

Ideas for RSS Leadership

<http://www.statslife.org.uk/members-area/member-news/latest-call-outs-to-members/2298-call-for-ideas-from-rss-members-for-rss-grants-to-make-a-difference>

The Executive Committee is open to a wide range of ideas which would help the RSS fulfil its four strategic aims (statistics in the public interest; education and statistical literacy; supporting the discipline; strengthening the profession).

Colleagues,

The biggest unmet need -- one that affects all four areas -- is in analyzing and interpreting statistics based on observational studies. While "Association is not Causation" is certainly true, it seems that most people want to use statistical associations as evidence for causal connections or as measures of their interventions. Yes, this activity is certainly problematic. Our discipline is very comfortable living in the shadow of Fisher's legacy of no causation without random assignment. Meanwhile some journal editors and the advent of big data have decreased the use of NHST and increased the importance of properly analyzing observational data. See the June 22 2015 Time magazine article on using people analytics for hiring, promotion and firing.

Big data lessens the need to understand variability in sample statistics. Most associations are statistically significant. Big data heightens the need to understand how context, coincidence and confounding can influence an association. Students and citizens need help in how to read and interpret statistics presented in tables and graphs.

The RSS is a unique position to address this need based on the work of leading statisticians:

1. David Hand's 2015 book on Coincidence shows how statistics can address amazing coincidences.
2. Howard Wainer's 2003 article shows how to present confounding graphically.
3. Tintle et al 2014 ISI paper argues that confounding is the key problem in Stats II.

No organization is better positioned to address the issues of coincidence and confounding than the RSS. This effort need not involve great financial cost. What is needed is leadership: intellectual leadership! Here are five ideas. Hopefully these might stimulate even better suggestions.

1. Call for a meeting with the *GetStats Campaign* Director and the Board members. Review slides 38, 39 and 40 in Neville Davies 2011 "Ten Years to Statistical Literacy". Note that coincidence and confounding are never mentioned. Note that context is mentioned on slide 40 -- but without any details. Ask them how the RSS could be more specific in making statistical literacy relevant to the statistical needs of everyday citizens.
2. Issue a call asking those interested in statistical education and statistical literacy to increase their focus on context, coincidence and confounding. Put some specific content under "statistical literacy".
3. Fund travel/conference expenses for those delivering papers on how to include coincidence and causation in the introductory course and/or textbooks.
4. Fund a separate issue of *Significance* on confounding and coincidence.
5. Fund a prize for the best introductory statistics textbook that addresses confounding and coincidence. This would be similar to what Judea Pearl is doing at the graduate level.

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References:

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