



SPEAKER: Victoria Stodden (Postdoctoral Associate in Law and Kauffman Fellow in Law)

TITLE: **MASSIVE DATA, THE DIGITIZATION OF SCIENCE, AND REPRODUCIBILITY OF RESULTS**

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## ABSTRACT

As the scientific enterprise becomes increasingly computational and data-driven, the nature of the information communicated must change. Without inclusion of the code and data with published computational results, we are engendering a credibility crisis in science. Controversies such as ClimateGate, the microarray-based drug sensitivity clinical trials under investigation at Duke University, and retractions from prominent journals due to unverified code suggest the need for greater transparency in our computational science. In this talk I argue that the scientific method be restored to (1) a focus on error control as central to scientific communication and (2) complete communication of the underlying methodology producing the results, ie. reproducibility. I outline barriers to these goals based on recent survey work (Stodden 2010), and suggest solutions such as the “Reproducible Research Standard” (Stodden 2009), giving open licensing options designed to create an intellectual property framework for scientists consonant with longstanding scientific norms.