

# Panel on the use of Interval Quantifications for the Value of Forensic Evidence

Christopher P. Saunders

Department of Mathematics and Statistics  
South Dakota State University

May 2016

Introduction

Background-  
Overview

Questions

Panel Format

## Introduction

## Background- Overview

## Questions

## Panel Format

In a 2009 NIJ project-

Following the work of James Curran and colleagues on credible/confidence Intervals for LR's in DNA, I had proposed to construct intervals for LR's we were using in source ID problems for QDE.

*I became very concerned about this work when I could not answer these questions-*

- ▶ Bayes Factor or Likelihood Ratio in Forensic Source ID.
- ▶ What do Intervals mean?
- ▶ How do we update our belief concerning an interval?
  - ▶ As statistical experts?
  - ▶ As a layperson?
- ▶ Do they cause any problems when presented as a surrogate for a "Forensic LR"?

1. "What is the parameter we are constructing an interval for when we present an interval for the value of evidence?"

1. "What is the parameter we are constructing an interval for when we present an interval for the value of evidence?"
  - 1.1 "What additional information does an interval capture about the value of evidence?"

1. "What is the parameter we are constructing an interval for when we present an interval for the value of evidence?"
  - 1.1 "What additional information does an interval capture about the value of evidence?"
2. "How does a decision maker use an interval to make a decision in a logical and coherent manner?"

1. "What is the parameter we are constructing an interval for when we present an interval for the value of evidence?"
  - 1.1 "What additional information does an interval capture about the value of evidence?"
2. "How does a decision maker use an interval to make a decision in a logical and coherent manner?"
3. "Does presenting an interval quantification of the value of forensic evidence cause any harm?"

1. Each panelist will have 10 minutes to introduce their points of view.
2. Then each panelist will have 5 minutes to respond to the other panelists.
3. I will then open the discussion to the floor.

## Hal S. Stern

- ▶ Professor of Statistics
- ▶ University of California, Irvine
- ▶ Center of Excellence to Improve Statistical Analysis of Forensic Evidence

## Hari Iyer

- ▶ Mathematical Statistician
- ▶ Statistical Engineering Division, National Institute of Standards and Technology

## Marjan Sjerps

- ▶ Professor of Forensic Statistics
- ▶ Netherlands Forensic Institute
- ▶ University of Amsterdam

## Danica M. Ommen

- ▶ PhD Candidate in Statistics
- ▶ South Dakota State University