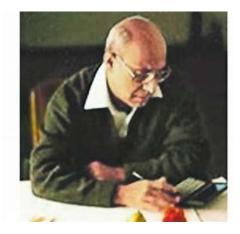# New Frontiers in Reliability and Risk Analysis:
A Tribute to Nozer D Singpurwalla

October 13-14, 2023

The George Washington University
Lehman Auditorium B1
Science and Engineering Hall
800 22nd Street, NW
Washington, DC 20052

Sponsored By:

Friday, October 13, 2023

8:00 am-9:00 am   **Breakfast and Registration, Atrium**

9:00 am-9:30 am   **Welcoming Remarks, B1220**

- *Introduction to the Symposium, Thomas Mazzuchi, George Washington University*
- *Reflections on Nozer, Donald Lehman, George Washington University*

9:30 am-10:30 am   **Plenary Session 1, B1220**
Chair: Refik Soyer, George Washington University

- *James Berger, Duke University, "Encounters with Imprecise Probability."*

10:30-10:50 am   **Coffee Break, Atrium**

10:50 am-12:30 pm   **Invited Session 1, B1220**
Chair: Simon Wilson, Trinity College, Dublin

- *David Banks, Duke University, "Adversarial Risk Analysis."*
- *Regina Liu, Rutgers University, "Prediction with Confidence – General Framework for Predictive Inference."*
- *Cyrus Mehta, Cytel Inc., "Adaptive Multi-Arm Multi-Stage Designs: A Comparison of Methods."*

12:30 pm-1:30 pm   **Lunch, Atrium** *(Box lunch will be available)*

1:30 pm-3:10 pm   **Special Session 1A, B1220**
Chair: Tapan Nayak, George Washington University

- *Amos Golan, American University, "What Information Theory Brings to Decision Theory and Inference with Complex Data."*
- *Patrick Hall, George Washington University, "An Overview of the NIST AI Risk Management Framework."*
- *Atilla Ay, James Madison University, "Bayesian Modeling of Power Outages at Multiple Locations under a Common Environment."*
- *Mengmeng Zhu, North Carolina State University, "Prognostics of Lithium-ion Batteries by Combining Discharge Voltage and Capacity Fade Information."*

1:30 pm-3:10 pm   **Special Session 1B, B1270**
Chair: Xiaoke Zhang, George Washington University

- *Joseph Feldman, Duke University, "Bayesian Quantile Regression with Subset Selection: A Posterior Summarization Perspective."*
- *Olivia Atutey, University of South Alabama, "Robust Estimation and Variable Selection for Linear Mixed Models."*
- *Zhengling Qi, George Washington University, "PASTA: Pessimistic Assortment Optimization."*
- *Yuan Guo, George Washington University, "Resale-as-a-Service: The Impact of Second-Hand Platforms on Fashion Goods Retailer."*

3:10 pm-3:30 pm   **Coffee Break, Atrium**

3:30 pm-4:30 pm   **Plenary Session 2, B1220**
                            Chair: Subrata Kundu, George Washington University

- *Jayaram Sethuraman, Florida State Universiy, "Start-Over-After-Preempts (SOAP) Repair."*

4:30 pm-5:30 pm   **Poster Session, Atrium**

- *Elizabeth Bersson, Duke University, "Bayesian Covariance Estimation for Multi-Group Matrix-Variate Data."*
- *Dila Bhandari, Tribhuvan University, "Forecasting Risk through Artificial Intelligence Based on Machine Learning Algorithms."*
- *Sayan Chakrabarty, University of Illinois-Urbana Champaign, "Subsampling Based Model Selection for Network Data."*
- *Sahil Chindal, Virginia Commonwealth University, "Predicting Dengue Incidence in Central Argentina Using Google Trends Data."*
- *Lirit Fuksman, University of Texas-Dallas, "Nonparametric Hazard Rate Estimation for Missing Right Censored Lifetimes."*
- *Korel Gundem, George Washington University, "Reinforcement Learning for Pricing and Inventory Control under Censored Demand."*
- *Josephine Hughes, Mercer University, "Predicting Conflict Using Machine Learning."*
- *Jaehoan Kim, Duke University, "Adaptive Finite Element Type Decomposition of Gaussian Random Fields."*
- *Zhanhang Li, Rutgers University, "A Novel Two-Stage Degradation Model Incorporating Time-to-Event Distributions and Stochastic Processes."*
- *Jilei Lin, George Washington University, "Estimation for Quantile Spatially Varying Coefficient Models over Complex Domains."*
- *Samhita Pal, North Carolina State University, "Bayesian High-dimensional Modeling with Sparse Projection-posterior."*
- *Tingfang Wang, University of Texas, Dallas, "Absolute Risk Prediction for Cannabis Use Disorder."*
- *Yong Wang, George Washington University, "High Dimensional Classification and Clustering with Feature Selection."*
- *Zeyu Wang, George Washington University, "Maximal Coverage Problem for a Naval Task Group with Random Threat."*
- *Gaoyu Xie, George Washington University, "Prototype in New Product Development"*

5:30 pm-6:30 pm   **Break**

6:30 pm-9:30 pm   **Dinner, Duques Hall 6th Floor Lobby**
                            GW School of Business
                            2201 G Street, NW (Corner of 22nd and G Streets)

                            Chair: Kimberly Sellers, North Carolina State University
                            Speaker: Barry Nussbaum, Chief Statistician, US Environmental Protection Agency (Retired)

Saturday, October 14, 2023

8:00 am-9:00 am   **Breakfast, Atrium**

9:00 am-10:40 am   **Invited Session 2, B1220**
                           Chair: Alyson Wilson, North Carolina State University

- *Mike West, Duke University, "Using Expert Opinion and Other Forms of Predictive Information in Personal Inferences and Decisions."*
- *Fabrizio Ruggeri, CNR-IMATI, "An Adversarial Risk Analysis Framework for the Software Release Problem."*
- *Mark Brown, Columbia University, "Error Bounds in Applied Probability Models: Exponential and Geometric Approximations."*

10:40 am-11:00 am   **Coffee Break, Atrium**

11:00 am-12:40 pm   **Special Session 2A, B1220**
                            Chair: Thomas Mazzuchi, George Washington University

- *David Coit, Rutgers University, "Reliability Model for Systems with Clusters of Degrading Components Based on a Superposition of Gamma Processes."*
- *Hosam Mahmoud, George Washington University, "Bernoulli Convolution of the Depth of Nodes in Recursive trees with Generalized Affinities."*
- *Sanjeev Sabnis, Indian Institute of Technology-Bombay, "Bounds for Joint Probabilities of Multi-State Systems Using Preservation of Log-Concavity."*
- *Srinivasan Balaji, George Washington University, "Waiting Time Distributions of Exchangeable Events with Application to Polya Process."*

11:00 am-12:40 pm   **Special Session 2B, B1270**
                            Chair: Refik Soyer, George Washington University

- *Huixia Judy Wang, George Washington University, "Probabilistic Prediction for Spatial Processes through Deep Learning."*
- *Shramista Guha, Texas A&M University, "A Bayesian Approach to Network Classification."*
- *Eugene Hahn, Salisbury University, "Imputing Missing Values in [0,1]Data using Endpoint-Heterogenous Beta Regression Modeling."*
- *Indranil Ghosh, University of North Carolina-Wilmington, "Bayesian Inference for Two Nonstandard Flexible Families of Bivariate Kumaraswamy Models: Theory and Applications."*

12:40 pm-1:45 pm   **Lunch, Atrium** *(Box lunch will be available)*

1:45 pm-3:25 pm   **Invited Session 3, B1220**
                           Chair: Joshua Landon, George Washington University

- *Joseph Kadane, Carnegie Mellon University, "How Can Subjective Bayesians Avoid Solipsism?"*
- *Ehsan Soofi, University of Wisconsin-Milwaukee, "The Information and Inferences under Different Parameterization of a Likelihood Model."*
- *Rajeshwari Sundaram, National Institutes of Health, "Joint Modeling of Geometric Features of Longitudinal Process and Discrete Survival Time Measured on Nested Timescales with Dynamic Risk Prediction: An Application to Fecundity Studies".*

3:30 pm   **Closing Remarks, B1220**
                           Kimberly Sellers, North Carolina State University

**Special issue of ASMBI on New Frontiers in Reliability and Risk Analysis:
A Tribute to Nozer D. Singpurwalla**

A special issue of **Applied Stochastic Models in Business and Industry** (ASMBI) will be prepared on New Frontiers in Reliability and Risk Analysis. The special issue will consider papers presented at the Symposium on the New Frontiers in Reliability and Risk Analysis, but will also be open to the public for submission of papers relevant to the theme. All submissions will go through the standard selective review process of ASMBI. More details will be provided after the symposium.