

2015-16 SAMSI PROGRAM

Statistics and Applied Mathematics in Forensic Science

Statistical and Applied Mathematical
Sciences Institute
19 T.W. Alexander Drive
RTP, NC 27709

samsi
NSF · Duke · NCSU · UNC · NISS

WAYS TO PARTICIPATE

- Short- and long-term Visits
- New Researcher Fellowships
- Postdoctoral Fellowships
- Graduate Student Fellowships
- Graduate Courses
- Working Group meetings
- Workshop Conferences



Program Leaders

- Clifford Spiegelman, Texas A&M
- Eugene Fiorini, Rutgers
- Lyn Haber, Human Factors Consultants
- Anil Jain, Michigan State
- Karen Kafadar, Virginia
- Cedric Neumann, South Dakota State
- William Tobin, Forensic Engineering International
- Sandy Zabell, Northwestern

SAMSI Directorate Liaison

- Nell Sedransk, NISS

Local Scientific Coordinator

- Alan Karr, RTI International

Forensic science is data-driven, but forensic science is much more than fingerprints and DNA. The central goal of this program is to strengthen the statistical and applied mathematical bases of forensic science.

The Forensics program addresses fundamental issues underlying moves to reform forensic science, focusing primarily on the many initial and problematic components of “physical” evidence. Working groups are planned to address both specific forms of forensic evidence and overarching statistical and applied mathematical issues based in imaging and pattern recognition.

Areas of Research

- Statistical Modeling and Model Selection
- Big Data
- High-dimensional Data: Clustering/Modeling/Analysis
- Sampling and Data Collection
- Statistical Designs
- Interpretation and Communication
- Error Rate Estimation
- Quantifying Objectivity: Framing Effects, Cognitive and Statistical Bias-Assessment and Reduction
- Process Control and Quality Assurance: Forensics Process

Areas of Application

- Pattern Evidence: fingerprints, bite marks, firearms and toolmarks
- Imaging: pattern matching, biometric identification
- Quality Control and Objective Analysis in Forensic Laboratories
- Inference and Communication: significance of “match,” effects of distorted evidence and cognitive bias, communication in the courtroom
- Psychology: Cognitive Bias, Objective Inference, Non-Statistical Bias, Subjective Distortion of Data

Go to WWW.SAMSI.INFO for more information