IASE 2016 Roundtable Conference
Theme: Promoting understanding of statistics about society

http://iase-web.org/conference/roundtable16
19 – 22 July 2016, Berlin, Germany

Conference Goal: the development of conceptual frameworks, teaching methods, technology solutions, curricular materials, and research that can support and promote learning and understanding of data and statistics about such social phenomena, as they are often not at the core of regular statistics instruction yet essential for civic engagement in modern societies. Further, in this Roundtable we focus on ideas and materials relevant for teaching students at the college (tertiary) or high-school (secondary) levels, leaving other contexts of learning for other conferences.

Applicant: Milo Schield

Topic: Topic 1: Key concepts, issues, barriers, and research findings related to understanding of statistics and data about social phenomena that can guide curriculum design and educational planning,

Role: Workshop teacher.

Workshop Title: Teaching Social Statistics.

STRUCTURED ABSTRACT (200-300 words):

*** Context & Purpose (or: Need):** Students are most likely to see social statistics. These statistics are typically multivariate and observational. Typically, they are opportunistic – chosen to advance a policy or position.

*** Design (or Approach):** This workshop focuses on summaries of social statistics as presented in tables and graphs. In order to read these statistics, students need to be trained in conditional probability using ordinary English. In order to evaluate these statistics, students need to understand what kinds of factors can influence their size, the size of their association, and whether their association is statistically significant. Statistical influences are grouped into four categories: Control (what is compared, controlled for, conditioned on, or modelled), Assembly (how thing are defined, counted or measured), Randomness and Bias. Participants will examine and evaluate various teaching techniques involving coincidence, conditional probability, confounding, time-series correlation and statistical significance (without calculating p-values). Participants will examine the use of Excel for logistic regression, for evaluating the log-normal distributions of incomes and assets and for generating various distributions using chance-based processes.

*** Outcomes (or: Lessons learned):** Participants will analyze and evaluate several new tools for teaching big-data topics within the everyday classroom. Participants will discuss their evaluations at the end of the workshop.

*** Implications for practice / R&D:** Given the availability of these techniques, participants will evaluate which of these topics should be taught in introductory statistics.

Importance (or: Originality & Value): Original, students tested and valuable.

Brief description of personal background (50-90 words): Milo Schield teaches statistics in the Business Department at Augsburg College in the US. He is an elected member of the ISI, the US Representative of the International Statistical Literacy Project, the Vice President of the National Numeracy Network, and the Editor-webmaster of www.StatLit.org. He has written over 70 papers on statistical education and statistical literacy. He has presented at numerous IASE and ICOTS conferences. He is writing a textbook for Wiley titled *Practical Statistics for Decision Makers*.