Donald Estep
Academic Biography

Currently, I am the Director of the Canadian Statistical Sciences Institute (CANSSI) and a Canada Research Chair in Computational Probability and Uncertainty Quantification at Simon Fraser University.

Academic history

I received a B.A. in from Columbia University in 1981 and M.S. and Ph.D. degrees in applied mathematics from the University of Michigan in 1987. My Ph.D. thesis was titled *L^∞ Bounds for L^2 Stable Operators in One Dimension* and my supervisor was Professor Jeffrey Rauch. From 1987-2002, I was on the faculty in the School of Mathematics at the Georgia Institute of Technology. During 1991-1993, I was a visiting assistant professor in Applied Mathematics at the California Institute of Technology. I joined the Department of Mathematics at Colorado State University in 2000. I joined the Department of Statistics in 2006, eventually becoming full time in Statistics in 2014. During 2013-14, I was a Jubilee Professor in the Department of Mathematical Sciences at Chalmers University of Technology in Sweden. I became a University Distinguished Professor at Colorado State University in 2017. I moved to the Department of Statistics and Actuarial Science at Simon Fraser University in 2019 and became the Director of the Canadian Statistical Sciences Institute and Canada Research Chair in Computational Probability and Uncertainty Quantification (Tier 1).

Research activities

Currently, I work in Bayesian calibration of computer models, foundations of Bayesian statistics, stochastic inverse problems, uncertainty quantification for computer models, algorithms for efficient computation, and stochastic modeling of multiscale systems. My research scope embraces theoretical analysis, development and implementation of algorithms, and application to scientific and engineering problems. I have strong interdisciplinary collaborations with engineers and scientists at a number of research laboratories, companies and universities. I have presented over fifty invited talks at workshops and conferences and over 120 invited seminars and colloquia. My work has over 6100 citations (Google Scholar). I have advised 20 Ph.D. students with several in progress and 22 postdocs. My research has been supported continuously by a wide variety of agencies in the United States and Canada since 1989. From 2001, I have been PI and Co-PI on 55 external awards with budgets totaling over $50 million dollars (USD). During 1993-1995, I was a National Science Foundation International Research Fellow. I was awarded the Computational and Mathematical Methods in Sciences and Engineering Prize for my research in 2005. I was appointed University Interdisciplinary Research Scholar at Colorado State University in 2009. I was awarded a Jubilee Professorship from Chalmers University of Technology in 2013. I was selected as a Fellow of the Society for Industrial and Applied Mathematics in 2014. I was appointed University Distinguished Professor at Colorado State University in 2017. I was awarded a Canada Research Chair (Tier 1) at Simon Fraser University in 2020.

I am a member of the American Statistical Association, Institute of Mathematical Statistics, International Statistics Institutes, International Statistical Engineering Association, Society for Industrial and Applied Mathematics, and the Statistical Society of Canada.

Educational activities

I am co-author of a graduate textbook called *A Ramble Through Probability: How I Learned to Stop Worrying and Love Measure Theory* (Basu, Butler, Estep, Panda) published by SIAM in Spring 2024. I

am co-author of a graduate text entitled *Computational Differential Equations* (Eriksson, Estep, Hansbo, Johnson; Cambridge, 1996) and a research monograph entitled *Estimating the Error of Numerical Solutions of Systems of Nonlinear Reaction-Diffusion Equations* (Estep, Larson, Williams; AMS Memoir, 2000). I also wrote an undergraduate text in analysis called *Practical Analysis in One Variable* (Estep; Springer-Verlag, 2002, German edition 2004) and co-authored a three volume undergraduate series on engineering mathematics called *Applied Mathematics: Body and Soul* (Eriksson, Estep, Johnson; Springer-Verlag, 2003, German edition 2004). I was co-editor of the *Proceedings of the Georgia Tech Conference on Dynamical Numerical* (Dieci, Estep, van deVelde; Numerical Algorithms, 1997) and the *Collected Lectures on the Preservation of Stability under Discretization*, (Estep, Tavener; SIAM, 2002). I was co-developer of an innovative Integrative Graduate Education and Research Traineeship (IGERT) graduate training program in quantitative ecology called *PRIMES* and one of the founders of an undergraduate mathematics-biology interdisciplinary training and research program called *FeSCUE*. At Georgia Tech, I was appointed the first Director of Teaching Effectiveness for the School of Mathematics. In 2005, I was awarded the distinction of Outstanding Professor in Graduate Instruction by the graduate students in the Department of Mathematics at Colorado State University. In 2007, I was awarded the Colorado State University College of Natural Sciences Excellence in Teaching Award for Graduate Education and Mentoring.

Professional service

Currently, I am co-Editor in Chief of the ASA journal Data Science in Science and the Editor in Chief of the SIAM Book Series on Computational Science and Engineering, as well as serving on a number of editorial boards including SIAM Review. From 2012-2017, I served as founding Co-Editor in Chief (with J. Berger (Duke) and M. Gunzburger (FSU)) of the SIAM/ASA Journal on Uncertainty Quantification. I served on the National Science Foundation Office of Cyberinfrastructure Grand Challenges Communities Task Force, 2009-2010 and was co-author of report delivered to the National Science Foundation, the Applied Mathematics Strategic Plan Recommendation Panel for the Office of Advanced Scientific Computing, Department of Energy in 2008 and co-authored the report: Applied Mathematics at the U.S. Department of Energy: Past, Present, and Future, and have taken part in other advisory activities for the Department of Energy. I served on the Advisory Board for the Center for Advanced Modeling and Simulation, Idaho National Laboratory 2009-2012, and served on the Governing Board of the NSF-funded Statistical and Applied Mathematical Sciences Institute (SAMSI) as the SIAM representative 2009-2014. I served on the Computer and Information Sciences External Review Board, Sandia National Laboratories, 2012-2015. I served as Panel Chair, Beyond Interpretive Simulations, Fusion Energy Sciences and Advanced Scientific Computing Research Workshop on Integrated Simulations for Magnetic Fusion Sciences and was Co-Author of Workshop Report delivered to the Department of Energy Office of Sciences, 2015. I have co-organized 21 conferences, minisymposia, and workshops, including a number focused on training graduate students in Interdisciplinary Computational Science and Engineering. I was the co-Chair of the first SIAM - ASA - USACM Conference on Uncertainty Quantification. I was Program Leader for the SAMSI Program on Environmental Sensor Networks in 2008-2009 and was a Program Leader for the SAMSI Program on Uncertainty Quantification in 2011-2012. I was co-organizer and first Chair of the SIAM Activity Group on Uncertainty Quantification. I served on the SIAM Education Committee 2006-11 and the SIAM Book Committee 2013-2019. I served on the American Mathematical Society Simmons Travel Grants Committee, 2011-2013. I have served on the SIAM Fellows Selection Committee from 2024-2026 (Chair 2025-2026). I have served on many review panels for government grants in the United States and Germany.

University service

I have served on numerous committees at the department level and central administration level at Colorado State University and Simon Fraser University. This includes chairing department hiring committees and evaluation committees for searches for senior administration personnel, serving on department review committees, award selection committees, and university policy committees. At Colorado State University, I chaired the University Committee on Faculty Governance for many years. I served as the Chair of the Department of Statistics at Colorado State University from 2017-2019. I served as the Associate Dean for Research for the Faculty of Sciences at Simon Fraser University from 2023-2024. Currently, I am serving a second term as the Director of the Canadian Statistical Sciences Institute.