June 7, 2016

Announcement of SSMART 2016 Projects

BERKELEY– The Berkeley Initiative for Transparency in Social Science (BITSS) is pleased to announce the winners of its competitive research grant program –Social Science Meta-Analysis and Research Transparency (SSMART). Funded by the Laura and John Arnold Foundation and William and Flora Hewlett Foundation[1], SSMART aims to improve the quality of research in economics, political science, psychology, and related disciplines by focusing on research transparency and reproducibility issues.

For this second round, 34 proposals were received, requesting more than $850,000 in funding. The SSMART review committee—including experts in economics, political science, and psychology[2]—selected proposals representing a mix of disciplines and focus areas.

Eight teams of researchers were selected to receive awards of up to $30,000 each as part of the 2016 round of funding. The selected projects fall within three categories: (1) developing innovative methods to improve the transparency and credibility of research findings; (2) producing new findings through meta-analysis; and (3) studies of researcher norms and strategies to promote the practice of open science.

Synopses of the awards are below. Research projects will be completed by March 2017 and progress can be tracked on the Open Science Framework (OSF).

BITSS is an initiative of the Center for Effective Global Action (CEGA), headquartered at University of California, Berkeley. For more information, visit http://bitss.org.

Category 1: Developing innovative methods to improve the credibility of research findings

Developing a Guideline for Reporting Mediation Analyses (AGReMA)
Researcher(s): Hopin Lee, James H McAuley, and Rob Herbert (Neuroscience Research Australia and University of New South Wales); Steven Kamper (University of Sydney and VU University Medical Centre); Nicolas Henschke (University of Heidelberg); and Christopher M Williams (University of Newcastle)
Open Science Framework Page: https://osf.io/w9kvt/
Abstract: Investigating causal mechanisms using mediation analysis is becoming increasingly common in psychology, public health, and social science. Despite increasing popularity, the accuracy and completeness when reporting mediation analyses are inconsistent. Inadequate and inaccurate reporting of research stifles replication, limits assessment of potential bias, complicates meta-analyses, and wastes resources. There is a pressing need to develop a reporting standard for mediation analyses. Up to now, there have been no registered initiatives on the "Enhancing the QUAlity and Transparency of health Research" (EQUATOR) network that guide the reporting of mediation analyses. Our proposed project aims to improve the reporting quality of future mediation analyses by developing a reporting guideline through a program of established methodologies (Systematic Review, Delphi Survey, Consensus Meetings, and Guideline Dissemination). The development and implementation of this guideline will improve the transparency of research findings on causal mechanisms across multiple disciplines.

Welfare Comparisons Across Expenditure Surveys
Researcher(s): Elliott Collins and Ethan Ligon (UC Berkeley); and Reajul Chowdhury (BRAC)
Open Science Framework Page: https://osf.io/48uwm/
Abstract: This project aims to replicate and combine three recent experiments on capital transfers to poor households in two distinct phases. The first phase will produce three concise internal replications. These will be accompanied by a report detailing the challenges faced and tools and methods used. The final goal will be to produce practical insights useful to students and new researchers. The second phase will combine these experiments in an extended analysis to explore how economic theory can allow for meta-analysis and comparative impact evaluation among datasets that would otherwise be problematic or even impossible to compare.

Bayesian Evidence Synthesis: New Meta-Analytic Procedures for Measuring, Monitoring, Combining, and Projecting Statistical Evidence
Researcher(s): Eric-Jan Wagenmakers, Raoul Grasman, and Quentin F. Gronau (University of Amsterdam); and Felix Schonbrodt (University of Munich)
Open Science Framework Page: TBD
Abstract: The proposed project will develop a suite of meta-analytic techniques for Bayesian evidence synthesis. The proposed suite addresses a series of challenges that currently constrain classical meta-analytic procedures. Specifically, the proposed techniques will allow (1) the quantification of evidence, both for and against the absence of an effect; (2) the monitoring of evidence as new studies accumulate over time; (3) the graceful and principled "model-averaged" combination between fixed-effects and random-effects meta-analysis; (4) the principled planning of a new study in order maximize the probability that it will lead to a worthwhile gain in knowledge.

Category 2: Producing new findings through meta-analysis

A Large-Scale, Interdisciplinary Meta-Analysis on Behavioral Economics Parameters
Researcher(s): Colin Camerer and Taisuke Imai (California Institute of Technology, Pasadena)
Open Science Framework Page: https://osf.io/8kzjm/
Abstract: We propose to conduct large-scale meta-analyses of published and unpublished researches in economics, psychology and neuroscience (and any other fields which emerge) to cumulate knowledge about measured parameters explaining preferences over risk and time. In the risk section, we will locate and meta-analyze studies which estimate parameters associated with curvature of utility and loss-aversion (the ratio between disutility of loss and utility of gain). In the time section, we will locate and meta-analyze studies which estimate parameters associated with near- and long-term discounting (exponential, hyperbolic, and quasi-hyperbolic parameters). Meta-analysis is the proper tool because: It is technologically easier than ever before; there are standard methods to weigh different estimates according to study quality; if unpublished work is found, it can help estimate whether there are biases in favor of publishing certain types of confirmatory bias (or a bias against publishing null results); and looking at a broad range of studies is the most efficient way to help resolve debates about how preference parameters vary across populations (e.g., how much less patient are young people?) and across methods (e.g., are time preferences inferred from monetary rewards different than non-monetary rewards?).

Assessing Bias from the (Mis)Use of Covariates: A Meta-Analysis
Researcher(s): Gabriel Lenz and Alexander Sahn (UC Berkeley)
Open Science Framework Page: https://osf.io/p6y2g/
Abstract: To what extent do researchers use covariates to inflate their estimates and lower their p-values? Recent research has raised questions about the unreliability of scientific evidence, but has focused primarily on experimental studies. In the social sciences, researchers often rely on observational research designs and include covariates to address confounding. The process by which they include covariates lacks transparency and so may lead to unreliable inferences. Although researchers have worried about this problem for decades, practices have largely remained unchanged. The main concern is researchers' considerable discretion over which covariates to include—they can leave out covariates that deflate their estimates (hoping to evade reviewers' detection), and can include covariates that inflate their estimates. Determining whether researchers for any particular study engage in these practices is hard because the true model is unknown. Fortunately, meta-analysis may shed light on this question. Since careful researchers should be arguably more concerned with confounders, which deflate estimates, we should generally find that covariates deflate estimated effects more than they inflate them. Since several leading journals have required researchers to post replication data sets and code for several years now, we plan on conducting a meta-analysis by reanalyzing published studies in several fields to assess the average degree of covariate inflation.

Development of an Integrated Theoretical Model of Condom Use for Young People in Sub-Saharan Africa
Researcher(s): Cleo Protogerou (University of Cape Town); Martin Hagger (Curtin University); and Blair Johnson (University of Connecticut)
Open Science Framework Page: http://bit.ly/1sn1Hdr
Abstract: The proposed project will develop and test an integrated theoretical model of the determinants of condom use among young people in Sub-Saharan Africa (SSA) using meta-analytic path analysis of research to date. The model will be developed based on generalized theoretical frameworks of social cognitive theory and research predicting condom use in SSA nations adopting individual-level social-cognitive theories.

Category 3: Studies of researcher norms and strategies to promote open science

Will knowledge about more efficient study designs increase the willingness to pre-register?

Researcher(s): Daniel Lakens (Eindhoven University of Technology)
Open Science Framework Page: https://osf.io/uy8x5/

Abstract: The proposed project will produce four work packages that explain the benefits of sequential and/or one-sided designs in terms of efficiency, take away concerns about non-conventional designs by instigating a discussion about one-sided tests among researchers and statisticians, and asking whether editors of psychology journals will accept pre-registered sequential and/or one-sided analyses. Finally, I will examine whether researchers who are aware of these benefits are indeed more willing to pre-register their experiments.

Investigation of Data Sharing Attitudes in the Context of a Meta-Analysis

Researcher(s): Joshua R. Polanin and Mary Terzian (Development Services Group, Inc.)
Open Science Framework Page: https://osf.io/nkqzu/

Abstract: Sharing individual participant data (IPD) among researchers, upon request, is an ethical and responsible practice. Despite numerous calls for this practice to be standard, however, research indicates that primary study authors are often unwilling to share IPD, even for use in a meta-analysis. The purpose of this project is to understand the reasons why primary study authors are unwilling to share their data and to investigate whether sending a data-sharing agreement, in the context of updating a meta-analysis, affects participants' willingness to share IPD. Our project corresponds to the third research question asked in the proposal: Why do some researchers adopt transparent research practices, but not others? To investigate these issues, we plan to sample and survey at least 700 researchers whose studies have been included in recently published meta-analyses. The survey will ask participants about their attitudes on data sharing. Half of the participants will receive a hypothetical data-sharing agreement, half of the participants will not, and we will compare their attitudes toward data sharing after distributing the agreement. The results of this project will inform future meta-analysis projects seeking to collect IPD and will inform the community about data-sharing practices and barriers in general.