Fall Colloquium Series

DNA Evidence, Conditional Probability, and The Texas Sharpshooter Fallacy

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Abstracts:

Motivated by the problem of how to interpret DNA evidence in cold hit cases, we'll discuss an important circle of ideas in probability, statistics, and science related to understanding the chances of coincidental findings. We will see that statistics presented to jurors of the chances of a spurious DNA profile match may be wildly inaccurate, as a result of a logical and mathematical error known as the Texas sharpshooter fallacy. In a different guise, this fallacy also causes many false yet statistically significant results to be published in the medical and scientific literature. Finally, we'll show how proper use of either of the two main paradigms of statistics (frequentist and Bayesian) can allow more accurate conclusions and inferences to be drawn in these scenarios.

Wednesday, October 22, 1:05 - 1:50pm in 3-1639