

**The likelihood “machinery” in the
analysis of multiple observations and
multiple studies: a generalized attempt
to make statistical analyses
transparent.**

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Last year's grant application ...

- For facilitating, replicating and disseminating insightful statistical applications in health research.
- The overall goal of the proposed research program is to understand how to facilitate insightful statistical collaboration in health services research that can be critically reviewed, replicated and widely shared.

Particulars

- 1) To provide statistical collaboration to health services researchers, primarily in Ottawa
- 2) To identify methods and techniques to document and share the statistical applications knowledge gained
- 3) To examine barriers to insightful statistical collaboration and its documentation in health services research practice and ways to overcome these.

Technicals

- R software and increasing number of ready to compute analysis examples (freely available to anyone)
- Vignette software - to “automate” the writing of statistical motivations as well as documented computer code that can be run to replicate the analyses presented (and review it?).

Why?

- Application insight gained by consulting statisticians is seldom shared as the peer reviewed journal paper format is far from ideal
- Tend to focus on the mathematical exposition rather than on the computational details necessary for replication of techniques especially in other settings
- and a “publication bias” toward new and complex techniques rather than insightful use of simple (not novel) but effective techniques.

Related and future work

- Statistical Inference in Complex Problems:
Specifying Real Uncertainty
D. F. Andrews University of Toronto
- What to graph and how is not immediate
nor obvious
- The likelihood “machinery” in the analysis
of multiple observations and multiple
studies may help ...