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Study Design and Power
Registrations
Project Protocol, Reporting Standards
Data Sharing
Conclusion

The Frontier of Research Transparency in the Social Sciences

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Berkeley Institute for Data Science

BITSS 2016 Summer Institute
Slides available online at `http://www.github.com/BITSS/SummerInstitute2016`

BERKELEY INITIATIVE FOR TRANSPARENCY
IN THE SOCIAL SCIENCES

Study Design and Power

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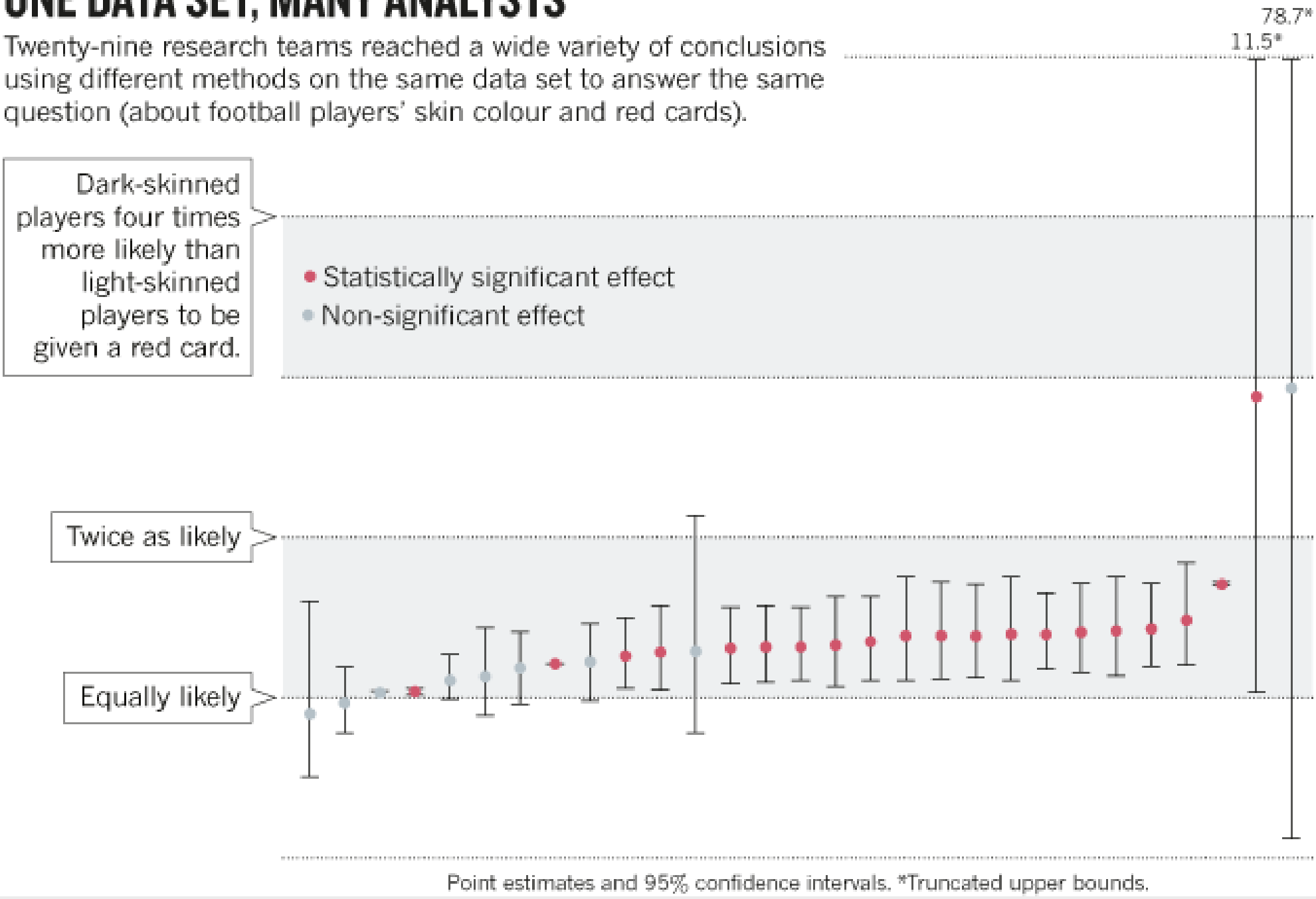
Practical suggestion to adequately power trials to help prevent spurious significant results.

- Collaborate with other labs to mutually run each others' experiments (Open Science Collaboration 2014, 2015).
  - Replication Project: Psychology
  - Many Labs 1, 2, 3
  - Crowdsourcing Analysis (Silberzahn and Uhlmann 2016)
  - Experimental economics replications (Camerer et al. 2016)

ONE DATA SET, MANY ANALYSTS

Twenty-nine research teams reached a wide variety of conclusions using different methods on the same data set to answer the same question (about football players' skin colour and red cards).



Point estimates and 95% confidence intervals. *Truncated upper bounds.

Registration

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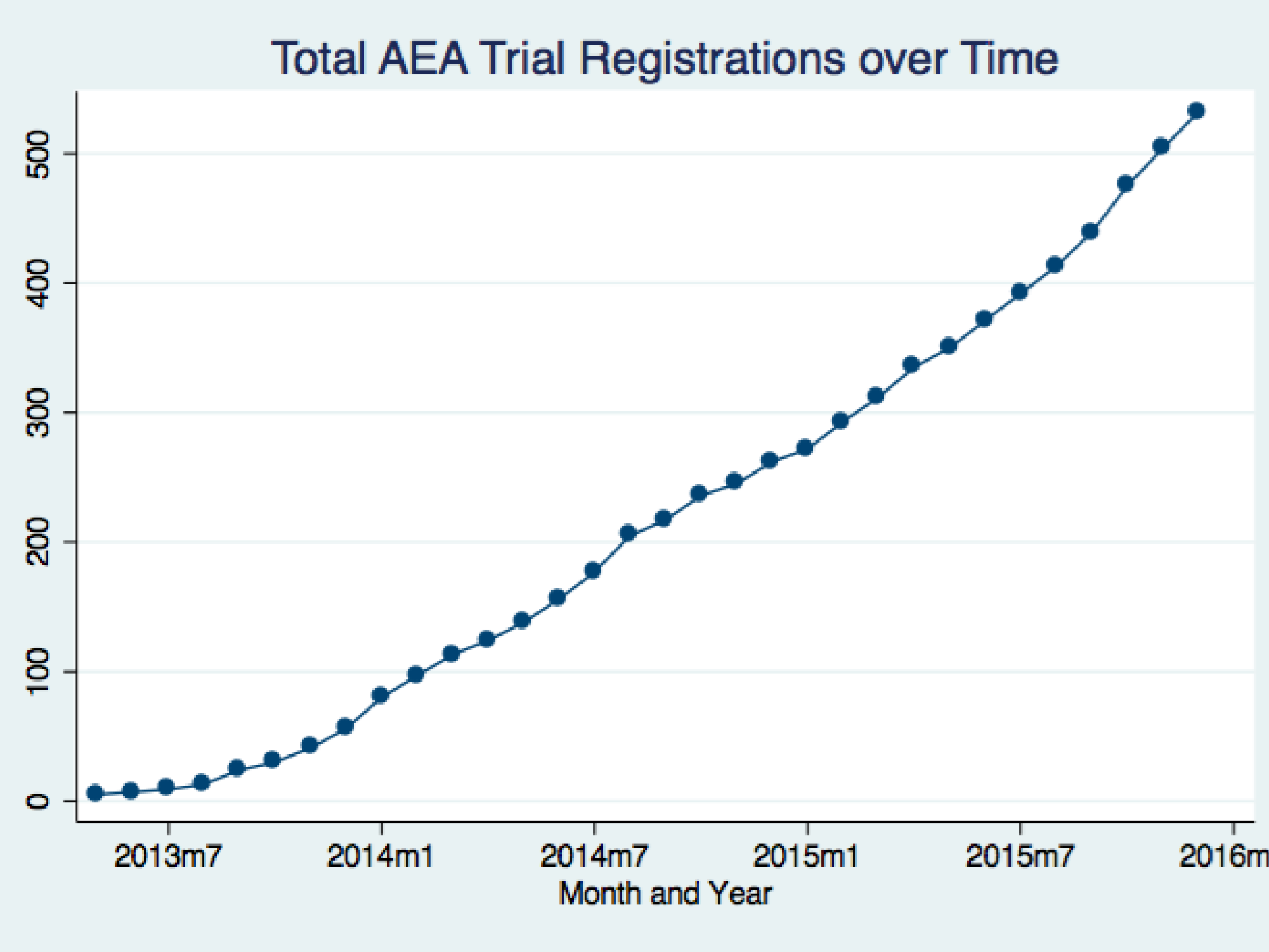
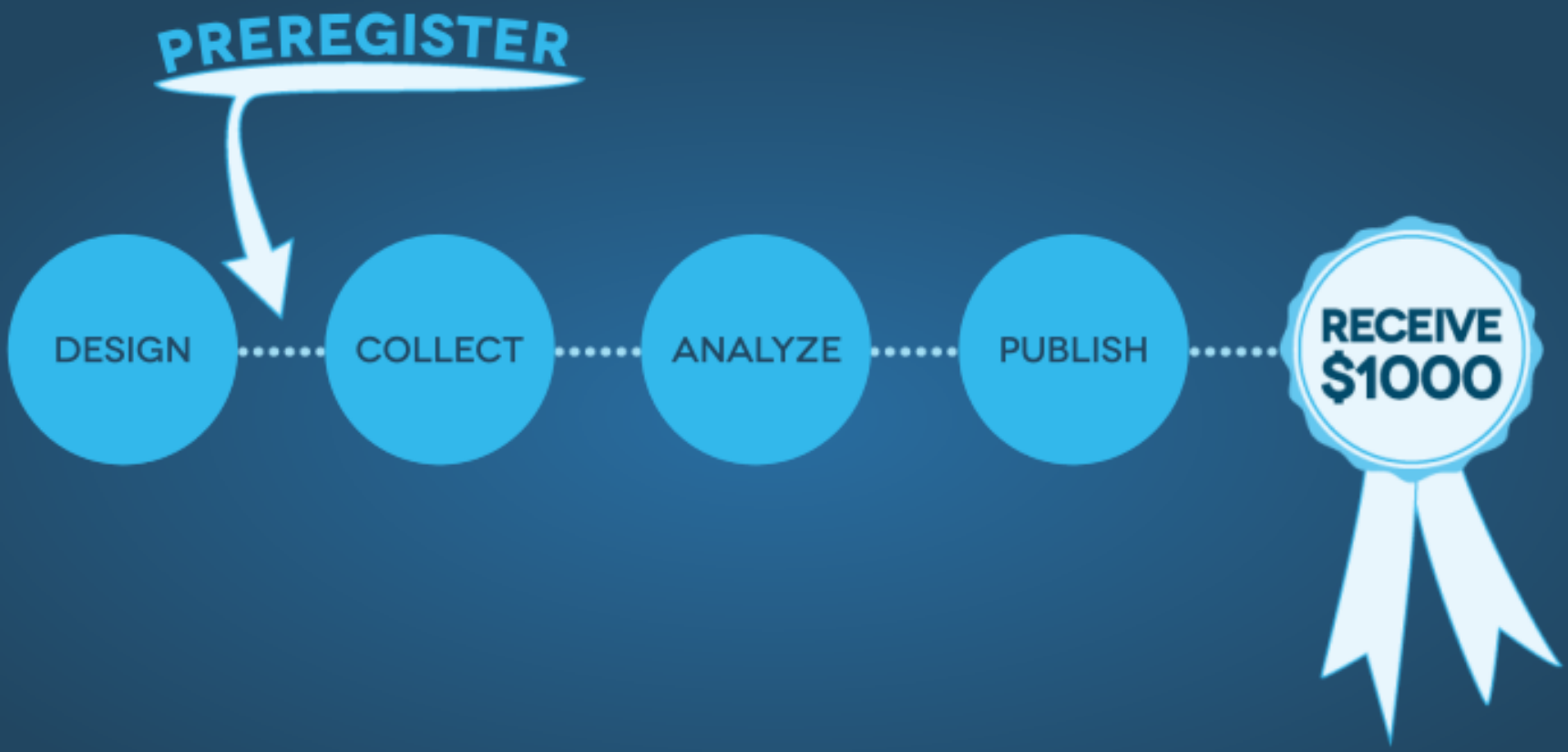
- Newer to social sciences, but:
  - AEA registry, currently only for RCTs.
    `http://socialscienceregistry.org`
  - EGAP registry
    `http://egap.org/design-registration`
  - 3ie registry, for developing country evaluations.
    `http://ridie.3ieimpact.org`
  - Open Science Framework
    `http://osf.io`
    - Open format
    - Will soon sync with above


Total AEA Trial Registrations over Time
0
100
200
300
400
500
2013m7
2014m1
2014m7
2015m1
2015m7
2016m
Month and Year

CENTER FOR OPEN SCIENCE



THE PREREGISTRATION CHALLENGE

Learn more at cos.io/prereg

Design-Based Publication

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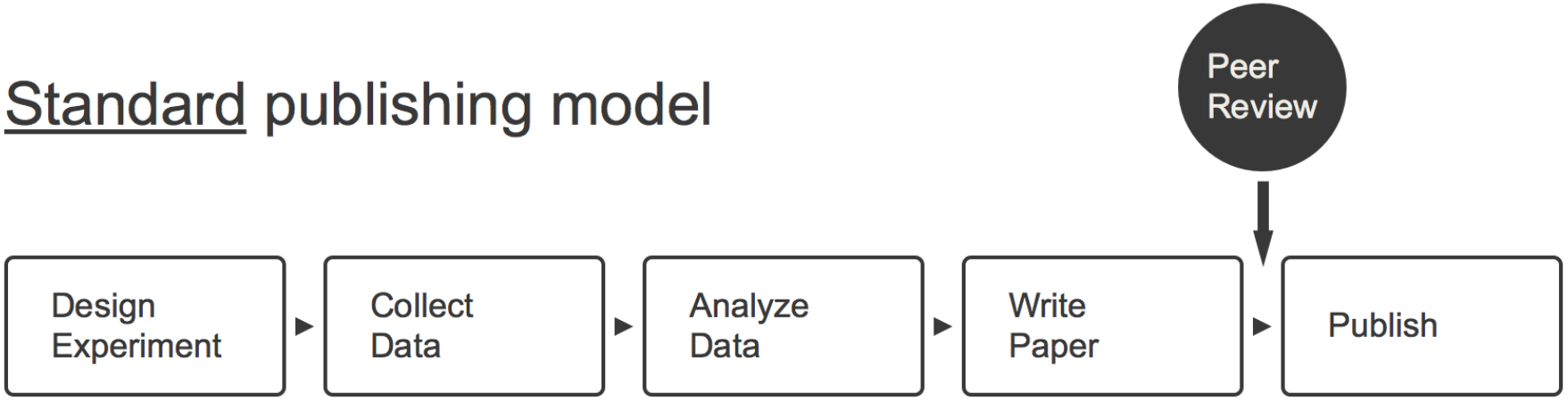
AKA Registered Reports, moves peer review before data gathering, results, and analysis.

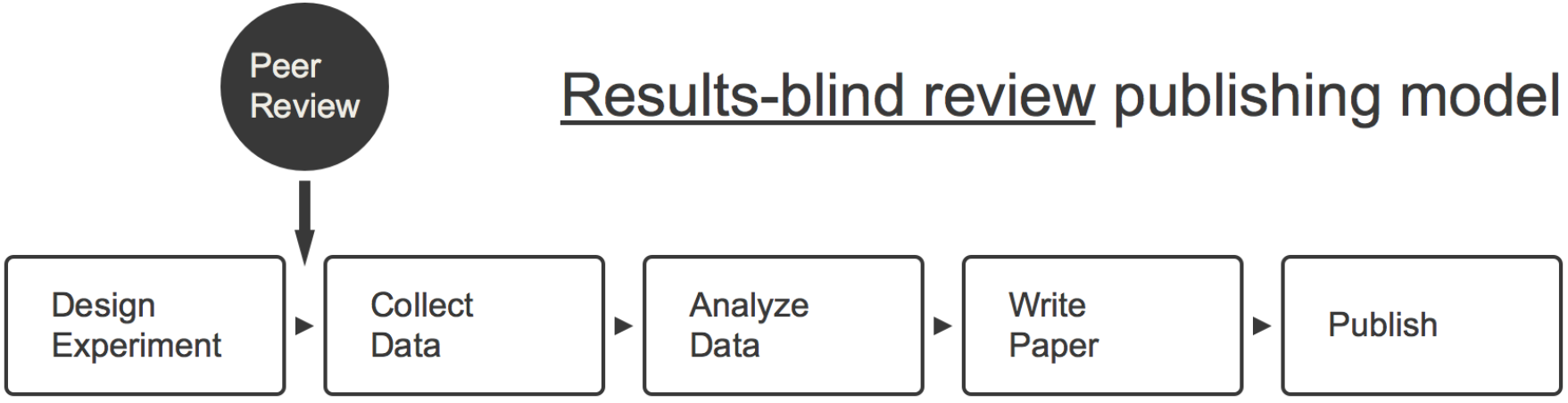
1. Design a project
2. Submit
3. Reviewed based on importance of question and quality of design
4. Get in-principle acceptance
5. Follow through, and nulls get published

20 Journals, 5 more with Special Issues ▸ Link

Standard publishing model



Results-blind review publishing model



Project Protocol, Reporting Standards

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Make sure you report everything another researcher would need to replicate your research.

- Find the appropriate reporting standard for your field and follow it: `http://www.equator-network.org`
- Report the nuts and bolts of the project implementation in a detailed protocol: `http://www.spirit-statement.org`
- Transparency and Openness Promotion (TOP) Guidelines: `http://cos.io/top`

Science AAAS

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SHARE

POLICY FORUM | SCIENTIFIC STANDARDS

Promoting an open research culture

B. A. Nosek*, G. Alter, G. C. Banks, D. Borsboom, S. D. Bowman, S. J. Breckler, S. Buck, C. D. Chambers, G. Chin, G. Christensen, M. Contestabile, A. Dafoe, E. Eich, J. Freese, R. Glennerster, D. Goroff, D. P. Green, B. Hesse, M. Humphreys, J. Ishiyama, D. Karlan, A. Kraut, A. Lupia, P. Mabry, T. Madon, N. Malhotra, E. Mayo-Wilson, M. McNutt, E. Miguel, E. Levy Paluck, U. Simonsohn, C. Soderberg, B. A. Spellman, J. Turitto, G. VandenBos, S. Vazire, E. J. Wagenmakers, R. Wilson, T. Yarkoni

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Science 26 Jun 2015:
Vol. 348, Issue 6242, pp. 1422-1425
DOI: 10.1126/science.aab2374

EDITORIAL

Taking up TOP

Marcia McNutt

+ Author Affiliations

Science 03 Jun 2016:
Vol. 352, Issue 6290, pp. 1147
DOI: 10.1126/science.aag2359

Nearly 1 year ago, a group of researchers boldly suggested that the standards for research quality, transparency, and trustworthiness could be improved if journals banded together to adopt eight standards called TOP (Transparency and Openness Promotion).* Since that time, more than 500 journals have been working toward their implementation of TOP. The editors at *Science* have held additional retreats

PHOTO: STACEY PENTLAND PHOTOGRAPHY

Data Sharing

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Post your code and your data in a trusted public repository.

- Find the appropriate repository: `http://www.re3data.org/`
- Repositories will last longer than your own website.
- Repositories are more easily searchable by other researchers.
- Repositories will store your data in a non-proprietary format that won't become obsolete.

“Stupid Little Badges”

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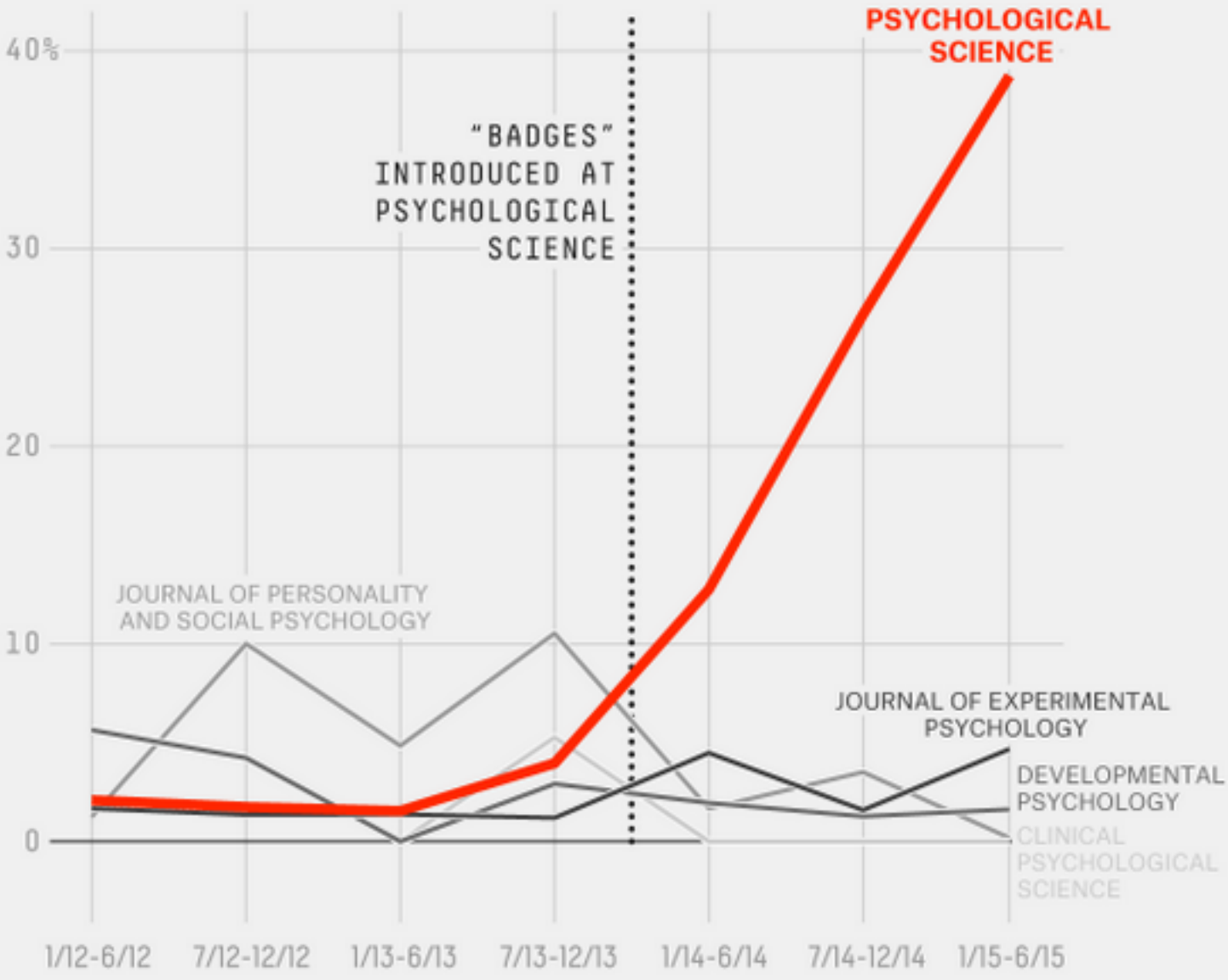
Publish in a journal that ‘rewards’ good behavior.
538: “Even pyschologists respond to meaningless rewards”

Data sharing rose when it was rewarded

Share of papers in four psych journals reporting open data



FIVETHIRTYEIGHT

SOURCE: PLOS BIOLOGY

INITIATIVE for open science

We believe that openness and transparency are core values of science. For a long time, technological obstacles existed preventing transparency from being the norm. With the advent of the internet, however, these obstacles have largely disappeared. The promise of open research can finally be realized, but this will require a cultural change in science. The power to create that change lies in the peer-review process.

Conclusion

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OK, I'm convinced. How do I implement this in my own research?

- Read the manual I wrote. ▸ Link
- Subscribe to the BITSS blog & E-mail list ▸ Link
- Apply for our Summer Institute. ▸ Link
- Apply for our SSMART Grants (extra funding for developing country researchers). ▸ Link
- Apply for our Leamer-Rosenthal Prizes. ▸ Link

Summer Institute

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Here at UC Berkeley, in July at the University of Michigan, good chance of abroad next year.

SSMART Grant

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Up to $30,000 grant for a research project on:

- Develop new methodology
- New tools and approaches for meta-analysis
- Research on researchers and adoption of new norms

Extra funding source for researchers from developing countries.

Leamer-Rosenthal Prizes

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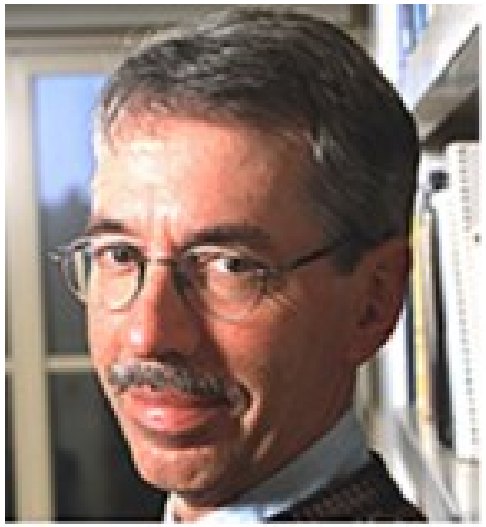
Up to $10,000 prize for completed transparent research in the social sciences, especially:

- Economics
- Political Science
- Psychology


Edward Leamer

Robert Rosenthal

Stay Involved

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Join our catalyst network!

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Questions?

Thank you!