International Conference on Advances in Interdisciplinary Statistics and Combinatorics

AISC 2026

Friday 30 October through Sunday 1 November 2026

The LITE Center
The University of Louisiana at Lafayette
Lafayette, Louisiana, USA

Welcoming Messages

Message from Ramesh Kolluru

Dear colleagues and friends,

On behalf of the University of Louisiana at Lafayette, welcome to the 2026 International Conference on Advances in Interdisciplinary Statistics and Combinatorics. We are pleased to host AISC in Louisiana for the first time and welcome more than 125 researchers and scholars from around the world.

As a Carnegie R1 university with a longstanding tradition of excellence in mathematics, statistics and computing, UL Lafayette is a natural home for a conference like AISC. Partnership is central to our research mission, and according to National Science Foundation data, UL Lafayette is No. 4 in the nation for research funded through collaborations with business and industry. We value opportunities like this conference to bring academic and industry researchers together to exchange ideas, advance discovery and explore new opportunities for collaboration.

I want to thank our Office of Research & Innovation, the UL Lafayette Department of Mathematics and the Louisiana Chapter of the American Statistical Association for organizing this year's conference. Special thanks go to organizing committee chair Dr. Kumer Das and Dr. Calvin Berry for their leadership and support. I also extend my appreciation to Dr. Sat Gupta and his colleagues at the University of North Carolina at Greensboro for their longstanding leadership of AISC and partnership in bringing the conference to Louisiana.

I hope you enjoy your time in Lafayette, both at the conference and beyond. Our region is known for its food, music and hospitality, and I encourage you to experience all three while you're here.

Best wishes for a productive and enjoyable conference.

Geaux Cajuns!

Ramesh Kolluru, Ph.D.
President
University of Louisiana at Lafayette

Message from Kumer Das

Dear AISC Participants,

Welcome to AISC 2026! On behalf of the Organizing Committee, I extend our warmest greetings and sincere thanks to all participants for joining us this year. We are delighted to welcome scholars, researchers, and students representing 20 U.S. states and four countries, reflecting the conference's broad reach and commitment to advancing interdisciplinary research and collaboration.

For this year's International Conference on Advances in Interdisciplinary Statistics and Combinatorics, we continue a tradition of excellence by bringing together a distinguished cohort of plenary speakers: Dr. Katherine Ensor of Rice University, Dr. John Stufken of George Mason University, Dr. Karen Kafadar of the University of Virginia, Dr. Hiya Banerjee of Eli Lilly and Company, Dr. S. Ejaz Ahmed of Brock University, Canada, and Mr. Ari Zitin of SAS Institute. These speakers, drawn from both academia and industry, will share perspectives ranging from experimental design to agentic AI. Alongside them, invited sessions and many contributed talks cover survival analysis, sampling, Bayesian and fiducial inference, machine learning, and more. Authors of presented papers are formally invited to submit their work for consideration in a forthcoming special issue of the Journal of Statistical Theory and Practice.

Thanks to the many people who make this conference possible: my fellow committee members, Drs. Calvin Berry, Kalimuthu Krishnamoorthy, Nabendu Pal, Yongli Sang, Mo Li, Sat Gupta, Asim Dey, and Mithun Acharjee; our International Advisory Committee and session organizers; and the staff and student volunteers who will be helping you throughout the weekend.

We hope that AISC 2026 serves as a catalyst for profound scholarly exchange, innovative ideas, and enduring professional collaborations, and we look forward to welcoming you back to Lafayette in 2028.

With warm regards,

Kumer Das, Ph.D.
Professor and Interim Vice President for Research and Innovation
Chair, AISC 2026 Organizing Committee
University of Louisiana at Lafayette

Message from Sat Gupta

As the founder of the AISC conference series in 2007 and its Lead Organizer at the University of North Carolina Greensboro until 2025, I would like to welcome you all to AISC 2026. With my retirement last July, I was not sure about the future of the AISC conference series. I am so happy that Dr. Kumer Pial Das and his colleagues at the University of Louisiana at Lafayette stepped up to carry forward the AISC baton.

I am confident that you will embrace the conference as warmly at the University of Louisiana at Lafayette as you did at the University of North Carolina Greensboro. Knowing how much energy Dr. Das can bring to the conference, its future looks very bright. Under his leadership, I am sure the conference will continue to promote interdisciplinary statistics while introducing emerging new fields. I am happy that the conference continues to provide young researchers with an opportunity to interact with senior researchers.

With the conference program featuring many world leaders in statistical research including past ASA Presidents Karen Kafadar and Kathy Ensor, you are all in for a real treat! I am sure you all will have a wonderful time at the conference.

Sat Gupta, Ph.D.
Professor Emeritus
University of North Carolina Greensboro

Plenary Speakers

Katherine Bennett Ensor
Professor, Rice University

Frontiers of Statistics in Science and Engineering: 2035 and Beyond National Academies of Science, Engineering, and Medicine Consensus Study

The National Academies of Sciences, Engineering, and Medicine committee convened to examine the discipline of statistics, its accomplishments, and its future directions, leading to the release of Frontiers of Statistics in Science and Engineering: 2035 and Beyond in February 2026. The project was sponsored by the National Institutes of Health (NIH), the National Science Foundation (NSF), and the National Security Agency (NSA), which gave the committee a three-part charge: assess where the statistical sciences stand today, describe where they need to go, and recommend specifically how the nation should invest to get there. The report's first sentence sums up the committee's case for the field: "Statistics is the science through which data become wisdom." I was honored to serve as chair of this rock star committee, working alongside vice-chair Lance Waller at Emory University. I will share findings and recommendations as well as a bit about the process and the role NASEM plays in the technology infrastructure of the country.

About the Speaker

Dr. Katherine Bennett Ensor is the Noah G. Harding Professor of Statistics at Rice University where she serves as director of the Center for Computational Finance and Economic Systems. Ensor, a leading national voice in artificial intelligence and data science, develops statistical methods for practical problems with specific interests in finance, energy, environment, health, community and risk analytics. Ensor served as the 117th president of the American Statistical Association and is a fellow of ASA, AAAS, and an elected member of ISI. She has been recognized for her leadership, scholarship, and mentoring and, in 2021, was inducted to the Texas A&M College of Science Academy of Distinguished Former Students. In 2024 she was honored with the ASA Founder's Award, the highest honor given by ASA to its members. She holds a Ph.D. in Statistics from Texas A&M University, and an M.S. and B.S.E. in Mathematics from Arkansas State University.

Karen Kafadar
Commonwealth Professor, University of Virginia

Real-world Impacts from Statistical Research in Industry, Government, and Academe

Advances in statistics arise often, though not exclusively, through academic research. The problems that motivate these advances can come from researchers in other university departments as well as in industry, government, and public health. In this talk, I will briefly describe research that arose from projects at Hewlett-Packard, National Cancer Institute, and UVA's Dept of Neurophysiology. These examples demonstrate that research in statistics can arise unexpectedly in many scientific disciplines and require theoretical results across the spectrum of statistics to solve real-world problems.

About the Speaker

Professor Kafadar is a leading expert in exploratory data analysis and robust methods. Her research focuses on uncertainty characterization in physical and biological sciences, earning awards from the CDC, ASA, and American Society for Quality. She served as the 114th president of the American Statistical Association and was elected an ASA Founder for her outstanding leadership. She also served as president of the International Association for Statistical Computing.

S. Ejaz Ahmed
Professor, Brock University, Ontario, Canada

Divide, Shrink, and Conquer: Estimation Strategies for Large-Scale Data

Modern datasets are often too large, high-dimensional, and distributed to be conveniently stored and analyzed in a single location. This creates both computational and storage challenges and motivates statistical methods that can extract and combine information without requiring the full dataset to be centralized. In this talk, I present a divide-and-conquer approach to shrinkage estimation for sparse linear regression. The basic idea is simple: divide a large dataset into smaller subsets, perform estimation locally, and then combine the resulting information through a single round of communication. We develop pretest- and Stein-type shrinkage estimators that exploit sparsity while reducing estimation variability and substantially limiting the amount of information that needs to be stored or transferred. The theoretical properties of the proposed one-shot estimators are established, including consistency and asymptotic normality. Their finite-sample performance is investigated through extensive simulation studies and illustrated using the Million Song Year Prediction Dataset, a large-scale dataset containing audio features from one million contemporary songs. The application considers the challenging task of predicting the release year of a song from its acoustic characteristics, providing a natural setting for evaluating distributed estimation in a high-dimensional data environment. The talk demonstrates how divide-and-conquer and shrinkage can work together to address the statistical challenges created by modern large-scale data: divide the data, shrink intelligently, and conquer the estimation problem.

About the Speaker

Dr. Ejaz Ahmed is professor of Mathematics and Statistics in the Faculty of Mathematics and Science. Before joining Brock, he was a professor and head of Mathematics at the University of Windsor and University of Regina. Prior to that, he had a faculty position at the University of Western Ontario. Further, he is a Senior Advisor to Sigma Analytics (Data Mining & Research), Regina.

He is an internationally known scholar and an established researcher. Dr. Ahmed's research interests concentrate on big data, predictive modeling, data science, and statistical machine learning with applications in many walks of life. His research has been supported by a variety of grants from the Natural Sciences and Engineering Research Council (NSERC) of Canada since 1987, the Canadian Institute of Health Research, Ontario Centre for Excellence (OCE) and other sources throughout his academic career. Importantly, his NSERC grant was renewed in 2017 for another five years, with "Outstanding (O)" in all three categories. According to that year's competition statistics, only two applications overall from ALL small universities received a ranking of "OOO" or higher.

Ari Zitin
SAS Institute, North Carolina

From Insight to Impact: Agentic AI and the Decision Architecture of Trustworthy Action

As AI systems move from generating insights to executing decisions, the central challenge facing organizations is no longer model accuracy alone, but decision quality at scale. When models act, inference becomes operational. This talk examines how the rise of agentic AI changes the role of statistics, shifting emphasis from insight generation to the design of decision systems that are trustworthy, explainable, and accountable.

Building on recent domain-specific advances in areas such as clinical research and public health, the talk introduces decisioning as the missing architecture that connects statistical rigor to real-world impact. Decisioning defines how model outputs are translated into actions through evidence, constraints, human oversight, and continuous validation. Using illustrative examples across multiple industries, the keynote highlights where statisticians play a critical role as decision architects, shaping uncertainty thresholds, escalation logic, auditability, and long-term monitoring.

The session reframes agentic AI as a decision-system problem rather than a modeling problem, and argues that the future impact of AI depends on how effectively statistical principles are embedded into the systems that act on our behalf.

About the Speaker

Ari Zitin holds bachelor's degrees in both physics and mathematics from UNC-Chapel Hill. His research focused on collecting and analyzing low-energy physics data to better understand the neutrino. He taught introductory and advanced physics and scientific programming courses at UC-Berkeley while working on a master's in physics with a focus on nonlinear dynamics. While at SAS, he has worked to develop courses on agentic AI, quantum computing, and optimization.

John Stufken
Professor, George Mason University

Data Subsampling Strategies

Subsampling from large datasets has attracted growing attention over the past decade in both the computer science and statistics literature, leading to the development of a wide range of methods. After a brief high-level overview, this presentation will examine two representative approaches in greater detail: one model-based and one model-free. The model-based method is designed to achieve efficient estimation of model parameters, whereas the model-free approach emphasizes accurate prediction of future observations.

About the Speaker

John Stufken is an expert in experimental design and data science, known for his work on orthogonal arrays, crossover designs, and optimal design methods. He has authored influential books and held leadership roles at major universities and the NSF. Stufken is an Elected Fellow of the American Statistical Association and the Institute of Mathematical Statistics.

Hiya Banerjee
Senior Director, Eli Lilly and Company

The Future of Drug Development: AI as a Strategic Enabler

In large outcomes trials, independent, blinded adjudication of endpoints is an important and expected methodology to ensure standardization of endpoint assessment, particularly for complex or subjective events where the subjectivity often relates to the assessment of the cause of the event (e.g., hospitalization due to heart failure, CV death, MI, stroke). Adjudication is performed by a Clinical Event Committee (CEC) consisting of impartial, clinical experts who review trial events in a blinded fashion (i.e. without knowledge of the treatment allocation) using prespecified clinical definitions which ensure cohesive outcome interpretation across varying local practices and investigator opinions. While critical to study conduct and interpretation, CEC processes rely on manual review which is time consuming, prone to subjectivity, and resource intensive, often accounting for a lot of money.

This presentation explores the use of natural language processing (NLP) and artificial intelligence to support and potentially automate cardiovascular endpoint adjudication. We will discuss how AI-enabled adjudication can improve efficiency across clinical trials, observational research, and quality improvement efforts, while also addressing current limitations of automated systems. A novel multi-agent AI framework will be introduced, designed to mirror the structured, stepwise reasoning of human adjudicators by breaking the adjudication process into specialized intermediate tasks.

About the Speaker

Dr. Hiya Banerjee is a Senior Director at Eli Lilly and Company, where she focuses on external engagement, statistical innovation, and implementation in clinical drug development. She has extensive experience in cardiometabolic diseases and oncology, with expertise in survival analysis, causal inference, missing data methodologies, and real-world evidence. Dr. Banerjee is actively involved in advancing statistical collaborations across academia, industry, and regulatory agencies. She serves in leadership roles within the American Statistical Association Biopharmaceutical Section and the International Indian Statistical Association, and is passionate about fostering innovation and mentoring the next generation of statisticians and data scientists.

Friday Afternoon

Friday: 11:30 - 12:00 Registration and Check-in (LITE Lobby)

Friday: 12:00 - 1:00 Lunch (LITE Lobby)

Friday: 1:00 - 2:40 Invited Sessions 1 - 3

Invited Session 1 (LITE Auditorium)
Bayesian and Fiducial Inference with Applications

Organizer: Kalimuthu Krishnamoorthy, University of Louisiana at Lafayette

1. **A Socio-Demographic Latent Space Approach to Spatial Data for Small Area Estimation When Geography is Important but not All-Important**
   Scott Holan, University of Missouri
2. **A Joint Confidence Set for a Ranking Based on Ordered Means**
   Thomas Mathew, University of Maryland Baltimore County
3. **Generalized Fiducial Inference for Hybrid Discrete-Continuous Count Data**
   Kendall Thomas, University of North Carolina at Chapel Hill
4. **Inference on Normal Coefficients of Variation and Survival Probabilities: One- and Two-Sample Cases**
   Samuel Simon, University of Louisiana at Lafayette

Invited Session 2 (LITE 157)
Object Data Analysis in the AI Era

Organizer: Vic Patrangenaru, Florida State University

1. **Extrinsic Data Analysis**
   Vic Patrangenaru, Florida State University
2. **Advances in BHV4 Analyses and AI Possibilities for Phylogenetic Tree Building**
   Garett Ordway, Pensacola Christian College
3. **Extrinsic MANOVA for Oriented Projective Shape Analysis of 3D Faces**
   Musab Alamoudi, Florida State University
4. **Object Data Analysis for Protein Structures**
   Ruiyang Sun, Florida State University

Invited Session 3 (LITE 161)
Statistical and Machine Learning Methods for Nonstandard Data Structures

Organizer: Mo Li, University of Louisiana at Lafayette

1. **Data-Efficient Generative Modeling for LPBF Process Design**
   Xiyuan Liu, Louisiana Tech

2. **A composite likelihood-based approach for multiple changepoint detection in snow cover count time series**
   QiQi Lu, Virginia Commonwealth University
3. **Addressing Imbalance Data: Statistics Meets Computer Vision**
   Hossein Moradi Rekabdarkolaee, Bowling Green State University
4. **Impact of Measurement Error on Machine Learning Performance and Interpretability**
   Tamer Oraby, University of Texas Rio Grande Valley
5. **CAFT: A Compositional Log-Linear Model for Microbiome Data with Zero Cells**
   Mo Li, University of Louisiana at Lafayette

Friday: 2:40 - 3:00 Welcoming Remarks (LITE Auditorium)

Kumer Das,
Chair, AISC 2026 Organizing Committee

Azmy Ackleh,
Dean, Ray P. Authement College of Sciences

Friday: 3:00 - 3:50 Plenary Talk 1 (LITE Auditorium)

Moderator: Kumer Das, University of Louisiana at Lafayette

Frontiers of Statistics in Science and Engineering: 2035 and Beyond National Academies of Science, Engineering and Medicine Consensus Study
Katherine Bennett Ensor, Rice University

Friday: 3:50 - 4:05 Break

Friday: 4:05 - 5:05 Contributed Sessions 1 - 3

Contributed Session 1 (LITE Auditorium)

Moderator: Subhash Bagui, University of West Florida

1. **Contact Weighted Training and Multi Context Encoding for All Atom Inverse Protein Folding**
   Mithun Ranjan Kar, University of Louisiana at Lafayette
2. **Quantifying the Pressure Experienced by Batters and Bowlers in T20 Cricket**
   Ananda Manage, Sam Houston State University
3. **Stirling Numbers of the Second Kind: Properties and Applications in Mathematics and Statistics**
   Subhash Bagui, University of West Florida

Contributed Session 2 (LITE 157)

Moderator: Calvin Berry, University of Louisiana at Lafayette

1. **Revisiting Equity–Bond Diversification under Tail Risk and Structural Market Change: Evidence from Global ETFs and Option-Implied Dynamics**
   Farzana Afroz, Texas Tech University
2. **A Study on the Influence of International Trade, Monetary Policy and Regime Shift, towards the Economic Growth in Sri Lanka**
   Ruwani Denagama Vitharanage, Texas Tech University
3. **Testing multivariate normality of a large number of populations**
   Nurudeen Ajadi, University of Louisiana at Lafayette

Contributed Session 3 (LITE 161)

Moderator: Asim Dey, Texas Tech University

1. **Application of Market Basket Analysis to Identify Co-Occurring Substance Use Among Patients Admitted to Publicly Funded Substance Use Treatment Programs**
   Chesmi Kumbalatara, Southern Illinois University
2. **Bayesian Spatial Causal Modeling of Asthma Prevalence in the United States**
   Rajitha Edirisingha Mudiyanselage, Texas Tech University
3. **It's Not Your Parents' Income, It's Your Neighbors' Diplomas - A Cluster Analysis of Neighborhood Groups in Forsyth County, NC**
   Quoc Bui, Winston-Salem State University

Friday: 5:05 - 5:20 Break

Friday: 5:20 - 6:10 Plenary Talk 2 (LITE Auditorium)

Moderator: Asim Dey, Texas Tech University

Real-world Impacts from Statistical Research in Industry, Government, and Academe
Karen Kafadar, University of Virginia

Friday: 6:10 - 7:10 JSTP Editorial Board Meeting (LITE 155)

Friday: 6:10 - 7:00 Relax, Visit, and Set Up Posters (LITE Lobby)

Friday: 7:00 - 8:30 Mixer and Poster Session (LITE Lobby)

Poster Session (LITE Lobby)

1. **Probability of Antibiotic Resistance During Treatment in Stochastic PK/PD-Based Bacterial Model with Distinct Drug and Mutation Modes**
   Chimezie Izuazu, University of Louisiana at Lafayette
   Advisor: Cameron Browne

2. **Bayesian Spatiotemporal Modeling of County-Level Heart-Disease Mortality in the United States, 2000–2020**
   Kamlesh Sarkar, University of Louisiana at Lafayette
   Advisor: Kumer Das
3. **Time Series Analysis of Trait Evolution on Phylogenetic Trees of Amazonian Fish**
   Eric Sinegal, University of Louisiana at Lafayette
   Advisor: Erez Aghion
4. **Collaboration and Landscaping provide an Edge in Stochastic Search**
   Ayden Guilbeau, University of Louisiana at Lafayette
   Advisor: Erez Aghion
5. **When Help Cannot Reach Everyone: Understanding Disaster Preparedness, Accessibility, and Recovery Needs of People with Motor Disabilities and Caregivers.**
   Busayo L. Ayodele, University of Louisiana at Lafayette
   Advisor: Tamanna Motahar
6. **Analyzing Generative AI Use in Abusive Situations: Patterns of Support, Trust, and Safety**
   Warda Ruheen Bristi and Huxton J Marcus University of Louisiana at Lafayette
   Advisor: Tamanna Motahar
7. **Missing Not at Random: How Fear of Disclosure and the Disability Data Gap Distort Identity**
   Mashiyat Mahjabin Eshita, University of Louisiana at Lafayette
   Advisor: Tamanna Motahar
8. **Confidence-Aware Early Speech Emotion Recognition Under few-Shot Learning**
   Brett Keown, University of Louisiana at Lafayette
   Advisor: Ashok Kumar
9. **The Role of Refuge in a Discrete-Time Competition Model with an Allee Effect**
   Sajan Bhandari, University of Louisiana at Lafayette
   Advisor: Azmy S. Ackleh
10. **Modelling the spectroscopy and dynamics of atmospherically relevant ROO and QOOH radicals**
    Tanima Barua and Monotosh K Sarkar, University of Louisiana at Lafayette
    Advisor: Tolga Karsili
11. **Low-Temperature Dry Reforming of Methane over Ni-Based Composite-Oxide Catalysts: Operando DRIFTS–Guided Engineering of Coke-Resistant Interfaces**
    Godwin U Edor, University of Louisiana at Lafayette
    Advisor: Hui Yan
12. **Integrating Geochemistry and Microbial Activity in the Pecan Island Area with Coastal Change**
    Diana (Ana) Kreamer, Johnathan Pillsbury, Bibi Morium, Zubair Ahmed, Imran Ullah, Isaac Asiamah, Anasiberuje Sanni, Samuel Mensah, Grace Landry, and Dreux Davis, University of Louisiana at Lafayette, and Paul Helfrich, University of Maryland
    Advisor: Alysia Cox

13. **Wavelet-Based Multiscale Analysis of Illumination and Noise for Robust Low-Light Image Enhancement**
    Azwaad Labiba Mohiuddin
    Advisor: Ashok Kumar
14. **Computational Modeling of Ion Transport Dynamics in Ion Exchange Membranes for Improved Efficiency**
    Afeez O. Jimoh, University of Louisiana at Lafayette
    Advisor: Erez Aghion
15. **AI Tools Indicate Repeated Hurricanes Reshape Coastal Biodiversity**
    Jacob Badcock, University of Louisiana at Lafayette
    Advisor: Craig R. McClain
16. **Resource-Adaptive Machine Learning for Micronutrient Screening: Temporal Evaluation Across Repeated NHANES Cycles**
    Edidiong Akpan, University of Louisiana at Lafayette
    Advisor: Min Shi
17. **Automating Specific Leaf Area, SLA, Measurements Through Image Processing**
    Harold Forbis, University of Louisiana at Lafayette
    Advisor: Nicholas Kooyers
18. **G-SELC: An R Package for Sequential Optimization of Large Discrete Search Spaces**
    Charles Wu, University of Georgia
    Advisor: Abhyuday Mandal
19. **Generalized Fiducial Inference for Hybrid Discrete-Continuous Count Data**
    Kendall Thomas, University of North Carolina at Chapel Hill
    Advisor: Jan Hannig
20. **Testing multivariate normality of a large number of populations**
    Nurudeen Ajadi, University of Louisiana at Lafayette
    Advisor: Yongli Sang
21. **Fourier Ratio Bounds and Sensitivity to Sensor Placement**
    Christopher Housholder, Missouri State University
22. **Binomial Edge Ideals and the Lefschetz properties for certain graph families**
    Gasper Ndokaj, Vassar College
    Advisor: Steven Miller
23. **Integration and Implementation Challenges of Shared Health Records in Bangladesh**
    Mohammad Rashid, Directorate General of Health Services, DGHS
24. **Quality of Emergency Care in Selected Hospitals: A Cross-Sectional Study**
    Mohammad Islam, Ministry of Health and Family Welfare
25. **Contact Weighted Training and Multi Context Encoding for All Atom Inverse Protein Folding**
    Mithun Ranjan Kar, University of Louisiana at Lafayette
    Advisor: Kumer Das
26. **Finite Difference Approach for a Hierarchical Size-Structured Predator-Prey Model**
    Md Kamruzzaman, University of Louisiana at Lafayette
    Advisor: Azmy Ackleh

Saturday

Saturday: 7:45 - 8:30 Breakfast and Registration (LITE Lobby)

Saturday: 8:30 - 9:20 Plenary Talk 3 (LITE Auditorium)

Moderator: Sat Gupta, University of North Carolina Greensboro

Divide, Shrink, and Conquer: Estimation Strategies for Large-Scale Data
S. Ejaz Ahmed, Brock University, Ontario, Canada

Saturday: 9:20 - 9:35 Break

Saturday: 9:35 - 11:15 Invited Sessions 4 - 6

Invited Session 4 (LITE Auditorium)
Advances in Sampling Theory and Practice

Organizer: Sat Gupta, University of North Carolina Greensboro

1. **Newer Innovations in Randomized Response Technique (RRT) Research**
   Sat Gupta, University of North Carolina Greensboro
2. **Impact of Partial Randomized Response Technique on Stratified Calibration Estimators with Different Types of Distance Measures in the Presence of Measurement Error**
   Trisandhya Pidugu, Bharati Vidyapeeth's College of Engineering, New Delhi
3. **Trust Enhancement in Binary Randomized Response Technique (RRT) Models**
   Mala Gupta, University of Texas Dallas
4. **Optional Mixture Binary RRT Models Accounting for Trust Deficit and Measurement Errors**
   Pujita Sapra, High Point State University
5. **Estimating Age Misrepresentation Among Collegiate Student Athletes in India: A Field Work Study Using a Mixture Binary RRT Model**
   Geeta Kalucha, University of Delhi

Invited Session 5 (LITE 157)
Statistical methods and applications for time-to-event, longitudinal, and complex data

Organizer: Mithun Kumar Acharjee, University of Southern Mississippi

1. **Bayesian Tele-connected Spatial Clustering of Multivariate Spatial Data with Applications to Disease-Mapping**
   Srijato Bhattacharyya, Texas A&M University
2. **Non-Homogeneous Continuous-time Markov Chain: Estimations and Challenges**
   Joonha Chang, Louisiana State University Health Science Center, New Orleans

3. **SCG: Identifying Spatially Co-Expressed Genes Using Spatial Covariance Regression**
   Ihsan Buker, University of Alabama at Birmingham
4. **Joint Smooth Direct Search for Learning Dynamic Treatment Regimes from Longitudinal Health Data**
   Nilson Chapagain, Texas A&M University
5. **Bayesian Semiparametric Joint Multivariable Frailty Model for Multitype Recurrent Events and a Terminal Event**
   Mithun Kumar Acharjee, University of Southern Mississippi

Invited Session 6 (LITE 161)
Innovations in Survival Analysis for Complex Biomedical Data

Organizer: Samiran Sinha, Texas A&M University

1. **High-dimensional Proportional Hazards Model with the Horseshoe+ Prior**
   Zhuanzhuan Ma, University of Texas Rio Grande Valley
2. **High-Dimensional Survival Analysis: Which Methods Work for Feature Selection and Prediction?**
   Samiran Sinha, Texas A&M University
3. **Semi-Supervised Learning for Measurement Error Correction in Survival Outcomes via Gaussian Process Survival Models**
   Yu-Chien Bo Ning, Texas A&M University
4. **Quantifying Mediated Treatment Effects to Support Accelerated Approval Decision-Making in Oncology**
   Yiqing Chen, Texas A&M University

Saturday: 11:15 - 12:15 Lunch (LITE Lobby)

Saturday: 12:15 - 12:30 Group Photo (LITE Lobby)

Saturday: 12:30 - 1:20 Plenary Talk 4 (LITE Auditorium)

Moderator: Mithun Kumar Acharjee, University of Southern Mississippi

From Insight to Impact: Agentic AI and the Decision Architecture of Trustworthy Action
Ari Zitin, SAS Institute

Saturday: 1:20 - 1:35 Break

Saturday: 1:35 - 2:55 Contributed Sessions 4 - 6

Contributed Session 4 (LITE Auditorium)

Moderator: Mo Li, University of Louisiana at Lafayette

1. **Statistical Analysis of Factors Associated with Early Initiation of Breastfeeding in Bangladesh: Evidence from BDHS 2022**
   Nihar Ranjan Sikder, University of North Florida
2. **Fourier Ratio Bounds and Sensitivity to Sensor Placement**
   Christopher Housholder, Missouri State University
3. **Distribution and Quantile Estimation in High-Dimensional Sparse Linear Models**
   Shuxia Sun, Wright State University
4. **Semiparametric Validation of Earthquake Path Attenuation Using Perception-Based and Instrumental Data**
   Junhui Yang, Loyola Marymount University

Contributed Session 5 (LITE 157)

Moderator: Mohammad Patwary, Butler University

1. **Credible Rank Distributions for Bayesian Unit-Level Small Area Estimation**
   Arghadeep Basu, University of Georgia
2. **A Hybrid MCMC-Optimization Framework for Efficient Sampling of Multimodal Bayesian Posterior Distributions**
   Lakshana Wickramasinghe, Lamar University
3. **A Comparative Study of Vector Autoregressive, VAR, Bayesian Vector Autoregressive, BVAR, and Mixed-Frequency Bayesian Vector Autoregressive, MBVAR Models for Macroeconomic Forecasting**
   Shree Rajkumar Saha, The Graduate Center City University of New York
4. **Estimating Two Missing Observations in Two-Way Fixed-Effects Linear Model Data**
   Mohammad Patwary, Butler University

Contributed Session 6 (LITE 161)

Moderator: Yongli Sang, University of Louisiana at Lafayette

1. **From Planning Steps to Candidate Polymers: Completion-Based Process Rewards for Property-Constrained TSMP Generation**
   Borun Das, University of Louisiana at Lafayette
2. **How Emotional Intelligence and Positive Mental Health Drive Academic Performance: A Study of National University Undergraduates**
   Sajib Sarker, University of North Florida
3. **Modeling Kidney Health Biomarkers Using Blood Heavy Metal Levels From Complex Survey Data**
   Sarah Czuba, High Point University

4. **Machine Learning Approaches for Early Prediction of Ventilator-Associated Pneumonia Using EHR Data**
   Bao Maddux, Winston-Salem State University

Saturday: 2:55 - 3:10 Break

Saturday: 3:10 - 4:00 Plenary Talk 5 (LITE Auditorium)

Moderator: Kalimuthu Krishnamoorthy,
University of Louisiana at Lafayette

Data Subsampling Strategies
John Stufken, George Mason University

Saturday: 4:00 - 4:15 Break

Saturday: 4:15 - 5:35 Invited Sessions 7 - 10

Invited Session 7 (LITE Auditorium)
Undergraduate Student Research

Organizer: Steven Miller, Williams College

1. **The Rainbow Number for $x + y = z^2 \in Z_{p^2}$**
   Lucas Danburg and Ian Lundy, Fairfield University
2. **The Sperner Scoring Game: From Parities to Probabilities**
   Simon Harnik, Bronx High School of Science
3. **Binomial Edge Ideals and the Lefschetz properties for certain graph families**
   Gasper Ndokaj, Vassar College

Invited Session 8 (LITE 157)
Recent Advances in Gini-Based Dependence Measures and Modern Classification Methods

Organizer: Yongli Sang, University of Louisiana at Lafayette

1. **The double descent behavior in two layer neural network for binary classification**
   Hailin Sang, University of Mississippi
2. **Functional canonical correlation for discriminant analysis**
   Xin Dang, University of Mississippi
3. **Grouped feature screening for ultrahigh-dimensional classification via Gini distance correlation**
   Yongli Sang, University of Louisiana at Lafayette

Invited Session 9 (LITE 161)
Health Systems and Morbidity

Organizer: Md. Shahjahan, Daffodil International University, Dhaka

1. **Patients Satisfaction and Quality of Services at Community Clinics: An in-depth Study in Haor Region**
   Md. Shahjahan, Daffodil International University, Dhaka
2. **Artificial Intelligence and Disability: A Path toward Inclusive Innovation**
   Mohd. Arifuzzaman, North Western University
3. **Integration and Implementation Challenges of Shared Health Records in Bangladesh**
   Mohammad Rashid, Directorate General of Health Services, DGHS
4. **Quality of Emergency Care in Selected Hospitals: A Cross-Sectional Study**
   Mohammad Islam, Ministry of Health and Family Welfare

Invited Session 10 (LITE 167)
A Panoply of Statistical Methods Spanning Inference, Machine Learning, and Bioinformatics

Organizer: Shesh Rai, University of Cincinnati

1. **Designing and Analyzing for Valid Inferences of Large Databases involving High-throughput Observations – Part I**
   Shesh Rai, University of Cincinnati
2. **Designing and Analyzing for Valid Inferences of Large Databases involving non-High-throughput Observations – Part II**
   Anand Seth, University of Cincinnati
3. **Local and Global Optimization – A Decision Tree Perspective**
   MB Rao, University of Cincinnati
4. **Sampling With or Without Replacement: A Comparative Study**
   MB Rao, University of Cincinnati and Tianyuan Guan, Kent State University

Saturday: 5:35 - 6:30 Relax, Listen to Musical Performance, and Visit (Russo Stadium Club, 201 Reinhardt Dr.)

Saturday: 6:30 Banquet (Russo Stadium Club, 201 Reinhardt Dr.)

Sunday Morning

Sunday: 7:45 - 8:30 Breakfast (LITE Lobby)

Sunday: 8:30 - 9:20 Plenary Talk 6 (LITE Auditorium)

Moderator: Calvin Berry, University of Louisiana at Lafayette

The Future of Drug Development: AI as a Strategic Enabler
Hiya Banerjee, Eli Lilly and Company

Sunday: 9:20 - 9:35 Break

Sunday: 9:35 - 10:55 Contributed Sessions 7 - 9

Contributed Session 7 (LITE Auditorium)

Moderator: Asim Dey, Texas Tech University

1. **IoT-Enabled Lean Six Sigma for Cleaner Production in Solar Photovoltaic Manufacturing: A Conceptual Framework for Sustainable Process Improvement**
   Ramisa Nawar Promee, First Solar, Inc.
2. **Recurrent Myocardial Infarction-Heart Failure Trajectories and Terminal Mortality**
   Mohammad Tariquel Islam, University of South Alabama
3. **Two Lenses on the Same Problem Space: Contrasting Predictive and Explanatory Statistical Approaches to E-Commerce Customer Behavior**
   Asadullah Ahmad, University of Louisiana at Lafayette
4. **G-SELC: An R Package for Sequential Optimization of Large Discrete Search Spaces**
   Charles Wu, University of Georgia

Contributed Session 8 (LITE 157)

Moderator: Kushani De Silva, Lamar University

1. **Toward Statistically Rigorous Benchmarking of Stochastic and Hyperdimensional Computing Methods for Resource-Constrained Edge Vision**
   Mohammad Abdul Hannan, Independent Researcher
2. **Computational Modeling of Ion Transport Dynamics in Ion Exchange Membranes for Improved Efficiency**
   Afeez O. Jimoh, University of Louisiana at Lafayette
3. **AI Tools Indicate Repeated Hurricanes Reshape Coastal Biodiversity**
   Jacob Badcock, University of Louisiana at Lafayette
4. **Quantification of joint and conditional climatic stress dependence on surface soil profile: Bayesian-copula approach on predictive drought index**
   Kushani De Silva, Lamar University

Contributed Session 9 (LITE 161)

Moderator: Phillip Whitman, University of Louisiana at Lafayette

1. **Multivariate Functional Inference and Gaussian Mixture Modeling of Joint Temperature-Precipitation Patterns in the U.S. South Central Region**
   Gihani Vidumini Wickramasinghe Wickramasinghe Disanayakage,
   Texas Tech University
2. **A Machine Learning Pre-Audit Screening Tool for Industrial Energy Efficiency Assessment**
   Tamjeed Ahmed, University of Louisiana at Lafayette
3. **Resource-Adaptive Machine Learning for Micronutrient Screening: Temporal Evaluation Across Repeated NHANES Cycles**
   Edidiong Akpan, University of Louisiana at Lafayette
4. **Characterizing Seasonal Differences in Sperm Whale Activity in the Gulf Using a Generalized Linear Modeling Framework**
   Phillip Whitman, University of Louisiana at Lafayette

Sunday: 10:55 - 11:10 Break

Sunday: 11:10 - 12:30 Contributed Session 10

Contributed Session 10 (LITE Auditorium)

Moderator: Calvin Berry, University of Louisiana at Lafayette

1. **Confidence intervals for normal quantiles: one- and two-sample problems**
   Justin Dunnam, University of Louisiana at Lafayette
2. **Automating Specific Leaf Area, SLA, Measurements Through Image Processing**
   Harold Forbis, University of Louisiana at Lafayette
3. **Machine Learning in Stata via H2O**
   Zhao Xu, Stata Corp., Inc.
4. **Integrating Persistent Homology and Multilevel Functional Data Analysis for Brain MRI**
   Asim Dey, Texas Tech University

Sunday: 12:30 Lunch and Closing Remarks (LITE Lobby)