Jeffrey W. Miller

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Professional Appointments

Harvard University, Boston, MA — 2016-present
Assistant Professor, Department of Biostatistics
Affiliate Member, Broad Institute

Duke University, Durham, NC — 2014-2016
Postdoctoral Associate, Department of Statistical Science

Brown University, Providence, RI — Summer 2014
Postdoctoral Associate, Division of Applied Mathematics

Draper Laboratory, Cambridge, MA — 2005-2008
Member of Technical Staff, Cognitive Robotics Group

United States Air Force, Air Force Research Lab, Tyndall AFB, FL — 2002-2005
Highest rank: Captain. Project Manager, Robotics Research Group

Education

Brown University, Providence, RI
PhD, Applied Mathematics. Advisers: Matthew T. Harrison and Stuart Geman — 2008-2014
Master of Science, Mathematics — 2008-2010

PhD Dissertation: *Nonparametric and Variable-Dimension Bayesian Mixture Models: Analysis, Comparison, and New Methods*. Brown University, Division of Applied Mathematics, 2014.

Stanford University, Stanford, CA — 2001-2002
Master of Science, Mechanical Engineering

Georgia Institute of Technology, Atlanta, GA — 1997-2001
Bachelor of Science, Mechanical Engineering

Current Research Interests

Bayesian methods for genomics. Robustness to model misspecification. Frequentist analysis of Bayesian methods. Generalized bilinear models for analysis of high-throughput sequencing data. Robust mutational signatures analysis using Bayesian models. Early cancer detection and monitoring using plasma cell-free DNA whole-genome sequencing analysis. Biostatistical analysis of X-linked Dystonia-Parkinsonism.

Papers (Theory and Methods)

E. N. Weinstein and J. W. Miller. *Bayesian data selection.* (Submitted to the Journal of Machine Learning Research), arXiv preprint arXiv:2109.02712, 2021.

M. Zemplenyi and J. W. Miller. *Bayesian optimal experimental design for inferring causal structure.* (Major revision in progress, Bayesian Analysis), arXiv preprint arXiv:2103.15229, 2021.

J. W. Miller and S. L. Carter. *Inference in generalized bilinear models.* (Major revision in progress, Journal of Computational and Graphical Statistics), arXiv preprint arXiv:2010.04896, 2020.

J. H. Huggins and J. W. Miller. *Reproducible model selection using bagged posteriors.* **Bayesian Analysis**, (In press), 2021.

J. H. Huggins and J. W. Miller. *Robust inference and model criticism using bagged posteriors.* (Resubmission in progress, Journal of the American Statistical Association), arXiv preprint arXiv:1912.07104, 2020.

J. W. Miller. *Asymptotic normality, concentration, and coverage of generalized posteriors.* **Journal of Machine Learning Research**, Vol. 22, No. 168, 2021, pp. 1-53.

F. W. Townes, K. Carr, and J. W. Miller. *Identifying longevity associated genes by integrating gene expression and curated annotations.* **PLOS Computational Biology**, 16(11): e1008429, 2020.

J. W. Miller. *Fast and accurate approximation of the full conditional for gamma shape parameters.* **Journal of Computational and Graphical Statistics (JCGS)**, Vol. 28, 2019, pp. 476-480.

J. W. Miller. *An elementary derivation of the Chinese restaurant process from Sethuraman's stick-breaking process.* **Statistics & Probability Letters**, Vol. 146, 2019, pp. 112-117.

J. W. Miller and D. B. Dunson. *Robust Bayesian inference via coarsening.* **Journal of the American Statistical Association (JASA)**, Vol. 114, 2019, pp. 1113-1125.

J. W. Miller. *A detailed treatment of Doob's theorem.* 2018, arXiv:1801.03122.

L. Duan and J. W. Miller. *Distribution-based clustering using characteristic functions.* All of Bayesian Nonparametrics workshop, NeurIPS 2018.

J. W. Miller and M. T. Harrison. *Mixture models with a prior on the number of components.* **Journal of the American Statistical Association (JASA)**, Vol. 113, 2018, pp. 340-356.

B. Betancourt, G. Zanella, J. W. Miller, H. Wallach, A. Zaidi, and B. Steorts. *Flexible models for microclustering with application to entity resolution.* **Advances in Neural Information Processing Systems (NeurIPS)**, Vol. 29, 2016, pp. 1417-1425.

J. W. Miller, B. Betancourt, A. Zaidi, H. Wallach, and R. C. Steorts. *Microclustering: When the cluster sizes grow sublinearly with the size of the data set.* Bayesian Nonparametrics: The Next Generation workshop, NeurIPS 2015.

J. W. Miller and M. T. Harrison. *Inconsistency of Pitman–Yor process mixtures for the number of components.* **Journal of Machine Learning Research**, Vol. 15, 2014, pp. 3333-3370.

J. W. Miller and M. T. Harrison. *A simple example of Dirichlet process mixture inconsistency for the number of components.* **Advances in Neural Information Processing Systems (NeurIPS)**, Full oral presentation, Vol. 26, 2013, pp. 199-206.

J. W. Miller and M. T. Harrison. *Exact sampling and counting for fixed-margin matrices.* **The Annals of Statistics**, Vol. 41, No. 3, 2013, pp. 1569-1592.

M. T. Harrison and J. W. Miller. *Importance sampling for weighted binary random matrices with specified margins.* arXiv:1301.3928.

J. W. Miller. *Reduced criteria for degree sequences.* **Discrete Mathematics**, Vol. 313, Issue 4, 2013, pp. 550-562.

Papers (Collaborative)

Z. Inde, B. A. Croker, and 29 others including J. W. Miller. *Age-dependent regulation of SARS-CoV-2 cell entry genes and cell death programs correlates with COVID-19 severity.* **Science Advances**, Vol. 7, No. 34, eabf8609, 2021.

S. Kim, T. Cohen, C. R. Horsburgh, Jr, J. W. Miller, A. N. Hill, S. M. Marks, R. Li, J. S. Kammerer, J. A. Salomon, and N. A. Menzies. *Trends, mechanisms, and racial/ethnic differences of tuberculosis incidence in the US-born population aged 50 years or older in the United States.* **Clinical Infectious Diseases**, ciab668, July 2021.

R. Singh, C. Fraser, C. B. Lim, G. Joshi, S. Yu, J. Spetz, X. Qin, S. Toprani, Z. Nagel, M. C. Hocking, R. A. Cormack, T. I. Yock, J. W. Miller, T. Gershon, Z-M. Yuan, K. A. Sarosiek. *Radiation therapy-induced neurocognitive impairment is driven by heightened apoptotic priming in early life and prevented by blocking BAX.* (Submitted to the Science Advances), 2021.

P. Mroz, A. Bhakta, Y. Li, Z. Chen, J. W. Miller, K. V. Alzate, V. Gopalakrishnan, L. A. Maier, L. Li, N. V. Konduru. *Plasma Extracellular Vesicles Protein Signature for Detection of Beryllium Exposure.* (Submitted to Journal of Exposure Science and Environmental Epidemiology), 2021.

R. S. Adduri, K. Cai, K. V. Alzate, R. Vasireddy, J. W. Miller, S. P. de Frías, F. de Frías, Y. Horimasu, H. Iwamoto, N. Hattori, Y. Zhang, K. F. Gibson, A. K. Pal, D. Nicastro, L. Li, S. Cherian, L. M. Sholl, D. A. Schwartz, D. J. Kass, I. O. Rosas, and N. V. Konduru. *A novel protein signature from plasma extracellular vesicles for non-invasive differential diagnosis of idiopathic pulmonary fibrosis.* (Major revision submitted to Thorax), 2021.

C. Fraser, J. Spetz, A. Presser, C. Li, A. Hata, J. W. Miller, V. Sanchorawala, M. Kalocsay, S. R. Sarosiek, and K. A. Sarosiek. *Exploiting endogenous and therapy-induced apoptotic vulnerabilities in AL amyloidosis with BH3 mimetics.* (Submitted to Nature Communications), 2021.

S. M. Prakadan, C. A. Alvarez-Breckenridge, S. C. Markson, and 23 others, including J. W. Miller. *Genomic and transcriptomic correlates of immunotherapy response within the tumor microenvironment of leptomeningeal metastases.* (Revision submitted to Nature Communications), 2021.

A. Aguirre, J. Nowak, N. Camarda, and 58 others, including J. Miller. *Real-time genomic characterization of advanced pancreatic cancer to enable precision medicine.* **Cancer Discovery**, CD-18-0275, 2018.

Manuscripts in preparation

J. H. Huggins, C. Xue, J. W. Miller, and S. L. Carter. *Robust discovery of mutational signatures.* In preparation.

N. A. Spencer and J. W. Miller. *Approximate BayesBag Model Selection via Taylor Expansions.* In preparation.

P. Acuna, M. L. Wells, N. A. Spencer, and 18 others including J. W. Miller (co-senior author). *Establishing a Natural History of X-linked Dystonia Parkinsonism.* In preparation.

N. A. Spencer, M. Russo, and J. W. Miller. *Modeling symptom trajectories in X-linked Dystonia Parkinsonism: A Bayesian hierarchical approach.* In preparation.

M. Russo, N. A. Spencer, and J. W. Miller. *Characterizing the idiosyncratic evolution of X-Linked Dystonia-Parkinsonism: a Bayesian bi-clustering approach.* In preparation.

J. W. Miller. *Nonparametric perturbation models for robustness to misspecification.* In preparation.

Grants and Funding

NIH R01 award (R01CA240299), "Statistical methods for cancer genomics and cell-free DNA analysis", Principal Investigator, 2020-2025.

Prevention and Early Detection for Emerging Researchers (PEER) Award from the Zhu Family Center for Global Cancer Prevention, "Transformational Methods for Early Cancer Detection Using Cell-Free DNA", Principal Investigator, 2020-2022.

Collaborative Center for X-linked Dystonia Parkinsonism (CCXDP) award, "Biostatistical analysis of X-Linked Dystonia-Parkinsonism", Principal Investigator, 2019-2021.

NIH R37 award 1R37CA248565-01, "Developmental regulation of apoptosis as a modifiable driver of radiotherapy-induced neurocognitive impairment in pediatric patients", Co-Investigator, 2020-2025. (PI: Kristopher Sarosiek)

NIH R01 award, "Optimal targeting for individual and population-level TB prevention", Co-Investigator, 2019-2024. (PI: Nicolas Menzies)

International Centre for Mathematical Sciences (ICMS) Research-in-Groups award, "Coverage properties of Bayesian inference in misspecified models", Co-Investigator, 2019. (PI: Natalia Bochkina)

University of Texas Health Science Center at Tyler (UTHCT) subcontract 7725364-01, "Exosomics for characterizing the internal exposome: A new approach for early detection of lung diseases", Principal Investigator, 2018-2019. (Collaboration with Nagarjun Konduru)

Dana–Farber Cancer Institute (DFCI) subcontract 7711623-01, "Preprocessing and Analysis Tools for High-Throughput Technologies", Principal Investigator, 2018-2019. (Collaboration with Rafael Irizarry)

Dana–Farber Cancer Institute (DFCI) subcontract 7711592-01, "Overcoming bias and unwanted variability in next generation sequencing", Principal Investigator, 2018-2019. (Collaboration with Rafael Irizarry)

DoD award LC170378, "Ultrasensitive Detection of Subclinical Lung Cancer by Statistical Analysis of Plasma cfDNA-Derived Whole-Genome Sequencing Data", Co-Investigator, 2018-2020. (PI: Scott Carter)

Harvard Data Science Initiative (DSI) Competitive Research Fund Award, "Inference, Design of experiments, and Experimentation in an Automated Loop (IDEAL) for Aging Research", Co-Principal Investigator, 2017-2019. (Co-PI: William Mair)

McLennan Dean's Challenge Grant Program Award, "Studying mechanisms of aging via closed-loop analysis and experimentation", Co-Principal Investigator, 2017-2018. (Co-PI: William Mair)

Cure Alzheimer's Fund award, "Analytical and Statistical Tools for Sequence Analysis for Alzheimer's Disease", Co-Investigator, 2016-2018. (PI: Christoph Lange)

Funding awarded to organize the Radcliffe exploratory seminar, "Statistics When the Model is Wrong," 2017-2018. (Co-organizer: Pierre Jacob)

Graduate School Travel Grant, 2011-2013, Brown University. (Supplemental funding for travel.)

Supported in part by NSF, NIH, and DARPA grants, under advisor supervision, 2011-2015.

National Defense Science and Engineering Graduate (NDSEG) Fellowship, 2001-2002, 2008-2011.

Air Force ROTC Full Scholarship, 1997-2001.

Awards

The recognized publication for the 2021 COPSS George W. Snedecor Award, received by David B. Dunson, was our paper on "Robust Bayesian inference via coarsening" (Miller and Dunson, 2019).

Eli N. Weinstein (PhD advisee) received the IBM Student Research Paper award at NESS2021 for our paper on "Bayesian data selection" (Weinstein and Miller, 2021).

Catherine Xue (PhD advisee) received a student poster award at NESS2021 for our work on "Robust discovery of mutational signatures".

Prevention and Early Detection for Emerging Researchers (PEER) Award from the Zhu Family Center for Global Cancer Prevention, 2020.

HSPH Dean's Challenge McLennan Award, 2017.

Harvard Data Science Institute Competitive Research Fund Award, 2017.

ISBA New Researchers Travel Award, June 17, 2016 (International Society for Bayesian Analysis 2016 World Meeting). One of two recipients.

Travel award for "Bayesian Nonparametrics: The Next Generation" workshop at NeurIPS 2015.

Brown University Outstanding Dissertation Award in the Physical Sciences, generously sponsored by the Joukowsky Family Foundation (2014).

1st Prize for Poster by a Young Participant, June 14, 2013, BNP9 (9th Conference on Bayesian Nonparametrics, Amsterdam).

Sigma Xi Outstanding Graduate Student Award, May 9, 2013, Brown University chapter of Sigma Xi. "For excellence in research and high potential for further contributions to science." One of three recipients.

Presidential Award for Excellence in Teaching, May 7, 2012, Brown University. One graduate student is selected for the award each year, out of approximately 400 with teaching positions.

IBM Thomas J. Watson Research Center Student Research Award, April 16, 2011, New England Statistics Symposium (NESS). One of four winners of this award for "outstanding research in the field of Statistics and Probability."

Teaching

Primary instructor

Bayesian Methodology in Biostatistics (HSPH, BST 249), Spring 2020-2022. Primary instructor.

Statistical Learning (HSPH, BST 263), Spring 2019. Primary instructor.

Applied Machine Learning (HSPH, BST 263), Spring 2018. Primary instructor.

Advanced Stochastic Modeling (Duke, STA 531), Spring 2016. Primary instructor.

Bayesian and Modern Statistics (Duke, STA 360/601), Spring 2015. Primary instructor.

Information Theory (Brown, APMA 1710), Fall 2011. Primary instructor.

Introduction to Machine Learning (Brown, CSCI 1950-F), Summer 2011. Primary instructor.

Guest lecturer

Applied Bayesian Analysis (HSPH, BST 228), Fall 2020. Guest lecturer on Dec 3, 2020.

Bayesian and Modern Statistics (Duke, STA 360/601), Fall 2014 & 2015. Alternate lecturer.

Teaching assistant

Recent Applications of Probability and Statistics (Brown, APMA 2610), Spring 2013. Teaching assistant.

Computational Probability and Statistics (Brown, APMA 1690), Fall 2012. Teaching assistant.

Essential Statistics (Brown, APMA 0650), Spring 2012. Teaching assistant.

Math Resource Center (MRC), Fall 2009. Tutor. (Tutoring undergraduates for one evening each week.)

Other

Created over 250 short video lectures (each around 10-15 minutes), freely available online at the *mathematicalmonk* YouTube channel. Topics covered include introductory probability, machine learning, and information theory. To date, the total number of views exceeds 8 million.

Editorial and Peer-review Activity

Editorial activities

- Associate Editor, Journal of Computational and Graphical Statistics (2018-present)
- Associate Editor, Data Science in Science (2021-present)
- Area Chair, NeurIPS 2021 (equivalent to associate editor)

Grant reviewer

- National Science Foundation (NSF)
- Natural Sciences and Engineering Research Council of Canada (NSERC)

Journal peer-reviewer

- Journal of the American Statistical Association
- Journal of the Royal Statistical Society: Series B
- Journal of Machine Learning Research
- The Annals of Statistics
- Journal of Computational and Graphical Statistics
- Bayesian Analysis
- Bernoulli
- Biometrics
- Biometrika
- Statistica Sinica
- Canadian Journal of Statistics
- Statistics and Computing
- Electronic Journal of Statistics
- Computational Statistics and Data Analysis
- Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- Machine Learning

- Advances in Data Analysis and Classification
- Dependence Modeling
- Australasian Combinatorics
- SIAM Journal on Discrete Mathematics (SIDMA)
- Journal of the Korean Statistical Society

Professional Development and Memberships

Membership in professional societies: ASA, ISBA, AMS, NESS, Sigma Xi, MAA, SIAM.

Sheridan Teaching Certificate I, 2012-2013.

Service

Leadership positions

- 2021-present: Co-director of HSPH Biostatistics Masters programs.
- 2020-present: HSPH Committee on Educational Policy (CEP), Biostatistics department representative.

Seminar/conference organizer or chair

- Organizer of invited session on "Model misspecification and robust Bayesian methods" at NESS 2021.
- Award committee member for NESS 2021 Student Paper Competition and Poster Competition.
- Organizer of JSM topic-contributed session on "Misspecification, Robustness, and Model Assessment" at JSM 2021.
- Co-organizer of "Posterior inference with misspecified models" session at BayesComp 2020.
- Chair of the "Personalized Medicine" Contributed Session at JSM 2017.
- Co-organizer of the Biostatistics – Biomedical Informatics Big Data (B3D) Seminar, 2016-present. This is a seminar series on statistical, computational, and machine learning methods for analyzing large complex data sets, with a focus on applications in biomedical science and public health. (`https://www.hsph.harvard.edu/biostatistics/b3d-seminar/`)
- Co-organizer of the Radcliffe exploratory seminar, "Statistics When the Model is Wrong," May 31 – June 1, 2018. Small workshop with a highly diverse group of researchers, focused on robustness to model misspecification. (`https://projects.iq.harvard.edu/stat_mod`)
- Co-organizer of the Practical Bayesian Nonparametrics workshop at Neural Information Processing Systems (NeurIPS) 2016. (`https://sites.google.com/site/nipsbnp2016/`)
- Founder and organizer of the Graduate Student Seminar for Applied Mathematics, 2012-2014. This is a forum for graduate students from Applied Math and other departments to present and discuss their research.
- Co-organizer of the Pattern Theory Group Seminar, 2012-2013. Researchers from Brown and other universities speak about statistics-related topics at this pizza seminar. (`http://www.dam.brown.edu/ptg/seminar.html`)

Departmental committee member

- 2018-present: Qualifying exam committee.
- 2017-present: PhD admissions committee.
- 2016-present: Master's of Health Data Science committee.
- 2016-2018: Colloquium committee.

PhD dissertation committee member

- Catherine Xue (Biostat PhD student), 2020-present. (Co-advisor)
- Eli Weinstein (Biophysics PhD student), 2019-present. (Co-advisor)
- Linglin Huang (Biostat PhD student), 2019-present.
- Greyson Liu (Biostat PhD student), 2018-present.
- Xihao Li (Biostat PhD student), 2018-2019.
- Michele Zemplenyi (Biostat PhD student), 2017-2020. (Co-advisor) (Current position: U.S. Department of Energy)
- William Townes (Biostat PhD student), 2017-2019. (Current position: Postdoc with Barbara Engelhardt, Princeton)
- Divy Kangeyan (Biostat PhD student), 2017-2019.
- Sheila Gaynor (Biostat PhD student), 2017-2018.
- Zachary McCaw (Biostat PhD student), 2016-2019.
- Kelly Mosesso (Biostat PhD student), 2016-present.
- Siyuan Ma (Biostat PhD student), 2016-2019.

Master's thesis committee member

- Xin Zhou (CBQG Master's student), 2020-2021.
- Karla Mejia (Biostat Master's student), 2018.
- Fangyuan Hong (CBQG Master's student), 2017-2018. (Advisor)
- Wei Yu (CBQG Master's student), 2017.

Postdoctoral advisor/mentor

- Sally Paganin (Postdoctoral fellow), 2021-present.
- Wenyu Gao (Postdoctoral fellow), 2020-present.
- Neil Spencer (Postdoctoral fellow), 2020-present.
- Massimiliano Russo (Postdoctoral fellow), 2019-present.
- Jonathan Huggins (Postdoctoral fellow), 2018-2020. (Current position: Tenure-track faculty at Boston University)

Other

- Training grant mentor – T32 on Psychiatric Genetics and Translational Research, 2020-present.
- PQG travel award review committee, 2017-present.
- Summer Program in Biostatistics & Computational Biology – Application review committee, 2018.
- Panelist in "Academic Careers in Biostatistics" discussion for HSPH students, Nov 29, 2017.
- Chair of the "Personalized Medicine" Contributed Session at JSM 2017.
- Panelist in "Advice on Getting Jobs in (Bio)statistics" discussion for HSPH students, Nov 1, 2016.

Talks

Statistics Department Seminar, Oct 18, 2021, Colorado State University. *Robust inference and model selection using bagged posteriors.* (Invited talk)

Biostatistics Lightning Talk Series, Oct 8, 2021, Harvard T.H. Chan School of Public Health. *Inference in generalized bilinear models.*

New England Statistics Symposium, Oct 2, 2021, Providence, RI. *Reproducible model selection using bagged posteriors.* (Invited talk)

Joint Statistical Meetings (JSM), Aug 12, 2021. *Reproducible model selection using bagged posteriors.* (Invited talk)

Advanced Biomedical Computation (ABC) Seminar Series, May 17, 2021, Brigham and Women's Hospital. *Inference in generalized bilinear models.* (Invited talk)

IBEST-IMCI Seminar, Apr 29, 2021, University of Idaho. *Inference in generalized bilinear models.* (Invited talk)

Division of Biostatistics Seminar, Mar 31, 2021, University of Minnesota. *Robust inference and model selection using bagged posteriors.* (Invited talk)

Harvard Statistics Departmental Colloquium, Feb 1, 2021, Harvard University. *Robust inference and model selection using bagged posteriors.* (Invited talk)

Cancer Working Group seminar, Nov 16, 2020, Harvard T.H. Chan School of Public Health. *Inference in generalized bilinear models.* (Invited talk)

Models, Inference & Algorithms (MIA) seminar, Oct 28, 2020, Broad Institute of MIT and Harvard. *Inference in generalized bilinear models.* (Invited talk)

Bayes Comp 2020 conference, Jan 9, 2020, Gainesville, FL. *Flexible perturbation models for robustness to misspecification.* (Invited talk)

Methods Primer Seminar, Dec 5, 2019, Broad Institute. *Flexible perturbation models for robustness to misspecification.* (Invited talk)

Wednesday Statistics Seminar, Dec 4, 2019, Massachusetts Institute of Technology. *Flexible perturbation models for robustness to misspecification.* (Invited talk)

Joint Statistical Meetings (JSM), July 28, 2019, Denver, CO. *Generalized bilinear models for bias correction in large-scale genomics data.* (Invited talk)

12th Conference on Bayesian Nonparametrics (BNP12), June 27, 2019, Oxford, UK. *Flexible perturbation models for robustness to misspecification.* (Invited talk)

BYU Statistics Seminar, Mar 28, 2019, Brigham Young University. *Flexible perturbation models for robustness to misspecification.* (Invited talk)

MyAgeGroup2 meeting, Mar 10, 2019, Birmingham, AL. *Statistics and machine learning for the biology of aging.* (Invited talk)

Joint International Society for Clinical Biostatistics and Australian Statistical Conference (ISCB-ASC), Aug 30, 2018, Melbourne, Australia. *Robust inference using power posteriors: Calibration and inference.* (Invited talk)

Joint Statistical Meetings (JSM), Aug 1, 2018, Vancouver, BC. *Robust clustering using power posteriors: Calibration and inference.* (Invited talk)

Radcliffe exploratory seminar, Statistics When the Model is Wrong, June 1, 2018, Harvard University. *Robust Bayes: Perturbations, powers, coarsening, and calibration.* (Talk)

HSPH Faculty Meeting, Mar 27, 2018, Harvard University. *Predicting individual response to aging interventions.* (Invited talk)

BU Probability and Statistics Seminar, Mar 15, 2018, Boston University. *Robust Bayesian inference via coarsening.* (Invited talk)

WPI Statistics Seminar, Mar 12, 2018, Worcester Polytechnic Institute. *Robust Bayesian inference via coarsening.* (Invited talk)

MyAgeGroup meeting, Mar 3, 2018, Austin, TX. *Statistics and machine learning for the biology of aging.* (Invited talk)

International Workshop on Objective Bayes Methodology (O-Bayes), Dec 11, 2017, University of Texas, Austin. *Inference for cancer phylogenetics.* (Poster, Discussant)

Joint Statistical Meetings (JSM), Jul 31, 2017, Baltimore, MD. *Cancer phylogenies and nonparametric clustering.* (Invited talk)

19th Meeting of New Researchers in Statistics and Probability, Jul 28, 2017, Johns Hopkins University. *Cancer phylogenetic inference.* (Poster)

11th Conference on Bayesian Nonparametrics (BNP11), June 29, 2017, Paris, France. *Several interpretations of the power posterior.* (Invited talk)

ICERM Probabilistic Scientific Computing Workshop, June 8, 2017, Providence, RI. *Inference using partial information.* (Invited talk)

MIT Machine Learning Colloquium, April 26, 2017, Massachusetts Institute of Technology. *Robust Bayesian inference via coarsening.* (Invited talk)

9th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2016), Dec 11, 2016, Seville, Spain. *Non-standard approaches to nonparametric Bayes.* (Invited talk)

FocuStat L^η Research Kitchen, Oct 12, 2016, University of Oslo, Norway. *Robust Bayesian inference via coarsening.* (Invited talk)

Pattern Theory Seminar, Oct 5, 2016, Brown University. *Robust Bayesian inference via coarsening.* (Invited talk)

Joint Statistical Meetings (JSM), Aug 3, 2016, Chicago, IL. *Robust Bayesian inference via coarsening.* (Invited talk)

International Society for Bayesian Analysis (ISBA) World Meeting, June 14, 2016, Sardinia, Italy. *Robust Bayesian inference via coarsening.* (Invited talk)

Information Theory and Applications (ITA) Workshop, Feb 3, 2016, La Jolla, CA. *Robust Bayesian inference via coarsening.* (Poster)

8th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2015), Dec 14, 2015, London, UK. *Robust Bayesian inference via coarsening.* (Invited talk)

Bayesian Nonparametrics: The Next Generation workshop at NeurIPS, Dec 12, 2015, Montreal, Canada. *Non-standard approaches to nonparametric Bayes.* (Invited talk)

Harvard Statistics Departmental Colloquium, Sept 21, 2015, Harvard University. *Robust Bayesian inference via coarsening.* (Invited talk)

Joint Statistical Meetings (JSM), August 11, 2015, Seattle, WA. *Robust Bayesian inference via coarsening.* (Speed talk, poster)

Bayesian Nonparametrics: Synergies between Statistics, Probability and Mathematics, June 30, 2015, SAMSI. *Robust Bayesian inference via coarsening.* (Poster)

10th Conference on Bayesian Nonparametrics (BNP10), June 23, 2015, Raleigh, NC. *An approach to inference under misspecification.* (Talk)

G70: A Celebration of Alan Gelfand's 70th Birthday, April 20, 2015, Duke University. *The small clustering problem: What if the clusters don't grow with N?* (Poster)

Texas A&M Statistics Departmental Colloquium, October 31, 2014, Texas A&M University. *Combinatorial stochastic processes for variable-dimension models.* (Invited talk)

International Society for Bayesian Analysis (ISBA) World Meeting, July 14-18, 2014, Cancún, Mexico. *Combinatorial stochastic processes for variable-dimension models.* (Invited talk)

New England Statistics Symposium (NESS), April 25-26, 2014, Harvard School of Public Health. *Combinatorial stochastic processes for variable-dimension models.* (Talk)

Duke Statistical Science Seminar, February 7, 2014, Duke University. *Combinatorial stochastic processes for variable-dimension models.* (Invited talk)

Neural Information Processing Systems (NeurIPS), December 5-8, 2013, Lake Tahoe, NV. *A simple example of Dirichlet process mixture inconsistency for the number of components.* (Full oral presentation)

Pattern Theory Seminar, November 6, 2013, Brown University. *Dirichlet process mixture inconsistency for the number of components, and dimension mixture models.* (Invited talk)

REU Seminar (Research Experience for Undergraduates), June 28, 2013, Brown University, Division of Applied Mathematics. *Random matrices with fixed row and column sums.* (Invited talk)

9th Conference on Bayesian Nonparametrics (BNP9), June 10-14, 2013, Amsterdam. *Dimension mixtures of finite-dimensional models.* (Poster) Winner of 1st place in poster competition.

New England Machine Learning day (NEML), May 1, 2013, Cambridge, MA. *Posterior consistency for the number of components in a finite mixture.* (Poster)

New England Statistics Symposium (NESS), April 27, 2013, Storrs, CT. *Posterior consistency for the number of components in a finite mixture.* (Poster)

MathSlam, March 22, 2013, Brown University, Division of Applied Mathematics. *Exact sampling and counting for fixed-margin binary matrices.* (Invited talk)

Brown University Symposium for Undergraduates in the Mathematical Sciences (SUMS), March 9, 2013. *High-dimensional parameter spaces and Fisher information.* (Invited talk)

Neural Information Processing Systems (NeurIPS), Workshop on Modern Nonparametric Methods in Machine Learning, December 3-8, 2012, Lake Tahoe, NV. *Posterior consistency for the number of components in a finite mixture.* (Speed talk, poster)

Graduate Student Statistics Seminar (GSSS), October 12, 2012, Brown University. *Doob's remarkable theorem on posterior consistency.* (Talk)

ICERM Bayesian Nonparametrics Workshop, September 17-21, 2012, Providence, RI. *Dirichlet process mixtures are inconsistent for the number of components in a finite mixture.* (Talk)

New England Statistics Symposium (NESS), April 16, 2011, Storrs, CT. *A practical algorithm for exact inference on tables.* (Talk) One of four winners of the IBM Student Research Award.

Joint Statistical Meetings (JSM), July 31-August 5, 2010, Vancouver, BC. *A practical algorithm for exact inference on tables.* (Talk)