MARINA VANNUCCI

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PERSONAL: Born in Prato, Italy, on July 23, 1966. Dual Citizen: Italy & USA.

RESEARCH INTERESTS

Theory & Methods: Bayesian modeling, Graphical models, Nonparametric Bayes, Statistical computing, Variable selection, Wavelets.

Applications: Bioinformatics, Large-scale Genomic data, Neuroscience & Neuroimaging, Engineering.

EDUCATION

1996	Ph.D., Statistics, University of Florence, Italy.
	Thesis title: *On the Application of Wavelets in Statistics* (in Italian).
	S.I.S. (Italian Statistical Society) prize *Best Doctoral Thesis in Statistics*.
	Advisor: Prof. Antonio Moro.
1992	Laurea (B.S.), Mathematics, University of Florence, Italy.

EXPERIENCE

2016-	Noah Harding Professor of Statistics, Rice University, TX.
2007-	Adjunct Professor, Department of Biostatistics, UT M.D. Anderson Cancer Center, TX.
2014-2019	Chair, Department of Statistics, Rice University, TX.
Fall 2013	Associate Chair, Department of Statistics, Rice University, TX.
2007-2017	Director, Interinstitutional Graduate Program in Biostatistics, Rice University and UT M.D. Anderson Cancer Center, TX.
2014-2016	Honorary Chair Professor (by courtesy), Dept of Functional Genomics, Univ of Liverpool, UK.
2007-2016	Professor, Department of Statistics, Rice University, TX.
Spring 07	Adjunct Professor, Department of Statistics, Rice University, TX.
2005-2007	Professor, Department of Statistics, Texas A&M University, TX.
2005-2007	Program Coordinator, Training Program in Bioinformatics, Texas A&M University.
2005-2007	Director, Biostatistics & Bioinformatics Facility Core, NIEHS Center for Environmental and Rural Health (CERH), Texas A&M University.
2003-2005	Associate Professor, Department of Statistics, Texas A&M University, TX.
1998-2003	Assistant Professor, Department of Statistics, Texas A&M University, TX.
1996-1998	Research Fellow, Institute of Mathematics and Statistics, University of Kent at Canterbury, UK.

VISITING POSITIONS

Spring 2014	Visiting Fellow, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.
Spring 2014	Department of Statistics, University of Perugia, Italy (Sabbatical leave).
Summers '05-08	Department of Statistics, University of Florence, Italy.
Fall 2006	Department of Statistics, Rice University, TX.
Fall 2004	NSF Visiting Fellow, Biostatistics Department, Columbia University, NY (Sabbatical leave).
Summer 2001	Department of Statistics, Stanford University, CA.
Fall 2001	Department of Statistics, Stanford University, CA (Junior leave).
Summer 1999	Institute of Mathematics, Statistics & Actuarial Science, University of Kent at Canterbury, UK.
Fall 1995	Department of Statistical Science, Duke University, NC (visiting Ph.D. student).
Summer 1995	Department of Statistical Science, Duke University, NC (visiting Ph.D. student).
Spring 1995	Department of Mechanical Engineering, Rice University, TX (visiting Ph.D. student).

HONORS & AWARDS

2020	Zellner Medal, International Society for Bayesian Analysis (ISBA). [Given to recognize members who have rendered exceptional service to ISBA over an extended period of time, with long-lasting impact].
2020	Outstanding Doctoral Thesis Adviser Award, School of Engineering, Rice University. [Given in recognition of the achievements of a faculty member's doctoral students who completed all degree requirements from January 1, 2015, to December 31, 2019.]
2019	*Epilepsia OPEN* Clinical Article Award, Editors' choice. [Given to the best original clinical article published during the preceding year.]
2019	Career Champion certificate, Center for Career Development, Rice University.
2018	Lindley Prize (honorable mention), International Society for Bayesian Analysis (ISBA). [Awarded for innovative research in Bayesian Statistics that is presented at an ISBA World Meeting and accepted for publication in the journal Bayesian Analysis.]
2018	Elected President of the International Society for Bayesian Analysis (ISBA).
2016	Named Noah Harding Professor, Rice University.
2014	Honorary Chair Professorship (by courtesy), Dept of Functional Genomics, U. Liverpool, UK (2014-16).
2014	Elected Fellow, International Society for Bayesian Analysis (ISBA).
2012	Elected Fellow, American Association the the Advancement of Science (AAAS).
2009	Elected Fellow, Institute of Mathematical Statistics (IMS).
2007	Elected Member, International Statistical Institute (ISI).
2006	Elected Fellow, American Statistical Association (ASA).
2003	Mitchell Prize, International Society for Bayesian Analysis (ISBA). [Awarded in recognition of an outstanding paper that describes how a Bayesian analysis has solved an important applied problem.]
2003	*JASA-Applications and Case Studies* Editor's Invited Paper. [Given to one paper per year, to be highlighted in a special invited session at the Joint Statistical Meetings, and to appear with discussion in the journal.]
2001	CAREER award, National Science Foundation.
1997	Elected Member, Royal Statistical Society (RSS).
1997	S.I.S. (Italian Statistical Society) award for *Best Doctoral Thesis in Statistics*.

[Given to the best original PhD Thesis completed during the preceding year.]

1992   Graduate School Fellowship for studies in Statistics, University of Florence (1992-1995).

1992   IBM Scholarship on "Statistical software evaluation".

SPECIAL LECTURES

2021   Data Science Christmas Lecture, Florence Center of Data Science, U. of Florence, Italy.

2021   Distinguished Speaker, University of California at Irvine, CA.

2019   Keynote Speaker, 6th Bayesian, Fiducial & Frequentist Conf, SAMSI/Duke University, Raleigh, NC.

2017   Keynote Speaker, SRCOS Summer Research Conference, Jekyll Island, GA.

2017   H.A. David Distinguished Lecture, Iowa State University, Ames, IA.

2016   Plenary Lecturer, 3rd Bayesian Young Statisticians Meeting, Florence, Italy.

2014   Microsoft Distinguished Speaker, University of Washington, Seattle.

2014   Keynote Speaker, 12th ISBA World Meeting, Cancun, MX.

2012   Plenary Lecturer, XII LatinAmerican Congress on Prob. & Mathematical Stat., Valparaiso, Chile.

2011   Keynote Speaker, Conference of Texas Statisticians, College Station, TX.

2010   Invited Lecturer, 9th Valencia International Meeting on Bayesian Statistics, Alicante, Spain.

2007   Plenary Lecturer, International Biometric Society, Pisa, Italy.

2006   Keynote Speaker, Workshop on Bayesian Inference in Complex Stochastic Systems, Warwick, UK.

EDITORIAL RESPONSIBILITIES

2020-2023   Co-Editor, *Journal of the American Statistical Association - Theory & Methods*, an official journal of the American Statistical Association (ASA).

2016-2018   Co-Editor, *Stat*, an electronic scientific journal published by Wiley-Blackwell on behalf of the International Statistical Institute (ISI).

2013-2015   Editor-in-Chief, *Bayesian Analysis*, an electronic journal of the International Society for Bayesian Analysis (ISBA).

Associate Editor:

Journal of the American Statistical Association - T&M (2011-2012; 2017-2019)

Journal of the Royal Statistical Society, Series B (2010-2012)

Journal of the American Statistical Association - A&CS (2006-2009)

Technometrics (2004-2007)

Chemometrics and Intelligent Laboratory Systems (2001-2006)

Deputy Editor, *Bayesian Analysis* (2005-2009)

ADMINISTRATIVE AND LEADERSHIP EXPERIENCE

- *Chair, Department of Statistics, Rice University*

  I completed a 5-year term as Department chair at Rice University during 2014-2019. In that role, I was involved in the Data Science initiative at Rice, particularly in the creation of a DS Minor degree program and in facilitating the creation, and supporting the activities, of the Data to Knowledge (D2K) Lab. I established the Thompson Memorial fund, that supports the James R. Thompson Distinguished Lecture Series and the James R. Thompson Student Award. I worked successfully on two tenure cases and on retention cases. I hired two Assistant Professors. I oversaw a complete revamp of the PhD graduate program, including a revision of the curriculum, qualifying-exams and degree requirements, and the procedures for the annual review of PhD students. I established student travel funds for graduates and UG students. I addressed issues of grade inflation in UG courses and restructured personnel and responsibilities in the admin staff office. I oversaw a complete revamp of the departmental website. I established the departmental Graduate Student Committee, the UG Student Advisory Board, the Faculty Awards and Special Lectures Committee and the External Departmental Advisory Board.

- *President, International Society for Bayesian Analysis*

  As the 2018 Elected President of the International Society for Bayesian Analysis (ISBA), I oversaw the regular activities of the Society; I signed an MOU between ISBA and ISI (International Statistical Institute), to increase cooperation between the two societies; I established a cooperation between ISBA and IMS/CUP (Institute of Mathematical Statistics and Cambridge University Press), for new volumes in the IMS Monographs series and IMS Textbooks series; I organized and conducted Board meetings during the 2018 ISBA World Meeting. Furthermore, I had the challenging task of addressing issues of sexual harassment that affected the Society and worked as a member of the Task Team SafeISBA, establishing a Code of Conduct and related Procedures.

- *Director, Interinstitutional Graduate Program in Biostatistics with UT M.D. Anderson Cancer Center*

  At Rice, I was co-Director (with Gary Rosner) and then Director and PI of a collaborative training program with the MD Anderson, during the period 2007-2017. The program aims at training graduate students in biostatistics with a specific focus on cancer research and it is funded by NIH/NCI via a T32 training grant. As Director/PI, I was responsible for the overall coordination of the program, including mentoring students, coordinating the curriculum across institutions, trainee recruitment, and arranging for summer internship projects. I also secured the 2013 renewal of the NIH/NCI training grant.

- *Editorial Leadership*

  During my term as Editor-in-Chief of *Bayesian Analysis* (2013-2016), the flagship journal of ISBA, I facilitated the re-organization and the update of the editorial process, to conform with modern professional standards. I fostered fast review processes and improved coordination and communication among Editors, AEs and referees. I prompted the adoption of production and editing by an expert scientific editing company, for a more efficient handling of the manuscripts post-acceptance, including the management of the journal website. Positive outcomes were seen in the increased number of submissions and the improved rankings of the Journal.

INTERNATIONAL SERVICE

- *Member, International Scientific Advisory Comt,* BigInsight*, Oslo, Norway* (2016-2023).

BigInsight is a Norwegian center for research-based innovation, funded by the Research Council of Norway. The Scientific Committee advises on activities and research plans, produces written assessments of progress and supports efforts towards the renewal of funding.

- *Member, International Scientific Advisory Comt, CANSSI - Canadian Statistical Sciences Institute* (2019-2021).

The Scientific Advisory Committee adjudicates competitions for Collaborative Research Team projects and major workshops and conferences, and makes funding recommendations to the Board. The committee, chaired by the Director of CANSSI, consists of prominent statistical scientists, normally from outside Canada.

- *Foreign member, National Scientific Qualification Committee, Ministry of Education, Italy* (2012-2014).

In the Italian academic system, faculty positions are advertised as national competitions and managed by the individual institutions. Since 2010, participants in competitions for Associate and Full professor levels are required to possess the "National Scientific Qualification". This qualification is granted in each academic sector by a National Committee appointed by the Ministry of Education. I served as foreign member of the National Committee for the Statistics sector for the years 2012-2014. The Committee performed a non-comparative assessment of the scientific qualifications of candidates to the roles of Associate/Full professor, and evaluated 350 total candidates in 2012-2013 and 54 total candidates in 2013-2014. All procedures, from the application phase to the publication of the results, were managed electronically. Results and documents were made available through a dedicated platform.

OTHER INTERNATIONAL SERVICE

2021-2026 Promoter of the Agreement of Cultural & Scientific Cooperation between U. of Florence, Italy, and Rice - Program Coordinator, Student Exchange Program in Statistics and Data Science.
2019 Faculty Search Comt member, Dept of Mathematics, University of Oslo, Norway.
2016 Scientific Advisory Comt member, MRC Biostatistics, Institute of Public Health, Cambridge, UK.
2015 Faculty Search Comt member, Institute of Basic Medical Sciences, U. of Oslo, Norway.

EXTERNAL ADVISORY COMMITTEES

2016-2021 Executive Comt member, NLM Training Program in Biomedical Informatics, Gulf Coast Consortia, TX.
2019 Chair, External Review Comt, Dept of Statistical Science, Duke University, NC.
2010-2017 Executive Comt member, NIDA Training Program in Stat Genetics, MD Anderson Cancer Center, TX.

GRANTS FUNDED

NSF/DMS 2113602 *Collaborative Research: Covariate-driven Approaches to Network Estimation.* Role: PI (co-PI: Christine Peterson). Period: 08/15/2021-07/31/2024.

NIH/NIMH R01 MH124115. *Computational and Electrochemical Substrates of Social Decision-Making in Humans.* Role: subcontract-PI (PI: Read Montague). Period: 08/01/2020-05/31/2025.

NSF/DMS 1811568. *Collaborative Research: Bayesian Network Estimation across Multiple Sample Groups and Data Types.* Role: PI (co-PI: Christine Peterson). Period: 08/15/2018-08/14/2021.

NSF/SES 1659925. *Collaborative Research: Bayesian Approaches for Inference on Brain Connectivity.* Role: PI (co-PI: Michele Guindani). Period: 07/01/2017-06/30/2021 (1-year no-cost extension).

Institute of Biosciences and Bioengineering Hamill Innovation Awards, Rice University. *Characterizing Divergent Brain Connectivity Networks Following Pediatric Traumatic Brain Injury.* Role: co-PI (with Dana DeMaster). Period: 01/01/2019-12/31/2019.

Shell International Exploration & Production Inc., Sponsored Research Award. *Bayesian State-Space Models for Sensors and Drilling Data.* Role: PI. Period: 01/01/2018-12/31/2019.

Social Sciences Research Institute's Collaborative Research Grant Award, Rice University. *Individual Differences in the Neural Code for Reading.* Role: co-PI (with Simon Fischer-Baum). Period: 07/01/2016-06/30/2017.

NIH/NIGMS R01 GM104972 (joint NSF/NIGMS Mathematical Biology Program). *Nonparametric Bayesian Approaches to Modeling Protein Structure.* Role: subcontract-PI (PI: David Dahl). Period: 05/01/2012-04/30/2017.

NIH/NHLBI P01 HL082798. *Genetic & Physiological Basis of Salt-Induced Hypertension.* Role: subcontract-PI (PI: Allen Cowley). Period: 07/01/2011-06/30/2016.

Comput & Integrat Biomed Res Center Seed Grant, Baylor College of Medicine. *Connectome Based Integration of fMRI and DTI to Define Epileptogenic Zones.* Role: Co-PI (with Z. Haneef and H. Levin). Period: 07/01/2014-06/30/2015.

Comput & Integrat Biomed Res Center Seed Grant, Baylor College of Medicine. *Patterns of Network Connectivity in Temporal Lobe Epilepsy.* Role: Co-PI (with Z. Haneef and H. Levin). Period: 07/01/2013-06/30/2014.

NSF/DMS 1007871. *Bayesian Methods for Variable Selection in Generalized/Nonlinear Models.* Role: Sole PI. Period: 07/01/2010-06/30/2014 (one-year no-cost extension).

Collaborative Research Fund, Virginia and L.E. Simmons Family Foundation. *Novel Approach for Biomarker Discovery in Neurodegeneration: Comparative Genomics, Transcriptomics and Metabolomics.* Role: Co-PI. (with M. Maletic-Savatic and J. Botas). Period: 01/01/2011-12/31/2011

NIH/NIGMS R01 GM081631. *Side Chain Driven Refinement of Protein Structure.* Role: subcontract-PI (PI: Jerry Tsai). Period: 08/01/2007-07/31/2011.

NIH/NHGRI R01 HG003319. *Bayesian Methods for Genomics with Variable Selection.* Role: Sole PI. Period: 04/01/2005-03/31/2011 (one-year supplement).

NSF/DMS 0605001. *Wavelet-Based Statistical Modeling and Applications.* Role: Sole PI. Period: 09/01/2006-08/31/2010 (1-year no-cost extension).

NIH/NIEHS Center for Environmental and Rural Health (Director: Philip Mirkes). Role: Director, Biostatistics & Bioinformatics Facility Core. Period: 07/01/2005-06/30/2007.

NSF/DMS CAREER. *Some Applications of Wavelets in Statistics.* Role: Sole PI. Period: 01/01/2001-12/31/2005.

NIH/NCI R01 CA107304. *Adaptive Methodology for Functional Biomedical Data.* Role: Co-I (year 1, 07/01/2004-06/30/2005; PI: Jeff Morris).

Telecommunications and Informatics Task Force at TAMU. *HAIL: High Availability network Infrastructure Laboratory.* Role: Co-PI. (with A.L.N. Reddy). Period: 07/01/2003-06/30/2005.

Texas Higher Education Advanced Technology. *Network Architectures Based on Partial State.* Role: Co-I. (PI: A.L.N. Reddy). Period: 07/01/2002-06/30/2003.

Texas Higher Education Advanced Research Grant. *Multivariate Wavelet Component Selection in Near-Infrared Calibration Problems.* Role: PI. Period: 07/01/2000-06/30/2001.

Training Grants:

NSF/DMS 1547433. *RTG: Cross-Training in Statistics and Computer Science at Rice University.* Role: Lead PI (co-PI: Luay Nakhleh). Period: 08/01/2016-07/31/2020 (1-year no-cost extension).

NIH/NCI T32 CA096520. *Training Program in Biostatistics for Cancer Research.* Role: Co-Director/co-PI (2007-2009, with G. Rosner); Director/PI (2010-2019). Period: 09/01/2007- 08/31/2019.

NIH/NCI R25 CA090301. *Training Program in Bioinformatics* (Director: Raymond J. Carroll). Role: Co-I., Program Coordinator and Mentor of postdoctoral trainees. Period: 07/01/2005-06/30/2008.

Travel Awards:

2019	Brazil@Rice Collaborative Travel Grant.
2004	Texas/United Kingdom Collaborative Research Initiative.
2003-2004	National co-founded research, MIUR, Italy.
2003	NSF International Travel grant.
1999-2002	National co-founded research, MURST, Italy.
2001	Texas Transportation Institute, Texas A&M University, support for research.
1999	International Research Travel Assistant Grant, Texas A&M University.
1998	Overseas Conference Grant, The British Academy, UK.
1997	Conference Grant, The Royal Society, UK.
1996	Fondi ex quaranta%, Italy.

PATENTS AND PATENT APPLICATIONS

Process for Real Time Geological Localization with Kalman Filtering. Application Number: PCT/US 201904405 1; Publication Number: WO 2020/028310 A1; Filing Date: 2019-07-30; Publication Date: 2020-02-06.

GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Ph.D Students and Current Employment (when known):

1. LEONARDO FABBRONI (Ph.D. 2001).
   Ph.D. Thesis title: "On the Analysis of Signals from an Interferometric Gravitational Wave Detector" (in Italian, co-Advisor Fabio Corradi). **Winner of the Italian Statistical Society prize for Best Doctoral Thesis in Statistics**.

2. NAIJUN SHA (Ph.D. 2002). *Associate Professor*, Dept of Mathematical Sciences, UT El Paso, TX.
   Thesis title: "Bolstering CART and Bayesian Variable Selection Methods for Classification".

3. FRANCESCO GABBANINI (Ph.D. 2002). *Tech Leader*, Eli Lilly, Italy.
   Thesis title: " Analysis of Data Coming from the Monitoring System Installed on the Santa Maria del Fiore Cathedral in Florence" (in italian, co-Advisor Antonio Moro).

4. CHUN GUN PARK (Ph.D. 2003). *Assistant Professor*, Kyonggi University, Republic of Korea.
   Thesis title: "MCMC methods for wavelet representations in single index models".

5. KYUNGDUK KO (Ph.D. 2004). *Associate Professor*, Department of Mathematics, Boise State University, ID.
   Thesis title: "Bayesian wavelet approaches to parameter estimation and change point detection in ARFIMA models".

6. DEUKWOO KWON (Ph.D. 2005). *Research Assistant Professor*, Division of Biostatistics, Department of Public Health Sciences, University of Miami Leonard M. Miller School of Medicine, Miami, FL.
   Thesis title: "Wavelet Methods and Statistical Applications: Network Security and Bioinformatics".

7. SINAE KIM (Ph.D. 2006). *Assistant Professor*, Dept of Biostatistics, The State University of New Jersey, NJ.
   Winner of the 2005 E. Parzen Fellowship Award, Texas A&M University.
   Thesis title: "Bayesian Variable Selection in Clustering via Dirichlet Process Mixture Models".

8. SANG HAN LEE (Ph.D. 2007). *Research Assistant Professor*, NYU School of Medicine, NY.
   Thesis title: "Estimating and Testing of Functional Data with Restrictions".

9. JAESIK JEONG (Ph.D. 2008). *Associate Professor*, Dept. of Statistics, Chonnam National University, Korea.
   Thesis title: "Some Applications of Wavelets to Time Series Data".

10. FRANCESCO STINGO (Ph.D. 2010). *Associate Professor*, Department of Statistics, University of Florence, Italy.
    Thesis title: "Bayesian Methods for Data Integration with Variable Selection: New Challenges in the Analysis of Genomic Data" (co-Advisors G. Marchetti and E. Stanghellini).
    Winner of the Italian Statistical Society prize for Best Doctoral Thesis in Statistics.

11. COLLEEN KENNEY (Ph.D. 2010). *Thesis title:* "On the Separation of T Tauri Star Spectra using Non-negative Matrix Factorization and Bayesian Positive Source Separation".

12. TERRANCE SAVITSKY (Ph.D. 2010). *Researchl Statistician*, Bureau of Labor Statistics, Washington D.C.
    Thesis title: "Generalized Gaussian Process Models with Bayesian Variable Selection".

13. BEIBEI GUO (Ph.D. 2010). *Assistant Professor*, Department of Statistics, Louisiana State U., LA.
    Thesis title: "Statistical Methods for Bioinformatics: Estimation of Copy Number and Detection of Gene Interactions".

14. ALBERTO CASSESE (Ph.D. 2013). *Assistant Professor*, University of Maastricht, The Netherland.
    Thesis title: "A Hierarchical Bayesian Modeling Approach to Genetical Genomics Data with Measurement Error" (co-Advisor Emanuela Dreassi).

15. CHRISTINE PETERSON (Ph.D. 2013). *Assistant Prof*, Dept of Biostats, UT MD Anderson Cancer Center, TX.
    Awarded a 3-year NLM Training Fellowship in Biomedical Informatics.
    Thesis title: "Bayesian Graphical Models for Biological Network Inference".
    Winner of the ISBA Savage Award for Best Thesis in Applied Methodology.

16. LINLIN ZHANG (Ph.D. 2015). *Data Scientist*, ExxonMobil, Houston, TX.
    Thesis title: "Bayesian Nonparametric Models for fMRI Data".
    Honorable mention, ISBA Savage Award for Best Thesis in Applied Methodology.

17. SHARON CHIANG (Ph.D. 2016). Resident in Neurology, University of California at San Francisco, CA.
    Awarded a 3-year NLM Training Fellowship in Biomedical Informatics.
    Voted best plenary speaker, NLM's 2015 Informatics Training Conference.
    Thesis title: "Hierarchical Bayesian Models for Multimodal Neuroimaging Data".
    M.D. Degree in 2018, Baylor College of Medicine, Houston, TX
    (Combined Baccalaureate/M.D. 8-year medical program, Rice/BCM).

18. QIWEI LI (Ph.D. 2016). *Assistant Professor*, Department of Mathematical Sciences, UT Dallas, TX.
    M. Clinton Miller III Outstanding Poster Award, 2016 SRCOS Research Conference, AK.
    Thesis title: "Bayesian Models for High-Dimensional Count Data with Feature Selection".

19. DUNCAN WADSWORTH (Ph.D. 2016). *Senior Data Scientist*, Apple, Seattle, WA.
    Thesis title: "Bayesian Methods for the Analysis of Microbiome Data".

20. RYAN WARNICK (Ph.D. 2018). *Scientist*, BP Center on High-Performance Computing, Houston, TX.
    Awarded a 3-year NSF Graduate Research Fellowship.
    Thesis title: "Bayesian Joint Graphical Modeling Approaches for Covariance and Dynamic Functional Connectivity Analysis from Neuroimaging Data".

21. ELIN SHADDOX (Ph.D. 2019). *Postdoctoral Fellow*, Dept of Biostatistics, University of Colorado, Denver, CO.
    Awarded a 2-year NLM Training Fellowship in Biomedical Informatics and Data Science.
    Distinguished poster presentation award, 2018 Keck Center Research Conference, TX.
    Thesis title: "Bayesian Graphical Models for Multiple Networks".

22. JEONG HWAN (ERIC) KOOK (Ph.D. 2019). *Senior Scientist*, Merck & Co., New Jersey, NJ.
    Thesis title: "Variational Inference for Bayesian Variable Selection with Applications to Biomedical Data".

23. YINSEN MIAO (Ph.D. 2019). *Fellow*, Shell AI Residency Programme, USA.
    Winner of the 2019 James R. Thompson Graduate Student Award, Rice University.
    Recipient of the Shell Wells Leadership Team award, 2018.
    Thesis title: "Scalable Bayesian Algorithms for Quantitative Geosteering".

24. NATHAN OSBORNE (Ph.D. 2021). *Senior Data Scientist* at Intuit, San Diego, CA.
    Thesis title: "Advances in Bayesian Approaches for Directed and Undirected Graphical Models".

25. EMILY WANG (Ph.D. expected 2022).
    Awarded a 2-year NLM Training Fellowship in Biomedical Informatics and Data Science.

26. CHUNSHAN LIU (Ph.D. expected 2022).

27. MINGRUI (SCOTT) LIANG (current).

28. ZIJIAN ZENG (current).

29. YANGFAN REN (current).

Postdoctoral Fellows and Current Employment:

1. MAHLET G. TADESSE (2002-2004). *Professor*, Dept. Mathematics, Georgetown University, Washington D.C.

2. MICHAEL SWARTZ (2004-2006). *Associate Professor*, Division of Biostatistics, UT School of Public Health, Houston, TX. [Also served as senior mentor on his K07CA123109, NIH/NCI, 2007-2012)]

3. QIANXING (QUINCY) MO (2005-2006). *Associate Member*, Dept. Biostats, Moffitt Cancer Center, Tampa, FL.

4. ANN CHEN (2006-2008). *Associate Member*, Department of Biostatistics, Moffitt Cancer Center, Tampa, FL.

5. ALEJANDRO VILLAGRAN (2008-2010). *Senior Data Scientist*, The Boeing Company, Seattle, WA.

6. FRANCESCO STINGO (2010-2011). *Associate Professor*, Department of Statistics, University of Florence, Italy.

7. KASSANDRA FRONCZYK (2011-2014). *Applied Statistician*, Lawrence Livermore National Laboratory, CA.

8. ALBERTO CASSESE (2013-2015). *Assistant Professor*, University of Maastricht, The Netherland.

9. MATTHEW KOSLOVSKY (2018-2020). *Assistant Professor*, Dept of Statistics, Colorado State University, CO.

10. CHENG-HAN YU (2018-2020). *Assistant Professor*, Dept of Math & Stat Sciences, Marquette University, WI.

11. DUSTIN PLUTA (current).

12. BENIAMINO HADJ-AMAR (current).

Other Fellows/Students I have worked with:

1. KYLA GIBNEY. PhD student, GSBS, MD Anderson Cancer Center, Houston, TX.

2. RICKY FLORES. *Physician*, Baylor College of Medicine, TX.
Served as mentor for his CPRIT Training Fellowship in Computational Cancer Biology (2011-2013).

3. MISHA KOSHELEV (Ph.D. 2011, M.D. 2012). Assistant Prof. of Dermatology, UT School of Public Health, TX.
Served as mentor on his 2-year pre-doc NLM Training Fellowship in Biomedical Informatics and Comp Biology.

4. KRISTIN LENNOX (Ph.D. 2010). At Lawrence Livermore National Laboratory, CA.

5. YUTAKA YOSHIDA. (M.S. 2015). Visiting student, Hokkaido University, Japan.

Master Students: ANNE K. FUEHRBOETER (M.S. 1996); VERONIQUE DELOUILLE (M.S. 1998); ANDREW SHARKEY (M.S. 1998). JEROME F. BENNETT (M.S. 1999); ANU RAMANATHAN (M.S. 2002); CHANGFU XIAO (M.S. 2005); ADARSH JOSHI (M.S. 2006).

Undergraduate Students: ADESOLA (DESSY) AKINFENWA (B.A. 2019); AMI SHETH (B.A. 2019); XIN TAN (B.A. 2021); NOAH FRANKLIN (B.A. 2021); EMMA DUNN (B.S. 2022); DILEKA GUNAWARDANA (B.S. 2022); YIHAN "LYNN" NIU (B.S. 2023); LISA LIN (B.S. 2023).

PUBLICATIONS

(H-index 44 on Google Scholar, ca. 6383 total citations, as of 01/05/2022)

Books:

1. Do, K.-A., Mueller, P. and Vannucci, M. (2006). *Bayesian Inference for Gene Expression and Proteomics.* Edited Volume. Cambridge University Press.

2. Do, K.-A., Qin, Z. and Vannucci, M. (2013). *Advances in Statistical Bioinformatics: Models and Integrative Inference for High-Throughput Data.* Edited Volume. Cambridge University Press.

3. Frigessi, A., Buhlmann, P., Glad, I., Langaas, M., Richardson, S. and Vannucci, M. (2016). *Statistical Analysis for High-Dimensional Data - The Abel Symposium 2014.* Edited Volume. Springer Verlag.

4. Tadesse, M.G. and Vannucci, M. (2021). *Handbook of Bayesian Variable Selection.* Edited Volume. Chapman & Hall/CRC.

   This edited book provides a comprehensive review of theoretical, methodological and computational aspects of Bayesian methods for variable selection. The topics covered include spike-and-slab priors, continuous shrinkage priors, Bayes factors, Bayesian model averaging, partitioning methods, as well as variable selection in decision trees and edge selection in graphical models. Chapters are contributed by experts in the field.

5. Chiang, S., Rao, V. and Vannucci, M. (202X). *Statistical Methods in Epilepsy: Challenges and Opportunities in Neurological Data Management.* Edited Volume. Chapman & Hall/CRC. In preparation.

Theory and Methods

1. VANNUCCI, M. and VIDAKOVIC, B. (1997). Preventing the Dirac disaster: Wavelet based density estimation. *Journal of the Italian Statistical Society,* **6(2)**, 145–159.

2. BROWN, P.J., VANNUCCI, M. and FEARN, T. (1998). Multivariate Bayesian variable selection and prediction. *Journal of the Royal Statistical Society, Series B,* **60(3)**, 627–641.

3. BROWN, P.J., FEARN, T. and VANNUCCI, M. (1999). The choice of variables in multivariate regression: a non-conjugate Bayesian decision theory approach. *Biometrika,* **86(3)**, 635–648.

4. VANNUCCI, M. and CORRADI, F. (1999). Covariance structure of wavelet coefficients: Theory and models in a Bayesian perspective. *Journal of the Royal Statistical Society, Series B,* **61(4)**, 971–986.

5. BROWN, P.J., FEARN, T. and VANNUCCI, M. (2001). Bayesian wavelet regression on curves with application to a spectroscopic calibration problem. *Journal of the American Statistical Association,* **96**, 398–408.

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Methods & Applications: Cancer Research

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Methods & Applications: Biology & Biochemistry

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120. VANNUCCI, M., SHA, N. and BROWN, P.J. (2005). NIR and mass spectra classification: Bayesian methods for wavelet-based feature selection. *Chemometrics and Intelligent Laboratory Systems*, **77**, 139–148.

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146. CASSESE, A., GUINDANI, M. and VANNUCCI, M. (2016). iBATCGH: Integrative Bayesian Analysis of Transcriptomic and CGH data. In *Statistical Analysis for High-Dimensional Data - The Abel Symposium 2014*, Frigessi, A., Buhlmann, P., Glad, I., Langaas, M., Richardson, S. and Vannucci, M. (Eds). Springer Verlag, 105–123.

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Discussions and Book Reviews

151. SHA, N. and VANNUCCI, M. (2002). Contribution to the discussion of "A statistical framework for expression-based molecular classification in cancer", *Journal of the Royal Statistical Society, Series B*, **64(4)**, 737.

152. KIM, S. and VANNUCCI, M. (2007). Invited discussion of "Detecting selection in DNA sequences: Bayesian Modelling and Inference", *Bayesian Statistics 8*, edited by J.M. Bernardo, M.J. Bayarri, J.O. Berger, A.P. Dawid, D. Heckerman, A.F.M. Smith and M. West. Oxford University Press, 322–323.

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154. VANNUCCI, M. and KOOK, J.H. (2018). Invited discussion of "Bayesian Spatiotemporal Modeling Using Hierarchical Spatial Priors, with Applications to Functional Magnetic Resonance Imaging", by Bezener, M., Hughes, J. and Jones, G. *Bayesian Analysis*, **13(4)**, 1298-1303.

Other Papers

155. VANNUCCI, M. (1995). Nonparametric Density Estimation using Wavelets. *Discussion Paper* 95-26, ISDS, Duke University, USA.

156. PACINI, B. and VANNUCCI, M. (1996). Nonparametric methods for density and regression estimation (in italian). *Serie Didattica*, n.15. Department of Statistics "G.Parenti", University of Florence, Italy.

157. VANNUCCI, M. and CORRADI, F. (1996). Model shrinking of wavelet coefficients and applications. *Proceedings of the Joint Statistical Meetings, American Statistical Association.* August 4-8, Chicago, Illinois, 117–122.

158. VANNUCCI, M., MORO, A. and SPANOS, P.D. (1996). Wavelets in random processes representation. *Proceedings of the 1996 ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability.* August 7-9, Worcester, Massachusetts, 672–675.

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160. ANGELINI, C. and VANNUCCI, M. (2005). Bayesian Methods for Wavelet-based Modeling. *Bulletin of the International Society for Bayesian Analysis*, **12(2)**, 3-6.

161. ZHU, H., VANNUCCI, M. and COX, D.D. (2007). Functional data classification in cervical pre-cancer diagnosis — A Bayesian variable selection model. *Proceedings of the Joint Statistical Meetings, American Statistical Association.* July 29-August 2, Salt Lake city, UT, 1339–1346.

162. DAHL, D.B., LI, Q., VANNUCCI, M., JOO, H. and TSAI, J.W. (2013). A Bayesian Model for Protein Secondary Structure Prediction. *Proceedings 59th ISI World Statistics Congress*, 25-30 August 2013, Hong Kong, China, 133-138.

163. KOOK, J.H. and VANNUCCI, M. (2018). *NPBayes-fMRI*: Nonparametric Bayesian General Linear Models for Single- and Multi-Subject fMRI Data. *Bulletin of the International Society for Bayesian Analysis*, **25(1)**, 13-19.

164. OSBORNE, N., PETERSON, C.B. and VANNUCCI, M. (2020). Network Estimation of Compositional Data. In *Book of Short Papers - Italian Statistical Society 2020*, A. Pollice, N. Salvati and F. Schirripa Spagnolo (Eds). Pearson, 28-33.

Theses

165. VANNUCCI, M. (1992). Automatic evaluation of generating function coefficients (in italian). *Bachelor Thesis*, Dipartimento di Matematica "U.Dini", University of Florence, Italy.

166. VANNUCCI, M. (1996). On the Application of Wavelets in Statistics (in italian). *Doctoral Thesis*, Dipartimento Statistico "G.Parenti", University of Florence, Italy. [**Awarded the** S.I.S. (ITALIAN STATISTICAL SOCIETY) **prize** *Best Doctoral Thesis in Statistics*, **Italy**].

SOFTWARE

For the majority of my publications, open source codes and software packages developed by students and collaborators are available to the community, together with some of the datasets used in the applications.

- Codes for recent papers can be found at my GitHub page <https://github.com/marinavannucci>

- Some of the software packages developed for genomics and neuroimaging applications are featured at the website <http://marina.blogs.rice.edu/software/>. Among others:

  - User-friendly MATLAB GUIs for fMRI data analysis:

    * **NPBayes-fMRI**: Matlab GUI for Nonparametric Bayesian General Linear Models for Single- and Multi-Subject fMRI Data (Kook *et al.*, 2019 *Statistics in Biosciences*).
    * **BVAR-connect**: A Variational Bayes Approach to Multi-Subject Vector Autoregressive Models for Inference on Brain Connectivity Networks (Kook *et al.*, 2021 *Neuroinformatics*).

  - R/C^{++} package for the analysis of microbiome data:

    * **MicroBVS**: Dirichlet-Multinomial Regression Models for Variable Selection and Phenotypic Prediction (Wadsworth *et al.*, 2017; *BMC Bioinformatics*; Koslovsky *et al.*, 2020 *BMC Bioinformatics* & 2020 *Annals of Applied Stats*).

  - Python, R/C^{++} and Matlab codes for some of my papers on: Graphical models, regression models for count data, HMMs and time-varying coefficient models.

  - Matlab codes for some of my older papers on discrete spike-and-slab priors for Bayesian variable selection.

- R packages available at CRAN:

  - **iBATCGH**: Integrative Bayesian Analysis of Transcriptomic and CGH data.

  - **SCRSELECT**: Bayesian variable selection for a semi-competingrisks model with multiple components.

  - **KScons**: Protein structure prediction.

- Open source **iClusterBayes** function included in the Bioconductor **iClusterPlus** package available at <https://www.bioconductor.org/packages/release/bioc/html/iClusterPlus.html>

- JAVA package **cortorgles** for protein structure prediction at <http://dahl.byu.edu/software/cortorgles/>

- Web apps for protein structure prediction available at <http://marina.blogs.rice.edu/software/>

LECTURES

(201 Departmental Colloquia and Invited Lectures at Conferences - including 64 international - since 1995)

1995 Institute of Statistics and Decision Sciences, Duke University, NC.
Department of Statistics, University of Florence, Italy.

1996 Department of Statistics, University of Pavia, Italy.
Department of Mathematics, University of Bristol, UK.

1997 Institute of Mathematics and Statistics, University of Kent at Canterbury, UK.
Department of Biostatistics, Johns Hopkins University, MD.
Department of Statistics, University of Missouri-Columbia, MO.
Department of Statistics, University of South Carolina, SC.
Department of Mathematics and Statistics, University of Plymouth, UK.

1998 Young Statisticians' Meeting, University of Surrey, Guildford, UK.
Joint Statistical Meetings, Dallas, TX.

1999 Institute of Statistics and Decision Sciences, Duke University, NC.
Conference of Texas Statisticians, Dallas, TX.
Symposium on Model Selection, Empirical Bayes and Related Topics, Lincoln, NE.
SRCOS/ASA Summer Research Conference, Mountain View, AR.
Joint Statistical Meetings, Baltimore, MD.

2000 International Conference in honor of Prof. C.R. Rao, San Antonio, TX.
International Society for Bayesian Analysis, 6th world meeting, Hersonissos, Crete.
International Conference on Statistics in the 21st Century, Orono, ME.
Working Group on Model-based Clustering and Bayesian Model Selection, U. of Washington, Seattle, WA.

2001 ENAR Spring Meetings, Charlotte, NC.
The Gordon Conference on Statistics in Chemistry and Chemical Engineering, Williamstown, MA.
Department of Statistics, Stanford University, CA.
Department of Applied Mathematics and Statistics, University of California, Santa Cruz, CA.
Department of Statistics, University of California, Davis, CA.

2002 Conference of Texas Statisticians, Houston, TX.
TIES Annual Conference of the International Environmetrics Society, Genova, Italy.
Department of Mathematical Sciences, University of Arkansas, AR.
Department of Biostatistics, University of Texas M. D. Anderson Cancer Center, Houston, TX.
Department of Statistics, Carnegie Mellon University, Pittsburgh, PA.

2003 College of Science, Texas A&M University, College Station, TX.
ISI International Conference on Environmental Statistics and Health, Santiago de Compostela, Spain.
Joint Statistical Meetings, San Francisco, CA.
International Workshop on Bayesian Data Analysis, Santa Cruz, CA.
INFORMS, Institute for Operations Research and the Management Sciences Meeting, Atlanta, GA.

2004 SAMSI workshop on Multiscale Model Development and Control Design, Raleigh-Durham, NC.
ENAR Spring Meeting, Pittsburgh, PA.
36th Symposium on the Interface: Bioinformatics, Baltimore, MD.

International Society for Bayesian Analysis, World Meeting, Viña del Mar, Chile.

School of Biosciences, University of Birmingham, UK.

TX-UK workshop on Computational Biology and Biomedicine, Glasgow, Scotland.

Joint Statistical Meetings, Toronto, Canada.

The 3rd Winter Workshop on Statistics and Computer Science, Ein-Gedi, Dead Sea, Israel.

Department of Biostatistics, Columbia University, NY.

Institute of Statistics and Decision Sciences, Duke University, NC.

New York State Psychiatric Institute, Columbia University, NY.

Department of Statistics, Wharton School, University of Pennsylvania, PA.

2005 ENAR Spring Meetings, Austin, TX.

International Conference on the Interactions between Wavelets and Splines, Athens, GA.

Spring Research Conference, Park City, UT.

Statistical Society of Canada Annual Meeting, Saskatoon, Saskatchewan, Canada.

Center for Studies on Complex Systems, University of Florence, Italy.

Joint Statistical Meetings, Minneapolis, MN.

Workshop on Data Fusion in Genomics, Imperial College, London, UK.

Center for Statistical Sciences, Brown University, RI.

Center for Epidemiology and Biostatistics, University of Texas at San Antonio, TX.

2006 Department of Statistics, Texas A&M University, College Station, TX.

CNR - Consiglio Nazionale Ricerche - IMATI, Milano, Italy.

MOLPAGE Program in Statistical Analysis of Genetic and Gene Expression Data, Pavia, Italy.

Workshop on Bayesian Inference in Complex Stochastic Systems, University of Warwick, UK (**Keynote**).

8th Valencia International Meeting on Bayesian Statistics, Benidorm, Alicante, Spain.

Graybill Conference, Colorado State University, CO.

ANNET - ADHD Neuroscience Network - workshop, NYU Child Study Center, NY.

Joint Statistical Meetings, Seattle, WA.

Department of Statistics, Rice University, Houston TX.

Department of Biostatistics, University of North Carolina at Chapel Hill, NC.

Department of Statistics, North Carolina State University, Raleigh, NC.

2007 Department of Statistics, University of Illinois, Champaign, IL.

Department of Statistics, Sam Houston State University, Huntsville, TX.

ENAR Spring Meetings, Atlanta, GA.

NERC International Opportunity Workshop on Fish Toxicogenomics, University of Aveiro, Portugal.

International Biometric Society - Italian Region, Pisa, Italy (**Plenary**).

Department of Mathematics, Imperial College, London, UK.

Department of Bioinformatics and Computational Biology, UT M.D. Anderson Cancer Center, Houston, TX.

Workshop on Bioinformatics, Genetics and Stochastic Computation: Bridging the Gap. BIRS, Banff, Canada.

6th International Congress on Industrial and Applied Mathematics, Zurich, Switzerland.

2008 Workshop on Bayesian Model Selection and Objective Methods, University of Florida, FL.

9th Brazilian Bayesian Meeting, San Paulo, Brazil.

Department of Statistical Methods, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.

Department of Mathematics and Statistics, University of New Mexico, Albuquerque, NM.

Statistical Sciences Group, Los Alamos National Laboratory, Los Alamos, NM.

International Society for Bayesian Analysis, 9th World Meeting, Hamilton Island, Australia.

Department of Decision Sciences, Bocconi University, Milano, Italy.

Department of Statistics, Carnegie Mellon University, PA.

2009 TMC Proteomics Meeting, Baylor College of Medicine, Houston, TX.

Department of Statistics, University of Florence, Italy.

Department of Statistics, University of Perugia, Italy.

JSM Joint Statistical Meetings, Washington, D.C.

Department of Statistics, Columbia University, NY.

2010 Department of Mathematical Sciences, University of Texas at El Paso, TX.

Department of Statistics, University of Missouri-Columbia, MO.

Department of Biostatistics and Bioinformatics, Emory University, Atlanta, GA.

ENAR Spring Meetings, New Orleans, LA.

Workshop on Frontier of Statistical Decision Making and Bayesian Analysis, San Antonio, TX.

Workshop on Functional Data Analysis, Utah State University, Logan, UT.

Conference on Nonparametrics Statistics and Statistical Learning, Columbus, OH.

Ninth Valencia International Meeting on Bayesian Statistics, Benidorm, Alicante, Spain **(Invited Lecturer)**.

JSM Joint Statistical Meeting, Vancouver, Canada.

The Eighth ICSA International Conference, Guangzhou University, China.

Department of Mechanical and Automation Engineering, the Chinese University of Hong Kong, HK.

Department of Applied Mathematics, Shanghai Normal University, Shanghai, China.

Shanghai Institute of Foreign Trade, Shanghai, China.

Department of Statistics, Fudan University, Shanghai, China.

2011 Department of Biostatistics, UT School of Public Health, Houston, TX.

ENAR Spring Meetings, Miami, FL.

Conference of Texas Statisticians, College Station, TX **(Keynote)**.

Joint Statistical Meetings, Miami Beach, FL.

Learning in the Context of Very High Dimensional Data, Schloss Dagstuhl, Germany.

Department of Physiology, Medical College of Wisconsin, Milwaukee, WI.

Department of Statistics, Rice University, Houston, TX.

Department of Biostatistics, Harvard University, Boston, MA.

Department of Biostatistics, University of Michigan, Ann Arbor, MI.

Workshop on Current Challenges in Statistical Learning, BIRS, Banff, Canada.

2012 XII Latin American Congress of Probability and Mathematical Statistics, Vina del Mar, Chile **(Plenary)**.

ENAR Spring Meetings, Washington, D.C.

Division of Mathematical Sciences, Nanyang Technological University, Singapore.

Department of Statistics and Applied Probability, National University of Singapore, Singapore.

Joint Statistical Meetings, San Diego, CA.

8th Conference of Italian Researchers in the World, Houston, TX.

Department of Statistics, Brigham Young University, Provo, UT.

Department of Mathematics and Statistics, Boston University, MA.

Department of Economics and Business, Universitat Pompeu Fabra, Barcelona, Spain.

Barcelona BioMed Conference on Bayesian Statistics for Medical & Bioinformatics Research, Barcelona, Spain.

2013 ENAR Spring Meetings, Orlando, FL.

   IEEE International Symposium on Biomedical Imaging, San Francisco, CA.

   Workshop on High-Dimensional Inference with Applications, University of Kent at Canterbury, UK.

   School of Biological Sciences, University of Liverpool, UK.

   Conference on Statistical Science in Society, CANSSI, University of Waterloo, Canada.

   Division of Biostatistics, UT Health Science Center, School of Public Health, Houston, TX.

   6th International Conference of the ERCIM Working Group, London, UK.

2014 Medical Research Council, Biostatistics Unit, Cambridge, UK.

   Isaac Newton Institute for Mathematical Science, Cambridge, UK.

   60th Biometric Conference of the German Region of the International Biometric Society, Bremen, Germany.

   ENAR Spring Meetings, Baltimore, MD.

   Center for Computational and Integrative Biomedical Research, Baylor College of Medicine, Houston, TX.

   Twelfth World Meeting of ISBA, Cancun, MX **(Keynote)**.

   35th Annual Conference of the International Society for Clinical Biostatistics, Vienna, Austria.

   RSS/East Kent local group seminar series, University of Kent at Canterbury, UK.

   Department of Statistical Science, Duke University, NC.

   Department of Statistics, University of Washington, Seattle, WA **(Microsoft Distinguished Speaker)**.

   SAMSI workshop on Beyond Bioinformatics: Statistical and Mathematical Challenges, Raleigh-Durham, NC.

2015 Department of Epidemiology, University of Texas School of Public Health, Houston, TX.

   Department of Mathematics, University of Houston, TX.

   ICSA/Graybill Conference, Fort Collins, CO.

   Joint Statistical Meetings, Seattle, WA.

   59TH Annual Fall Technical Conference of the American Society for Quality, Houston, TX.

2016 Department of Psychology, Rice University, Houston, TX.

   Department of Statistics, University of Michigan, Ann Arbor, MI.

   Workshop on Mathematical and Statistical Challenges in Neuroimaging Data Analysis, BIRS, Banff, Canada.

   Thirteen World Meeting of ISBA, Sardinia, Italy.

   Third Bayesian Young Statisticians Meeting, Florence, Italy **(Plenary)**.

   Workshop on Novel Statistical Methods in Neuroscience, Magdeburg, Germany.

   Department of Mathematics, Washington University in St. Louis, MO.

   Department of Statistics, University of Virginia, Charlottesville, VA.

   Graduate School of Biomedical Sciences, UT MD Anderson Cancer Center, Houston, TX.

   XXVIIIth International Biometric Conference, Victoria, British Columbia.

   6th Annual NeuroEngineering Symposium, Rice University, Houston, TX.

2017 Department of Statistics, Iowa State University, Ames, IA **(H.A. David Distinguished Lecture)**.

   Center for Computational and Integrative Biomedical Research, Baylor College of Medicine, Houston, TX.

   Summer Research Conference, Southern Regional Council on Statistics, Jekyll Island, GA **(Keynote)**.

   Joint Statistical Meetings, Baltimore, MD.

   Department of Biostatistics, UT MD Anderson Cancer Center, Houston, TX.

   Department of Comput. Biology and Bioinformatics, University of Southern California, Los Angeles, CA.

   Biostatistics in the Modern Computing Era, Medical College of Wisconsin, Milwaukee, WI.

   O'Bayes Meeting, University of Texas at Austin, TX (discussant).

2018 Department of Statistics, University of California, Irvine, CA.

Department of Applied Mathematics & Statistics, University of California, Santa Cruz, CA.

IISA International Conference on Statistics, University of Florida, Gainesville, FL.

Joint Statistical Meetings, Vancouver, BC.

Department of Statistics, Ohio State University, Columbus, OH.

Department of Statistics, Florida State University, Tallahassee, FL.

2019 Division of Biostatistics, University of Miami's Miller School of Medicine, Miami, FL.

44th Spring Lectures Series, University of Arkansas, Fayetteville, AR.

6th Bayesian, Fiducial, and Frequentist Conference, SAMSI/Duke University, Raleigh, NC **(Keynote)**.

7th Workshop on Biostatistics and Bioinformatics, Georgia State University, Atlanta, GA.

ASA Statistics in Imaging Section, Annual Meeting, UC Irvine, CA.

12th International Biometric Society - Italian Region conference, Naples, Italy.

40th Annual Conference, International Society for Clinical Biostatistics, Leuven, Belgium.

Joint Statistical Meetings, Denver, CO.

Center for Computational and Integrative Biomedical Research, Baylor College of Medicine, Houston, TX.

Department of Statistics, Colorado State University, Fort Collins, CO.

Department of Statistics, University of Georgia, Athens, GA.

Symposium on "Bioinformatics: Research & Application", Texas A&M University, College Station, TX.

Department of Biostatistics, Yale University, New Haven, CT.

iBRIGHT conference on Integrative Biostatistics Research, MD Anderson Cancer Center, Houston, TX.

Department of Biostatistics & Data Science, UT Health Science Center, School of Public Health, Houston, TX.

Department of Statistical Science, Duke University, NC.

2020 Department of Statistics, Johns Hopkins University, Baltimore, MD.

Joint Statistical Meetings, Philadelphia, PA (virtual event).

Department of Biostatistics, McGill University, CANADA (virtual).

ASA/Statistics in Imaging Workshop on "Recent Advances in Statistical Analysis of Imaging Data" (virtual).

Cancelled due to the COVID-19 pandemic:

Conference on Statistical Learning & Data Science/Nonparametric Statistics, Irvine, CA.

Postponed due to the COVID-19 pandemic:

Workshop on Mathematical Challenges in Biological Big Data, University of California at Irvine, CA.

50th Scientific Meeting of the Italian Statistical Society, Pisa, Italy.

10th Bernoulli-IMS World Congress in Probability and Statistics, Seoul, South Korea.

2021 ISBA-BNP webinar series on Bayesian Nonparametrics (virtual).

The Oden Institute of Computational Engineering & Sciences, University of Texas at Austin, TX (virtual).

Department of Biostatistics, Brown University, School of Public Health, RI (virtual).

CANSSI-NISS Conference on Health Data Science (virtual).

ASA/Statistics in Imaging Conference, Annual Meeting (virtual).

Joint Statistical Meetings (virtual event).

Department of Statistics & Data Science, University of Texas at Austin, TX (virtual).

Department of Statistics, UC Irvine, CA **(Distinguished speaker)**

Florence Center for Data Science, University of Florence, Italy **(Data Science Christmas Lecture)**

14th International Conference of the ERCIM Working Group, London, UK (hybrid event)

TEACHING EXPERIENCE

Rice University:

STAT 425	*Introduction to Bayesian Statistics*
STAT 411/616	*Advanced Statistical Methods*
STAT 440/BIOE 440	*Statistics for Bioengineering*
STAT 422/622	*Bayesian Data Analysis*
STAT 522	*Advanced Bayesian Statistics*
STAT 549	*Functional Data and Wavelets*
STAT 699	*Topics in Advanced Bayesian Statistics*
STAT 496/696	*RTG Cross-training in Statistics & Computer Science*
STAT 600	*Graduate Seminar in Statistics*
Guest Lecturer	Special topic class on "Wiener's contributions", Fall 2013
Invited Lecturer	Mini-course on "wavelets", Fall 2009.

Texas A&M University:

STAT 689	*Special Topics: Wavelet-Based Statistical Modeling and Applications*
STAT 608	*Least Squares and Regression Analysis*
STAT 408	*Introduction to Linear Models*
STAT 212	*Principles of Statistics II*
STAT 651	*Statistics in Research I*

University of Kent at Canterbury:

Analysis of Variance (co-taught)

Statistics for Insurance (co-taught)

Short-Courses:

Wavelets and Statistical Applications	Continuing Education course, JSM 2007 (with Brani Vidakovic)
	Department of Economics, Central Bank of Venezuela, Caracas, 2008
Bayesian Methods for High-Dimensional Data	Ph.D. Program in Statistics, University of Florence, Italy
	(Summer programs, 2005-2008)
	Ph.D. Program in Statistics, University of Rome, Italy
	(Summer program, 2009)
	PASI: Cutting-edge Topics in Theoretical Statistics and
	Applications in Genetics and Bioinformatics.
	(CIMAT, Mexico, April 27-29, 2010)
	ABS13 - 2013 Applied Bayesian Statistics School.
	(Lake Como, Italy, June 17-21, 2013)
Bayesian Variable Selection:	
Historical Perspective & Recent Developments	Ph.D. Program in Statistics, University of Florence, Italy
	(December 15, 2021)

PROFESSIONAL ACTIVITIES

Lifetime Memberships:

American Statistical Association (ASA)

International Society for Bayesian Analysis (ISBA)

Sigma Xi, The Scientific Research Honor Society (full member elected)

Service to Professional Societies:

ISBA	Zellner Medal Committee (member, 2022)
	President-Elect (2017), President (2018), Past-President (2019)
	Task Force for SafeISBA (member, 2018)
	Committee on Fellows (member, 2017-2020)
	Editorial Search Committee (Chair, 2015)
	Mitchell Prize Committee (member, 2005-2007 & 2012-2013)
	Lindley Prize Committee (Chair, 2012)
	Prize Committee (Founding member, 2007-2010; Elected Chair, 2008-2009)
	Savage Fund Trust Committee (member, 2006-2007)
	Associate Editor, Annotated Bibliography section, ISBA Bulletin (2005-2007)
	Savage Awards Committee (member, 2005-2006)
	Elected Member of the Board of Directors (2003-2005)
ASA	Section on Bayesian Statistical Science
	(Chair-Elect, 2019; Chair, 2020; Past-Chair, 2021)
	Section on Bayesian Statistical Science
	(Program Chair-Elect, 2011; Program Chair, 2012)
	JASA Editor Search Committee member (A&CS, 2015; T&M, 2016)
	Committee on Federally Funded Research (member, 2013-2015)
	Noether Awards Committee member (2008-2012)
	Section on Nonparametric Statistics (Treasurer/Secretary, 2005-2007)
	Chapter Representative of the Southeast Texas Chapter (2002-2005)
IMS	Committee on Fellows (member, 2017-2020)
	Travel Awards Committee (member, 2004-2008; Chair, 2007-2008)
	New Researchers Meeting (Committee member, 2000-2003)

National Service:

NSF	Team Leader, NSF Workshop: Statistics at a Crossroads (2018)
	- [contributed to executive summary "Statistics at a Crossroad: Who Is for the Challenge?"]
	Panelist:
	- Faculty Early Career Development (CAREER)
	- Data Mining & Bioinformatics
	- Statistics and Probability (DMS)
	- Postdoctoral Research Fellowships (MSPRF)
NIH	Study Section and ad-hoc Reviewer:
	- NIBIB, BRAIN Initiative, Special Emphasis Panel (01/2019)
	- BDMA (Full member, 2012-2018; Ad-hoc panelist: 03/2005, 10/2005, 10/2010, 06/2011)
	- ARRA Challenge Stage I reviewer (06/2009)

- NLM Special Emphasis Panel on Informatics Training Grants (05/2006)
- MBRS Minority Programs (03/2006)
- Special Emphasis Panel on Software Development (06/2005)

NSA   Outside Reviewer for the AMS (American Mathematical Society) Panel (01/2007)

Organization of Conferences/Workshops/Panels:

Scientific/Program Committee member:

IMS International Conference on Statistics and Data Science (ICSDS), Florence, Italy (2022)

Recent Advances in Statistical Analysis of Imaging Data, ASA/Statistics and Imaging workshop (2020, virtual)

Challenges in Functional Connectivity Modeling and Analysis, SAMSI Workshop, Raleigh, NC (2016)

Abel Symposium on Statistical Analysis of High Dimensional Data, Lofoten, Norway (2014)

7th Annual Conference on Bayesian Biostatistics & Bioinformatics, Houston, TX (2014)

IEEE World Congress on Computational Intelligence, Hong Kong (2008)

CAMDA07, Valencia, Spain (2007)

10th ACM-SIGKDD Int Conf on Knowledge Discov. & Data Min., Seattle, WA (2004)

Invited Session Organizer:

Bayesian Analysis invited discussion paper, ISBA World Meetings (2014; 2016)

Highlights from Bayesian Analysis, Joint statistical Meetings (2014; 2015; 2016)

Bayesian Models for Neuroimaging Data, Joint statistical Meetings (2015)

Data Integration in the Omics Sciences, International Biometric Conference, Florence, Italy (2014)

Symposium on Biostatistical Methods for the Analysis of Genomic Data, 8th Conference of Italian Researchers in the World, Houston, TX (2012)

Bayesian Bioinformatics, Joint Statistical Meetings (2007)

Integrating Multiple Sources of Genomic Data, Joint Statistical Meetings (2005)

Bayesian Methods in Genomics, ENAR Spring Regional Meeting, Pittsburgh, PA (2004)

Statistical Modeling with Wavelets, ISBA World Meeting, Viña del Mar, Chile (2004)

Panels and Roundtables:

Panelist, *The role of postdocs in Statistics*, ASA Women in Stats & Data Science conference (2020, virtual)

Panelist, ENAR Junior Biostatisticians in Health Research Workshop (2017; 2019).

Organizer and Chair, Panel on *Finding a Research Topic*, ASA Women in Stats & Data Science conference, Charlotte, NC (2016)

Panelist, IMS New Researchers Meeting (2012)

Chair, Roundtable Luncheon on *Bayesian Variable Selection*, JSM, San Francisco, CA (2003).

Rice University Service

University:

University Senate elected member (2021-2022)

Dean's Review Committee, School of Humanities (2021-2022)

University Committee for Research member (2019-2021)

Data Science Curriculum Committee member (2016-2019)

     - [established a Data Science Minor at Rice University]

Neuroscience/Neuro-X Program, Steering Committee member (2016-2018)

     - [established a Neuroscience Major at Rice University]

Cognitive Sciences Program, Steering Committee member (2016-2018)

SACSCOS Accreditation, lead role for statistics (2013-2016)

- [for degree-granting higher education institutions in the Southern states]

Search Committee member, Ken Kennedy Institute Faculty Director (2018-2019)

Search Committee member, Associate Vice Provost for Institutional Research (2015-2016)

Search Committee member, Dean of Engineering (2010-2011)

Faculty mentor, Keck Center for Interdisciplinary Bioscience Training of the Gulf Coast Consortia (2009-2019)

Graduate Council Committee member (2011-2013)

Collaborative Advances in Biomedical Computing Seed Grants, reviewer (2011)

Century Scholars Program, faculty mentor to undergraduate students (2008-2009)

NSF ADVANCE Program, faculty mentor to junior faculty (2007-2010)

Collegiate:

$(T + R)^2$ Award Selection Committee member (2015-2016)

Promotion and Tenure Committee member (2007-2009)

Departmental:

Department Chair (2014-2019)

Director, Interinstitutional Graduate Program in Biostatistics (2007-2017)

Ph.D. Graduate Advisor (2019-2020)

Graduate Curriculum Committee (member 2014-2015, 2018-2019; chair 2017-2018, 2020-2021)

Graduate Student Recruitment/Admissions Committee member (2007-2011; 2020-2021)

Faculty Search Committee member (2008-2009, 2012-2013)

Awards & Special Lectures (chair 2019-2020)

Southern Regional Council of Statistics (SRCOS) representative (2015)

Department Advancement Committee member (Spring 2014)

NSF VIGRE PFUG coordinator:

- "Bayesian Integrative Bioinformatics" (Spring 2012)
- "Imaging" (2007-2008)

External member, Methods Search Committee, Department of Political Science (2008-2009)

Texas A&M University Service

University:

NIEHS Center for Environmental and Rural Health, Biostatistics & Bioinformatics Facility Core:

- Leading role in the creation of the Core and first Director (2005-2007)
- Chair of Search Committee (2005)

Bioinformatics Facility Writing Group member (2005)

Collegiate:

Department Head Search Advisory Committee member (2004-2005)

College of Science Diversity Committee member (2003-2005)

Departmental:

Promotion and Tenure Committee member (2006-2007)

Methods Qualifying Exam Committee member (2005-2007)

Parametric Inference Cumulative Exam Committee member (2003-2005)

Faculty Recruiting Committee member (2002-2004, 2005-2006)

Organizer of the Hartley Memorial Lectures (2001, 2005)

Colloquium Chair (2000-2001)

Reviewer (1996-): *Annals of Applied Statistics, Annals of the Institute of Statistical Mathematics, Annals of Oper-*

ations Research, Applied Statistics, Bayesian Analysis, Bioinformatics, Biometrics, Biostatistics, Biometrika, BMC Bioinformatics, BMC Cancer, Briefings in Bioinformatics, Communications in Statistics, Computational Statistics, Computational Statistics and Data Analysis, IEEE Transactions on Signal Processing, IEEE Transactions on Image Processing, Journal of the American Statistical Association, Journal of Business & Economic Statistics, Journal of Chemical Information and Computer Sciences, Journal of Computational and Graphical Statistics, Journal of Econometrics, Journal of Financial Econometrics, Journal of Intelligent and Fuzzy Systems, Journal of the Italian Statistical Society, Journal of Nonparametric Statistics, Journal of Probabilistic Engineering Mechanics, Journal of the Royal Statistical Society, Series B, Journal of Statistical Computation and Simulation, Journal of Statistical Planning & Inference, Journal of VLSI Signal Processing, Nature Communications, NeuroImage, Nucleic Acids Research, Sankhya, Scientific Reports, Signal Processing, Springer Verlag Book Proposals, Statistics and Probability Letters, Statistics in Medicine, Statistical Methods and Applications, Statistical Science, Technometrics.