present
Member, D2R CFREF Data Science Working Group, 2023 - present
Member, AI Working Group, Vice Principal of Research & Innovation, 2022 -- present
Member, School of Continuing Studies, Digital Studies Program Committee, 2022 – present
Member, Advisory Committee, Reappt. of the VP of Univ. Advancement, 2023

Boston University

Departmental
Founding Director, MS in Statistical Practice (MSSP) Program, 2015 – 2020.

Director, Program in Statistics, 2002 – 2019.

In addition, as director of the Program in Statistics, I was a regular and central member for well over a decade on the following departmental committees: (i) undergraduate and graduate committees; (ii) faculty search committees in statistics and probability; (iii) departmental planning committees; and (iv) the departmental executive committee.

University

Member, BU CTSI, Innovation Incubator Committee (2020 – 2022)
Member, University Technology Governance Committee (2020 – 2022)
Member, Provost's Comm. on Faculty Appointments, Faculty for Computing & Data Science
Member, Steering Committee, Hariri Institute for Computing (2018 – 2020)
Member, President's Committee on Transdisciplinary Epidemiology & Genomics (2017 – 2018)
Member, Provost's Steering Committee, Data Science Hiring Initiative (2014 – present)
Member, Statistics Search Committee, School of Education (2013-14)
Member, Provost's Council on Educational Technology & Instruction (2012-13)
Chair, Curriculum Committee, Bioinformatics Program (2010-11; 2012-13)
Member, Core Curriculum Committee, College of Arts & Sciences (2010-2011)
Member, Coordinating Committee for Hiring in Integrative Biology (2009 – 10)
Member, Management Committee, Center for Information and Systems Engineering (2008-11)
Member, Steering Committee, NSF IGERT for Graduate Training in Bioinformatics (2008 – 10)
Member, Provost's Curriculum Committee on Integrative Biology (2008-2009)

TEACHING

Key Innovations in Teaching

"Quantitative Reasoning," the University of Chicago. This course was developed for undergraduate students concentrating in the liberal arts. Rather than lecturing, classes were run in the traditional roundtable / discussion style common in the humanities and social sciences, based on select readings about mathematics and statistics, covering specific inter-related topics from deterministic systems to stochastic systems to sampling, estimation/testing, and the quantification of uncertainty.

"Art and Science of Quantitative Reasoning," Boston University. This course was similarly developed for students concentrating in the liberal arts, but was team-taught with a faculty colleague from each of computer science, mathematics, and systems. The unifying concept in the course was the power of abstraction in quantitative reasoning. Responsible for introducing probability and statistics in the course, I used a combination of traditional and `flipped' classroom techniques to both develop these topics in and of themselves and illustrate their ties to the other components of the course.

"Statistics Practicum", Boston University / McGill University. This two-semester course lies at the heart of the M.S. in Statistical Practice program at Boston University and, upon my arrival at McGill University, I worked with co-instructor Prof. Jose Correa to adapt it to an advanced undergraduate audience. Half pedagogy and half statistical consulting, the course uses just-in-time principles and a largely `flipped' classroom environment, with a collaborative group-based organizational structure, to guide students towards a holistic understanding – grounded in practice -- of how conceptual, methodological, and computational aspects come together for a statistician to be optimally effective in the modern era of data science.

"*Statistical Analysis of Network Data*". The courses taught on the statistical analysis of network data at McGill University, Boston University, ENSAE, and Harvard over the past 15 years represent some of the earliest and longest running examples of a course with a statistics-centric focus on network science. Continually modified, as a function of both time and audience, these courses facilitated the writing of and, in turn, have been supported by my three books in this area. Both the books and various of the course materials are used by colleagues at universities across North America and Europe.

Courses Taught

McGill University
Statistical Analysis of Network Data, Winter '23
Statistical Data Science Practicum, Fall-Winter '23-'24, '24-'25

Boston University
Lower Undergraduate:
Art and Science of Quantitative Reasoning (Fall '09, '10, '12, '13; Spring '09 – '11, '13, '14)
Basic Statistics and Probability (Spr '99)
Elementary Probability (Spr '00)

Upper Undergraduate / Masters
Methods of Scientific Computing (Fall '99 – '02)
Linear Models (Fall '06 – '08, '12, '14, '17)
Introduction to Probability (Fall '03)
Introduction to Stochastic Processes (Spring '99 – '04, '06)
Sampling Design (Fall '98)

Masters
Statistics Practicum (Fall/Spring '15 – '19)

Doctoral
Theoretical Statistics (Spring '13, '14)
Statistical Learning (Spring '08, '10)
Statistical Analysis of Network Data (Fall '05, '19, '21; Spring '11, '13, '15)

ENSAE, Paris
Masters
Statistical Analysis of Network Data with Applications in Marketing. (Fall '11 – '15; Spr '16 -'19)

Harvard University
Upper Undergraduate / Masters
Regression Analysis and Modeling (Spring '98)

Doctoral
Wavelet and Multiscale Methods for Statistical Estimation (Fall '97)
Statistics for Network Science *(Spring '05)*

The University of Chicago
Lower Undergraduate

Quantitative Reasoning (Winter ’95 – ‘97)
Statistical Methods and Their Applications (Spring ’95)
Linear Models and Experimental Design (Spring ’96, ’97)

Doctoral
Spectral and Time-Frequency Methods (Fall ’94, ’95)
Statistical Consulting (Fall/Winter/Spring ’94 – ’97)

Stanford University
Lower Undergraduate
Introduction to Statistical Methods for Social Scientists. *(Winter ‘94)*

RESEARCH GRANTS

2023 – 2026 Department of National Defense Supplement to “Noise and Uncertainty Quantification in Statistical Network Analysis.” (Kolaczyk (PI); CAN$120,000)

2023 – 2028 National Sciences and Engineering Research Council (NSERC) Discovery Grant, “Noise and Uncertainty Quantification in Statistical Network Analysis.” (Kolaczyk (PI); CAN$230,000)

2022 – 2025 National Science Foundation grant, “PIPP Phase I: Predicting and Preventing Epidemic to Pandemic Transitions.” (Paschalidis (PI), Bhadelia (CoPI), Kolaczyk (CoPI); US$1M)

2021 – 2025 National Science Foundation grant, “Understanding Social Dynamics Through Coevolving Latent Space Networks With Attractors.” (Kolaczyk (PI), Christenson, Spiliopoulos, Walker; US$449,985)

2021 – 2024 National Science Foundation grant, “AI Guided Design and Synthesis of Semiconducting Molecules.” (Kolaczyk (PI), Beeler, Jeffries-EL; US$300,000)

2019 – 2022 National Institutes of Health grant, “Social Networks and Oral Health-related Risk Behaviors in Public Housing Communities.” (Garcia (PI), Gondal (CoI), Heaton (CoPI), Kolaczyk (CoI); US$774, 178)

2018 – 2021 Army Research Office grant, “Statistical Methods for Percolation in Practice: Random Graph Hidden Markov Models.” (Kolaczyk (PI); US$360,000)

2018 – 2019 DARPA grant, “High-throughout Chemistry Platform (HTCP) for Reaction Screening.” (Beeler (PI), Kolaczyk (CoPI), Portco, Schaus; US$972,008)

2015 – 2019 National Institutes of Health grant, “Dynamic network analysis of human seizures: Towards targeted therapeutic intervention.” (Kolaczyk (PI), Kramer, Cash; US$950,217)

2015 – 2018 Army Research Office grant, “Statistical Foundations for Analyzing Large Collections of Network-Data Objects.” (Kolaczyk (PI), Lin, Rosenberg; US$330,000)

2014 – 2016 National Science Foundation EAGER grant, “Initiative for Physics and Mathematics of Neural Systems.” (Hasselmo (PI), Howard, Kolaczyk (CoI), Rosene, Stanley; US$300,000)

2014 – 2017 National Science Foundation grant, “Boston University / Keio University Workshops.” (Devaney, Kolaczyk (CoPI), Li, Rosenberg (PI); US$30,000)

2012 – 2017 Air Force Office of Scientific Research award, "Statistical Foundations for Measurement-based System Verification in Complex Networks." (Kolaczyk (PI); US$1,142,505)

2012 – 2015 National Institutes of Health grant, "Multi-cohort, Network-guided Regression for GE/GG Interactions in Disease Traits." (Dupuis, Kolaczyk (PI); US$450,029)

2012 – 2015 National Institutes of Health grant, "Common Genetic Variation and Quantitative Diabetes Traits." (BU Subaward: Dupuis (PI), Kolaczyk (CoI), & others; US$375,000 for BU subcontract)

2009 – 2014 National Science Foundation grant, "Wide-Aperture Traffic Analysis for Internet Security." (Crovella (PI), Kolaczyk (CoPI), Barford; US$723,053)

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 (PI); US$721,819)

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; US$1,000,081)

2005 – 2008 Office of Naval Research award, "Statistical Aspects of Information Integration in Net-Centric Environments." (Kolaczyk (PI); US$236,946)

2003 – 2007 National Science Foundation grant, "Complexity of Spatial and Categorical Scale in Landcover Characterization: A Statistical and Computational Framework." (Gopal, Kolaczyk (PI), Skekhar; US$535,914)

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. US$618,030 for BU subcontract)

2003 – 2006 Office of Naval Research Grant, "A Multiscale Framework for Whole-Network Information Superiority: Representation, Analysis, and Inference." (Kolaczyk (PI); US$248,357)

2003 National Science Foundation grant, "REU Supplement to A Multiscale Framework for Spatial Modeling in Geography." (Gopal, Kolaczyk (PI); US$12,000)

2000 – 2003 National Science Foundation grant, "A Multiscale Framework for Spatial Modeling in Geography." (Gopal, Kolaczyk (PI); US$249,410)

1999 – 2002 Office of Naval Research grant, "Towards a Class of Multi-granular Models." (Kolaczyk (PI); US$227,334)

RESEARCH ADVISING

Postdoctoral Students (Current employment, when known)

Hui Shen, 2023 – present.
Peter MacDonald, 2023 – 2024. Assistant Professor, University of Waterloo.
Daniel Ahelegbey, 2015 – 2017. Associate Professor, University of Pavia.
Juliane Manitz, 2015 – 2016. Senior Biostatistician, EMD Serono.
Apratim Ganguly, 2014 – 2015, Quantitative Analyst, Google.
Yun Li, 2012-2013. Data Scientist, PubMatic
Cedric Ginestet, 2012 – 2014, Lecturer, Kings College London
Prakash Balachandran, 2012 – 2014, Vice President, Morgan Stanley
Natallia Katenka, 2009 – 2012, Assoc. Prof., Dept. of Computer Science & Statistics, URI
David Gold, 2007 – 2008, Asc. Dir., Discovery & Translational Biostatistics, Bristol-Myers Squibb

PhD Students, Primary Advisor (Current employment, when known)

Weifan Yan, Current PhD Student, Statistics, McGill University
Hancong Pan, Current PhD Student, Statistics, Boston University
Yuning Pan, PhD 2025, Statistics. Chase Bank.
Shurong Lin, PhD 2024, Statistics. Postdoctoral student, Pennsylvania State University
Xiaojing Zhu, PhD 2022, Statistics. Applied Scientist, Zillow
Nathan Josephs, Ph.D. 2021, Statistics. Assistant Professor, North Carolina State University
Wenrui Li, Ph.D. 2021, Statistics. Assistant Professor, University of Connecticut
Jun Li, Ph.D. 2018, Statistics. Senior Data Scientist, Google.
Xinyu Kang, Ph.D. 2018, Statistics. Data Scientist, Fidelity Investments
Heather Shappell, Ph.D. 2017, Biostatistics. Asst. Prof, Dept. of Biostatistics, Wake Forest
Aleksandrina Goeva, Ph.D. 2017, Statistics. Asst. Prof, Comp. Biology, University of Toronto
Paula Griffin, Ph.D. 2015, Biostatistics. Dir. of Product Management, ZipRecruiter
Yaonan Zhang, Ph.D. 2015, Statistics. Quantitative Researcher, State Street Global Markets
Weston Viles, Ph.D. 2013, Statistics. Teaching Asst. Prof., Computer Science., Northeastern Univ.
Lisa Pham, Ph.D. 2013, Bioinformatics. Lead Data Scientist, Comcast
Qi Ding, Ph.D. 2011, Statistics. Vice President, JP Morgan Chase
Shu Yang, Ph.D. 2011, Statistics. Senior Biostatistician, Novartis.
Elissa Cosgrove, Ph.D. 2010, Biomedical Engineering. Bioinformatics Research Associate, Cornell
Xiaoyu Jiang, Ph.D. 2009, Statistics. Director, Biostatistics, Sanofi
Jianing Di, Ph.D. 2008, Statistics. Senior Director, The Janssen Pharmaceutical Co.
Yingchun Zhou, Ph.D. 2007, Statistics. Assoc. Prof., School of Statistics, East China Normal Univ.
David Chua, Ph.D. 2006, Statistics. Director, Black Rock
Mary Louie, Ph.D. 2003, Statistics. Corporate Vice President, New York Life Insurance Company
Carlos Morales, Ph.D. 2002, Statistics. Director, Global Portfolio Strategy, Liberty Mutual

PhD Students, Secondary Advisor (Current employment, when known)

Daniel Posner, Ph.D. 2020, Biostatistics. Biostatistician, US Veterans Administration
Adrian Heilbut, Ph.D. 2016, Bioinformatics. Data Scientist, Kallyope, Inc.
Shile Zhang, Ph.D. 2015, Bioinformatics. Senior Manager, Bioinformatics, Guardant Health
Chen Lu, Ph.D. 2013, Biostatistics. Biostatistics Senior Manager, Amgen
Ming-hui Chen, Ph.D. 2007, Statistics. Research Associate, Neuroscience, Boston University
Anukool Lakhina, Ph.D. 2006, Computer Science. Co-Founder, Wonder Labs
Junchang Ju, Ph.D. 2004, Geography. Remote Sensing Scientist, NASA Goddard
Weiguo Liu, Ph.D. 2001, Geography. Dir. of Data Science, CVS Health

Doctoral Thesis Committees

Delaram Montamedvaziri, Ph.D. 2014, Electrical and Computer Engineering
Jing Qian, Ph.D. 2014, Electrical and Computer Engineering

Lisa Christadore, Ph.D. 2012, Biochemistry.
Manqi Zhao, Ph.D. 2011, Electrical and Computer Engineering.
Manway Liu, Ph.D. 2010, Biomedical Engineering.
Naioki Nariai, Ph.D. 2010, Bioinformatics.
Boris Hayete, Ph.D. 2007, Bioinformatics.

External Examining Committees

Tabea Rebafka, Habilitation (HDR), 2023. Sorbonne.
Timothée Tabouy, Ph.D. 2019. Agro Paris Tech.
Jean-Benoist Leger, Ph.D. 2014. Agro Paris Tech.
Antoinne Channarond, Ph.D. 2013. Université Paris Sud
Clemence Magnien, Habilitation (HDR), 2010.

Master Students

Jamie McCormick, Current MSc student, Statistics, McGill University
Michael Montemurri, Current MSc student, Statistics, McGill University
Amaris Zhang, Current MSc student, Statistics, McGill University
Vadim Kutsyy, M.S. 1996, Statistics. Head of Data Strategy & Stewardship, PayPal

Undergraduate Senior Honors Theses

Alok Pattani, B.A. / M.A. 2008, Mathematics. Quantitative Analyst, Google.

PUBLICATIONS

Books

Kolaczyk, E.D. and Csardi, G. (2020). *Statistical Analysis of Network Data with R, Second Edition.* Springer, New York.

Kolaczyk, E.D. (2017). *Topics at the Frontier of Statistics and Network Analysis: (Re)visting the Foundations*. Cambridge University Press (Elements). Cambridge, UK.

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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. (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.

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

Invited Discussion Papers

Zhu, X. and Kolaczyk, E.D. (2022). Discussion of `Co-citation and Co-authorship Networks of Statisticians. *Journal of Business and Economic Statistics*, 40(2), 494-496.

Kolaczyk, E.D., Lee, M.M., Liu, J., and Parker, M.S. (2021). We Need a (Responsible!) Data Science Rapid Response Network. Discussion of 'Data Science in Times of Pan(dem)ic', *Harvard Data Science Review*. https://doi.org/10.1162/99608f92.2794e78d

Chang, J., Kolaczyk, E. D., & Yao, Q. (2020). Discussion of 'Network cross-validation by edge sampling'. *Biometrika*, *107*(2), 277-280.

Goeva, A. and Kolaczyk, E.D. (2016). Comment on "A regularization scheme on word occurrence rates that improves estimation and interpretation of topical content." *Journal of the American Statistical Association*, (in press).

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.

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

Manuscripts

Shen, H., MacDonald, P.W., and Kolaczyk, E.D. (2025+). Minority representation in network rankings: methods for estimation, testing, and fairness. *arXiv preprint arXiv:2507.01136*

Chang, J., Fang, Q., Kolaczyk, E. D., MacDonald, P. W., & Yao, Q. (2024+). Autoregressive Networks with Dependent Edges. *arXiv preprint arXiv:2404.15654*.

Zhu, X. and Kolaczyk, E.D. (2022+). Quantifying uncertainty for temporal motif estimation in graph streams under sampling. (arXiv:2202.10513)

Li, W., Sussman, D.L., and Kolaczyk, E.D. (2021+). Causal inference under network interference with noise. (arXiv:2105.04518)

INVITED PRESENTATIONS

Below are listed only talks related to research and education. I also regularly give talks in the context of my role as Director of McGill's Computational & Data Systems Initiative (CDSI), which has included venues ranging from alumni gatherings to Scale AI's ALL IN academia/industry event, to the annual meeting of the Canadian Association of University Business Officers (CAUBO).

Keynote / Plenary Talks

"AI and Society: Opportunities and Challenges." New England Statistics Symposium, University of Connecticut. May, 2024.

"Coevolving latent space network with attractors models for polarization." Dartmouth Interdisciplinary Network Research (DINR) Group Opening Workshop. Dartmouth, NH. September, 2023.

"A Quick Survey of Statistics and Networks: Where we've invested and where we might next invest." Annual Joint Statistical Meetings. Washington, DC. August, 2022.

"Accounting for Network Noise: Counting, Experimenting, and Epidemic Control." Conference on Complex Systems (Plenary Speaker). Lyons, France. October, 2021. (virtual)

"On Moving 'Practice' to the Center of Statistics." Mosteller Award Lecture. February, 2020.

"Why Aren't Network Statistics Accompanied by Uncertainty Statements?" 3rd Graph Signal Processing Workshop (Keynote Speaker). EPFL. Lausanne, Switzerland. June, 2018.

"Statistics and Network Science: Overview and Open Problems" Annual Joint Statistical Meetings. Baltimore, Maryland. August, 2017.

"On the Impact of Network Inference on Network Science: Propagation of Uncertainty." SIAM Workshop on Inferring Networks from Non-network Data (Keynote Speaker). Austin, Texas. April, 2017.

"Estimating network degree distributions from sampled networks: an inverse problem." Conference on Applied Statistics in Defense (Plenary Speaker). Washington, DC. October, 2016.

"Statistical analysis of network data in the context of `Big Data': Large networks and many networks." IMA-HK-IAS Joint Program on Statistics and Computational Interface to Big Data (Keynote speaker). Hong Kong University of Science & Technology. January, 2015.

"Inference of network summary statistics through network denoising". Symposium on Graph Signal Processing (Keynote speaker). 1St IEEE Global Conference on Signal and Information Processing. Austin, Texas. December, 2013.

"A compressed PCA subspace method for anomaly detection in high-dimensional data." Symposium on New Sensing and Statistical Inference Methods (Keynote speaker). 1St IEEE Global Conference on Signal and Information Processing. Austin, Texas. December, 2013.

"Network-based statistical models and methods for identification of cellular mechanisms of action." Guelph Biomathematics and Biostatistics Symposium - Frontiers in Networks: Models and Applications. (Keynote speaker – Gordon C. Ashton Memorial Lecture) University of Guelph, Ontario. June, 2012.

Conference / Workshop Talks

"Autoregressive networks with dependent edges." Statistical Society of Canada (SSC) meetings. Saskatoon, Canada. May, 2025.

"Estimation of branching factors in noisy networks." Workshop on Causal Inference and Prediction for Network Data. Banff International Research Station. Banff, Canada. August, 2024.

"Causal inference under network interference with noise." Workshop on Statistical Network Analysis and Beyond. Nassau, Bahamas. June, 2024.

"How do you explain a molecular to a machine?" Annual Joint Statistical Meetings. Toronto, Canada. August, 2023.

"Coevolving latent space network with attractors models for polarization." ISI World Statistics Conference. Ottawa, Canada. July, 2023.

"Edge differentially private estimation in the beta-model via jittering and method of moments." Amii Upper Bound Workshop on Statistics and Privacy. Edmonton, Canada. May, 2023.

"Coevolving latent space network with attractors models for polarization." CM Statistics. London, England. December, 2022 (virtual)

"Edge Differentially Private Estimation in the Network Beta-Model via Jittering and Method of Moments." Annual Joint Statistical Meetings. Washington, DC. August, 2022

"Discussion for 'Statistics for Mobile and Wearable Device Data'." Annual Joint Statistical Meetings. Washington, DC. August, 2022

"Coevolving latent space network with attractors models for polarization." Workshop on Statistical Network Analysis and Beyond. New York University. August, 2022

"Coevolving latent space network with attractors models for polarization." Institute of Mathematical Statistics (IMS) Annual Meeting. London, United Kingdom. June, 2022 (virtual)

"Accounting for Network Noise: Counting, Experimenting, and Epidemic Control." Joint Statistical Meetings. August, 2021. (virtual)

"Quantitative methods for understanding coalescence and fragmentation in dynamic networks of epileptic seizures." International Statistical Institute, World Statistics Conference. July, 2021. (virtual)

"Accounting for Network Noise: Counting, Experimenting, and Epidemic Control." Statistical Inference for Network Models, Satellite Workshop of Networks 2021. June, 2021. (virtual)

"How Hard is it to Work With a Network 'Average'?" Low-rank Models in Multiple-Network Analysis, Satellite Workshop of Networks 2021. June, 2021. (virtual)

"Quantitative methods for understanding coalescence and fragmentation in dynamic networks of epileptic seizures." Satellite Workshop on Nonstandard Brain Image Analysis, Organization for Human Brain Mapping. June, 2021. (virtual)

"Causal Inference Under Network Interference with Noise." 2021 Conference on Econometrics. Cowles Foundation, Yale University. June, 2021. (virtual)

"Why Aren't Network Statistics Accompanied by Uncertainty Statements?" TRIPODS Winter School & Workshop on Graph Learning and Deep Learning. Mathematical Institute for Data Science, Johns Hopkins University. January, 2021.

"Quantitative Methods for Understanding Coalescence and Fragmentation in Dynamics Networks of Epileptic Seizures." Data Science in Social and Behavioral Sciences Workshop. Statistical and Applied Mathematical Sciences Institute (SAMSI). January, 2021.

"Late-Breaking Session 2: Highlights from the National Academies of Sciences, Engineering, and Medicine's Roundtable on Data Science Postsecondary Education Roundtable on Data Science Postsecondary Education." Annual Joint Statistical Meetings. Philadelphia, PA (virtual). August, 2020.

"Why Aren't Network Statistics Accompanied by Uncertainty Statements?" Annual Joint Statistical Meetings. Philadelphia, PA (virtual). August, 2020.

"Statistics '101' for Network Data Objects." CM Statistics 2019. London, England. December, 2019.

"Statistics '101' for Network Data Objects." Annual Joint Statistical Meetings. Denver, Colorado. August, 2019.

"Statistical Analysis of Network Data: Foundations (Still!) Under Construction." Workshop on Statistical Inference, Learning, and Models in Data Science. The Fields Institute, Toronto, CA. September, 2018.

"Why Aren't Network Statistics Accompanied by Uncertainty Statements?" ICSA Applied Statistics Symposium. New Brunswick, New Jersey. June, 2018.

"On the Propogation of Uncertainty in Network Summaries." Workshop on Statistics of Network Analysis. Alan Turing Institute, London, England. May, 2018.

"Dynamic Networks with Multi-scale Temporal Structure." GraphEx Symposium. MIT Lincoln Labs. Lincoln, MA. April, 2018.

"Dynamic Networks with Multi-scale Temporal Structure." Workshop on Complex Time Series Modeling and Forecasting: Dynamic Networks, Spatio-temporal Data, and Functional Processes." Tsinghua-Sanya International Mathematics Forum, China. January, 2018.

"Estimation of Vertex Degrees in a Sampled Network." 51st Asilomar Conference on Signals, Systems, and Computers. Asilomar, CA. October, 2017.

"Dynamic Causal Networks with Multi-scale Temporal Structure." 51st Asilomar Conference on Signals, Systems, and Computers. Asilomar, CA. October, 2017.

"Challenges in Network Sampling: Open Problems and Some Progress." Annual Joint Statistical Meetings. Baltimore, Maryland. August, 2017.

"Dynamic causal networks with multi-scale temporal structure." Cowles Foundation / Yale Econometric Conference on Networks. Yale University. June, 2017.

"Dynamic causal networks with multi-scale temporal structure." Workshop on Dynamic Networks. Isaac Newton Institute. Cambridge, England. December, 2016.

Comment on "A regularization scheme on word occurrence rates that improves estimation and interpretation of topical content." Best paper session, Journal of the American Statistical Association – Applications & Case Studies. Annual Joint Statistical Meetings. Chicago, Illinois. August 2016.

"Estimating Network Degree Distributions from Sampled Networks: An Inverse Problem." SIAM Annual Meeting. Boston, Massachusetts. July, 2016.

"Dynamic causal networks with multi-scale temporal structure." 4th IMS-APR Meeting. Hong Kong, China. June, 2016.

"Dynamic causal networks with multi-scale temporal structure." Workshop on a Celebration of Statistics at Chicago (60th anniversary celebration). University of Chicago. Chicago, Illinois. May, 2016.

"Estimating network degree distributions from sampled networks: an inverse problem." Workshop on Networks, Random Graphs, and Statistics. Columbia University. New York, New York. May, 2016.

"Dynamic causal networks with multi-scale temporal structure." Workshop on Complex Systems in Time Series. London School of Economics. London, England. December, 2015.

"Statistical analysis of network data objects, with applications in functional neuroimaging." Annual Joint Statistical Meetings. Seattle, WA. August, 2015.

"Inference of network summary statistics through network denoising." Annual Meeting of the Institute of Mathematical Statistics. Sydney, Australia. July, 2014.

"Online ratings: Convergence towards a positive perspective?" IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). Florence, Italy. May, 2014.

"Modeling and prediction of financial time-series: should we network?" McGill/Bellairs Research Workshop on Financial Data Modeling. Barbados. January, 2014.

"Estimating network degree distributions from sampled networks: An inverse problem." Workshop on Social Network Data: Collection and Analysis. Statistical and Applied Mathematical Sciences Institute (SAMSI). RTP, North Carolina. October, 2013.

"Estimating network degree distributions from sampled networks: An inverse problem." World Statistics Congress. Hong Kong. August, 2013.

"Detecting perturbed biological pathways through latent network modeling of gene expression." Annual Joint Statistical Meetings. Montreal, Canada. August, 2013.

"Characterizing evolving patterns of cohesiveness in high-frequency dynamic networks." 2Nd Workshop on Industry and Practices for Forecasting. Paris, France. June, 2013.

"The effect of noise and uncertainty on the analysis of large networks." SIAM Conference on Computational Science and Engineering. Boston, MA. March, 2013.

"Multi-attribute networks and the impact of partial information on inference and characterization." ICSA Applied Statistics Symposium. Boston, MA. June, 2012.

"Biologically-structured Latent Factor Models for Idenfication of Cellular Mechanism of Action." ENAR International Biometric Society Spring Meeting. Washington, D.C. April, 2011.

"Impact of Measurement on Network Inference: Examples from Social, Communication, and Biological Networks." Workshop on Network Links: Connecting Social, Communication, and Biological Network Analysis. Institute for Mathematics and its Applications. Minneapolis, MN. February, 2012.

"Statistics and Complex Networks: The Next Frontier". Annual Joint Statistical Meetings. Miami, Florida. August, 2011

"What is `n' in Network Modeling". ICSA Applied Statistics Symposium. New York, New York. June , 2011.

"A Compressed PCA Subspace Method for Anomaly Detection in High-dimensional Data." International Conference on Statistics and Society, Renmin University. Beijing, China. July, 2010.

"Drug Targets Prediction: Finding Biological Needles in a Haystack of Networks." Statworks Workshop, University of Bristol. Bristol, England. June, 2010.

"(Anti)social Behavior in Malicious Internet Source IPs: Characterisation and Detection." Statistics of Networks Workshop, Isaac Newton Institute. Cambridge, England. June, 2010.

"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.

"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.

"Topics in Network Measurement and Inference." AFOSR Workshop on Complex Networks. May, 2007.

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

"Improving RDM Through Network Sparseness: It's not as complex as it seems." AFOSR Workshop on Robust Decision Making. February 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.

"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." Best paper session, Journal of the American Statistical Association – Applications & Case Studies. 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.

"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 Baysian 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. Stoors, 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.

"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. Rayleigh, North Carolina. June 1994.

Tutorials and Short Courses

"Sampling on Networks." Summer Institutes on Computational Social Science. University of Rochester. May, 2025. (Virtual)

"Statistical Network Analysis in R." New England Statistics Symposium, University of Connecticut. May, 2024.

"Statistical Analysis of Network Data." CANSSI Prairies Workshop, University of Manitoba. April, 2024.

"Statistical Analysis of Network Data." University of Calgary Biostatistics Centre. February, 2022.

"Statistical Analysis of Network Data." TRIPODS Winter School & Workshop on Graph Learning and Deep Learning. Mathematical Institute for Data Science, Johns Hopkins University. January, 2021. [1hr lecture (virtual)]

"Statistical Analysis of Network Data." Masterclass, University College Dublin, Ireland. November, 2020. [Series of 5 lectures (virtual).]

"Statistical Analysis of Network Data." Department of Statistics, University of California, Davis. May, 2020. [Series of three lectures (virtual).]

"Statistical Analysis of Network Data." International Chinese Statistical Association 2019 Applied Statistics Symposium. June, 2019. [One-day short course.]

"Statistical Analysis of Network Data." Two-day lecture for the Bernoulli Society's SemStat series. (With accompanying Kolaczyk (2017) Cambridge monograph.) Eindhoven, Netherlands. March, 2017.

"Statistical Analysis of Network Data." Annual Joint Statistical Meetings. Chicago, IL. August, 2016. [Half-day short course.]

"Statistical Analysis of Network Data." Summer School 2016, East China Normal University. Shanghai, China. July, 2016. [Three-day short course.]

"Statistical Analysis of Network Data." Annual Eastern North American Region (ENAR) meeting of the International Biometric Society. Austin, Texas. March, 2016. [One-day short course.]

"Introduction to Statistical Network Analysis." European Courses in Advanced Statistics (ECAS) Course on Statistical Analysis of Network Data. Herrsching, Germany. October, 2015. [Two-day series of lectures.]

"Select Topics in Statistics for Complex Networks." International School and Conference on Network Science (NetSci) 2015. Zaragoza, Spain. June, 2015. [One-day of lectures.]

"Statistical Analysis of Network Data." Workshop on Statistical and Computational Challenges in Networks and Cybersecurity. Centre de Recherches Mathematiques, Universite de Montreal. Montreal, Canada. May, 2015. [Two-day short course.]

"Statistical Analysis of Network Data." STOR-i Master Class. Lancaster, England. March, 2015. [Three-day short course.]

"A Whirl-wind Tour of Statistical Analysis of Network Data." Program on Statistical Inference, Learning, and Models for Big Data. Fields Institute, Canada. January, 2015. [One-hour lecture.]

"Statistical Analysis of Network Data." Winter School on Networks in Economics and Finance. Louvain-La-Neuve, Belgium. December, 2014. [Series of six lectures.]

"Statistics for Complex Networks." Les Houches School on Complex Networks. Les Houches, France. April, 2014. [Series of four lectures.]

"Statistical Analysis of Network Data." Stats in Paris Workshop: Statistics and Economics of Networks. Paris, France. November, 2013. [Two-day short course.]

"Statistical Analysis of Network Data". US Center for Disease Control Symposium on Statistical Methods. May, 2011. [One-day short course.]

"Statistical Analysis of Network Data". Centre for Complexity Science, University of Warwick, England. May, 2011. [Two-day short-course.]

"Statistical Analysis of Network Data". Program on Complex Networks, Opening Workshop. Statistical and Applied Mathematical Sciences Institute (SAMSI). RTP, North Carolina. August, 2010. [Overview lecture.]

"Statistical Analysis of Network Data". Institut de Statistique, l'Université Catholique de Louvain, Belgium. Sept/Oct 2009. [Two-week short-course.]

"Sampling Networks and the Inference of Network Characteristics." Network Science Workshop. Bloomington, Indiana. May, 2006. [One-hour lecture.]

Research Seminars

"Autoregressive networks with dependent edges." Department of Statistics, University of Wisconsin-Madison. Madison, Wisconsin. April, 2025. (Virtual)

"Coevolving latent space network with attractors models for polarization." NeST Seminar Series, Imperial College. London, UK. February, 2025. (Virtual)

"Coevolving latent space network with attractors models for polarization." Department of Statistics & Data Science, Washington University. St. Louis, MO. October, 2024.

"Differentially private linear regression." Department of Mathematics & Statistics, University of Sherbrooke. February, 2024.

"Quantitative methods for understanding coalescence and fragmentation in dynamic networks of epileptic seizures." CORE Biostat Seminar Series, McGill University Hospital Center (MUHC). October, 2023.

"Coevolving latent space network with attractors models for polarization." Bernoulli Committee on Statistical Network Science Seminar. June, 2023. (virtual)

"Impact of COVID-19 mitigation strategies on a large urban campus." Department of Biostatistics and Data Science, Wake Forest University. May, 2021. (virtual)

"How hard is it to work with a network 'average'?" Statscale Program, University of Cambridge. February, 2021. (virtual)

"Why Aren't Network Summary Statistics Accompanied by Uncertainty Statements?" Department of Statistics, University of Illinois, Urbana-Champaigne. September, 2020. (virtual)

"Statistics 101 for Network Data Objects." EPFL, Switzerland. May, 2020. (virtual)

"How Do I Average Networks?" Edison Lecture Series, Department of Applied and Computational Mathematics and Statistics, University of Notre Dame. February, 2020.

"Statistics '101' for Network Data Objects." Department of Statistical Science, Duke University. January, 2020.

"Statistical Analysis of Network Data – Three Vignettes." Miami Business School, University of Miami. March, 2019.

"Why Aren't Network Statistics Accompanied by Uncertainty Statements?" Stochastics and Statistics Seminar, MIT. March, 2019.

"Statistical Analysis of Network Data – Three Vignettes." Department of Mathematics, Dartmouth College. February, 2019.

"Dynamic Networks with Multi-scale Temporal Structure." Statistics Seminar, CREST. Paris, France. April, 2018.

"Statistical Analysis of Network Data in the Context of `Big Data': Large Networks and Many Networks." Department of Mathematics, Northwestern University. May, 2017.

"Estimating Network Degree Distributions Under Sampling: An Inverse Problem, with Application to Monitoring Social Media Networks." Department of Economics, University of Maryland. March, 2017.

"Network-based Statistical Models and Methods for Identifcation of Cellular Mechanisms of Action." Department of Statistics, Oxford University. December, 2016.

"Estimating Network Degree Distributions from Sampled Networks: An Inverse Problem". Probability & Statistics Seminar, School of Mathematics, Bristol University. December, 2016

"Statistical Analysis of Network Data in the Context of 'Big Data': Large Networks and Many Networks". Center for Statistics and Machine Learning, Princeton University. April 2016.

"Estimating Network Degree Distributions from Sampled Networks: An Inverse Problem." Department of Statistics, North Carolina State University. April, 2016.

"Network-based Statistical Models and Methods for Identifcation of Cellular Mechanisms of Action." Theodore L. Badger Lectures in Network Medicine. Channing Division of Network Medicine, Brigham and Women's Hospital. Boston, MA. September, 2015.

"Statistical Analysis of Network Data in the Context of `Big Data': Large Networks and Many Networks." Big Data Initiative Seminar Series. London School of Economics (LSE), London. March, 2015.

"Statistical Analysis of Network Data: (Re)visiting the Foundations." Department of Statistics, University of Chicago. October, 2014.

"Statistical Analysis of Network Data: (Re)visiting the Foundations. Laboratory for Information and Decision Sciences (LIDS), MIT. September, 2014.

"A Compressed PCA-subspace Methods for Anomaly Detection in High-Dimensional Data." Image Processing Seminar, University of Heidelberg. March, 2014.

"Statistical Analysis of Network Data." Centre for Statistics, Gottingen University. March, 2014.

"Estimating Network Degree Distributions from Sampled Networks: An Inverse Problem. Université des Artes et Metier, Paris. November, 2013.

"Estimating Network Degree Distributions from Sampled Networks: An Inverse Problem. Department of Statistics, University of Georgia. September, 2013.

"Network-based Statistical Models and Methods for Identification of Cellular Mechanisms of Action." Department of Statistics, University of California-Davis. March, 2013.

"Network-based Statistical Models and Methods for Identification of Cellular Mechanisms of Action." Advanced Networks Colloqium, University of Maryland. April, 2012.

"Statistical Analysis of Network Data." DTC Science and Technology Innovators Series, University of Minnesota. February, 2012.

"Network-based Statistical Models and Methods for Identification of Cellular Mechanisms of Action." Department of Biostatistics & Bioinformatics. Emory University. February, 2012.

"Multi-Attribute Networks and the Impact of Partial Information on Inference and Characterization." Machine Learning Seminar, l'Universite Catholique Louvain. Louvain-la-Neuve, Belgium. November, 2011.

"Multi-Attribute Networks and the Impact of Partial Information on Inference and Characterization." AgroParisTech. Paris, France. November, 2011.

"A Compressed PCA-subspace Method for Anomaly Detection in High-Dimensional Data." Séminaire Parisien de Statistique, l'Universite de Paris VII. Paris, France. November, 2011.

"Some Results on Asymptotics for Inference in Networks." Seminaire de Statistique, Ecole Nationale de la Statistique et de l'Adminstration Economique (ENSAE). Paris, France. October, 2011.

"Some Results on Asymptotics for Inference in Networks." Seminaire SSB, l'Universite d'Evry, France. September, 2011.

"Drug target prediction: finding biological needles in a haystack of networks." Probability Seminar, Cornell University. May, 2010.

"Drug target prediction: Finding biological needles in a haystack of networks." Seminar in Computational and Applied Mathematics, Notre Dame University. April, 2010.

"Predicting gene targets of perturbations via network-based filtering of mRNA expression compendia." Center for Systems Biology, Duke University. March, 2010.

"Network-based auto-probit modeling with application to protein function prediction." Stern School of Business, New York University. March, 2010.

"Drug target prediction: Finding biological needles in a haystack of networks." Department of Statistics, Columbia University. March, 2010.

"Network Filtering." Harvard University School of Public Health, Seminar on High-Dimensional Data Analysis. December, 2009.

"Multiscale Statistical Modeling for Poisson Signal and Image Data." Royal Observatory of Belgium. Brussels, Belgium. October, 2009.

"Network Filtering." Center for Statistical Sciences, Brown University. September, 2008.

"Network Kriging." Department of Statistics, Yale University. April, 2007.

"Network Kriging". CRM-ISM-GERAD Colloquium in Statistics, University of Montreal, Quebec, CA. November, 2005.

"Efficient Estimation of End-To-End Network Properties." Seminar Series, Department of Electrical and Computer Engineering, University of Wisconsin-Madison. March, 2005.

"Statistical Methods for Monitoring End-to-End Computer Network Traffic." Seminar on Complex Networks. Ecole Nationale Superieure. Paris, France. November, 2004.

"Multiscale, Multigranular Statistical Image Segmentation." Department of Statistics, Universite Joseph Fourier. Grenoble, France. November, 2004.

"Efficient Monitoring of End-to-End Network Traffic." Network and Performance Group, Universite de Paris VI. Paris, France. November, 2004.

"Multiscale, Multigranular Statistical Image Segmentation." Statistics and Probability Seminar, Universite de Paris VII. Paris, France. October, 2004.

"A Multiscale Framework for Disease Mapping." Department of Biostatistics, Yale University. April, 2004.

"On the Distance Between Network Links and its Relation to Covariance in Network Tomography." Department of Statistics, Rutgers University. November, 2003.

"Prediction of Traffic on Un-Measured Links: Network Kriging." Sprint Advanced Technology Laboratory, Burlingame, CA. August, 2003.

"Multiscale Probability Models -- Blending Wavelets, Recursive Partitioning, and Graphical Models." Department of Mathematics and Statistics, University of Massachusetts-Amherst. April 2002.

"Multiscale Probability Models -- Blending Wavelets, Recursive Partitioning, and Graphical Models." Stochastic Systems Group, Laboratory for Information and Decision Sciences, Massachusetts Institute of Technology. February 2002.

"Multiscale Probability Models -- Blending Wavelets, Recursive Partitioning, and Graphical Models." ARIANA Research Group, INRIA. Sophia-Antipolis, France. June, 2001.

"A Multiresolution Analysis for Likelihoods: Blending Wavelets, Partitioning, and Graphical Models." L'Institut Henri Poincaré. Paris, France. May, 2001.

"A Multiresolution Analysis for Likelihoods." Department of Electrical and Computer Engineering, Rice University. February, 2001.

"A Multiresolution Analysis for Likelihoods." Department of Mathematics and Statistics, University of Montreal. November, 2000.

"A Class of Bayesian Multiscale Models for Spatial Data." Bayesian Methodology Working Group Seminar, Department of Biostatistics, Harvard School of Public Health. September, 2000.

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