

Strategies for improving openness and reproducibility

Andrew Sallans

Center for Open Science

<http://cos.io/>

@OSFramework



ALFRED P. SLOAN
FOUNDATION

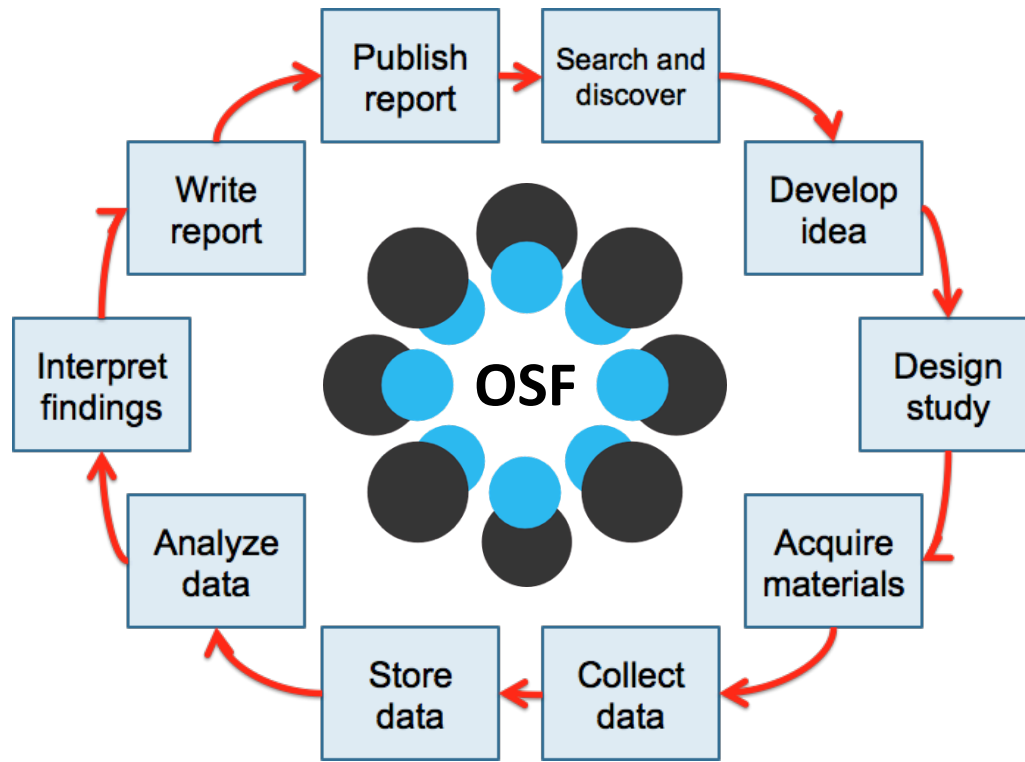
JOHN TEMPLETON FOUNDATION

SUPPORTING SCIENCE ~ INVESTING IN THE BIG QUESTIONS



laura and john arnold foundation®





More than just data access,
sharing, and compliance

Norms

Communality

Open sharing

Universalism

Evaluate research on own merit

Disinterestedness

Motivated by knowledge and discovery

Organized skepticism

Consider all new evidence, even against one's prior work

Quality

Counternorms

Secrecy

Closed

Particularism

Evaluate research by reputation

Self-interestedness

Treat science as a competition

Organized dogmatism

Invest career promoting one's own theories, findings

Quantity

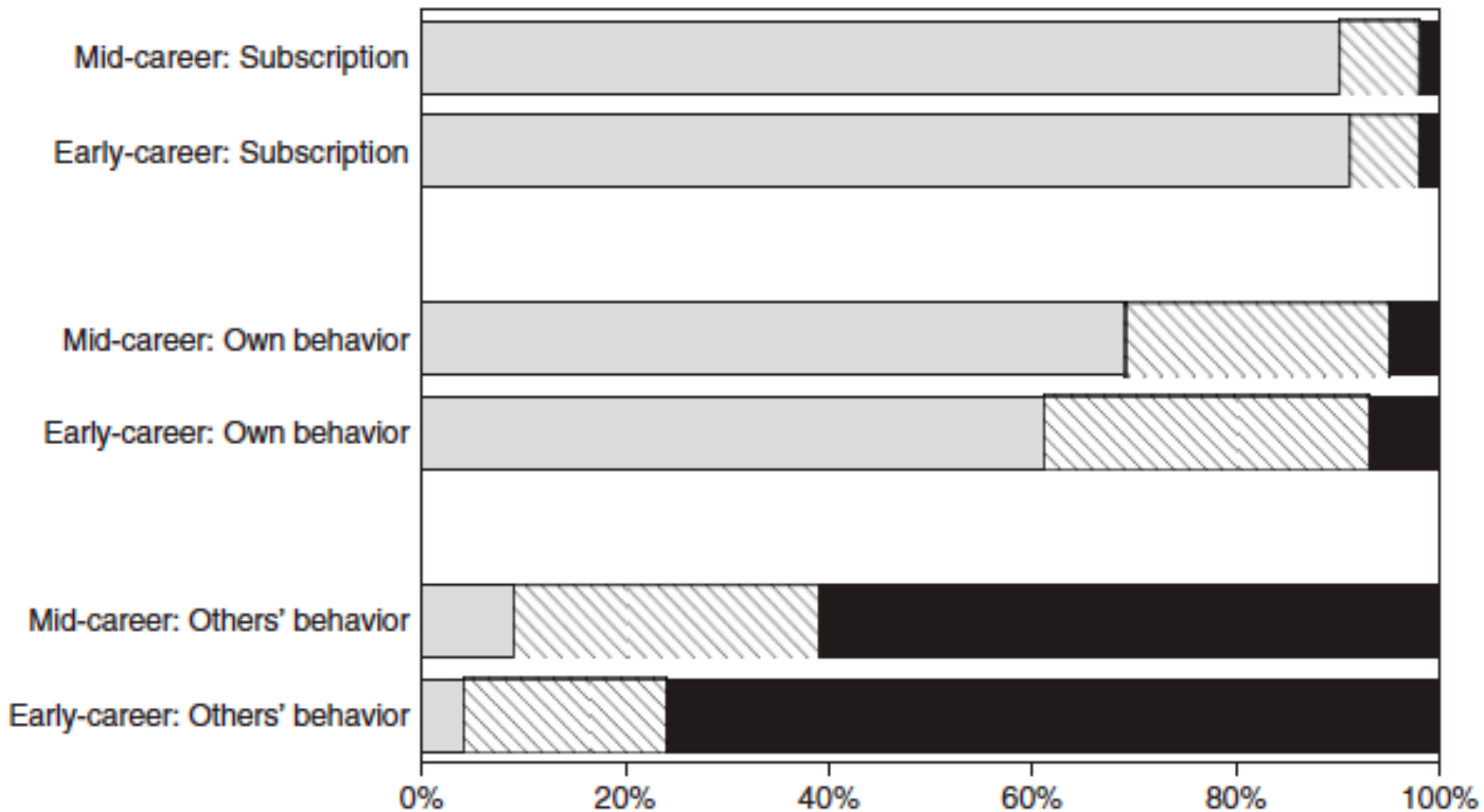


FIG. 3. Norm versus Counternorm Scores: Percent with Norm > Counternorm (dotted), Norm = Counternorm (striped), Norm < Counternorm (solid).

Technology to *enable* change

Training to *enact* change

Incentives to *embrace* change

Free

Open

Inclusive

Technology to *enable* change

Simplified scientific collaboration

Powerful end-to-end support for your research.



FREE. GET STARTED TODAY.

Full Name

Contact Email

<http://osf.io/>

free, open source

Put data, materials, and code on the OSF

Lepadogaster.stl

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[Revisions](#)

 Search



 Component: Lepadogaster lep...


–  OSF Storage


 Lepadogaster.stl

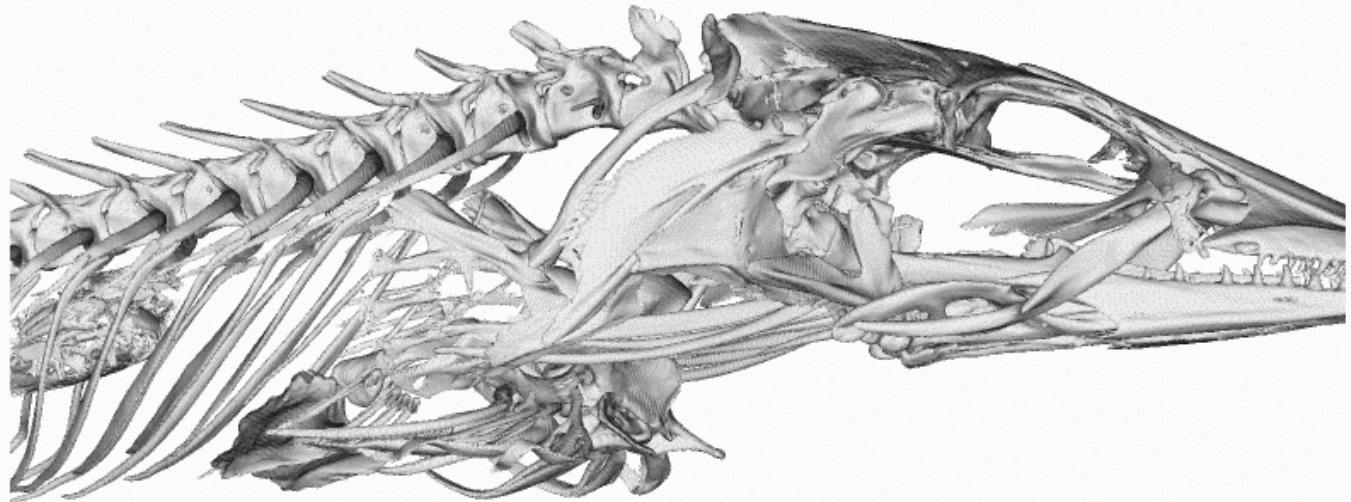
+  low res slice data

 oblique.jpg

+  slice data

 standard headshot.jpg

 ventral.jpg



Automate versioning

BadgesDisclosureTemplate.docx

Delete

Check out

Share

Download

View

Revisions

Search

Project: Badges to Acknowledge Open Pr...

OSF Storage

badges.Article-Variation1.pdf

badges.Article-Variation2.pdf

badges.Article-Variation3.pdf

badges.Article-Variation4.pdf

BadgesDisclosureTemplate.docx

data_large_color.png

data_large_color.tif

data_large_gray.png

data_large_gray.tif

data_small_color.png

data_small_color.tif


data_small_gray.png





Revisions

Version ID	Date	User	Download	MD5	SHA2
2	2015-02-18 08:55 AM	Andrew Sallans	9	5449614541941c1964	c5b9946df2a8728a44:
1	2015-01-26 02:40 PM	Sara Bowman	2	ddef6d58cd6a9b53ee	b4b6e30e7140c76f58:

With hashes




Get a persistent identifier

 Open Science Framework

My DashboardBrowse ▾Help ▾  Andrew Sallans  


Badges to Acknowledge Open PracticesFilesWikiAnalyticsRegistrationsForksContributorsSettings

Badges to Acknowledge Open Practices

Make PrivatePublic 14 3

Contributors: Ben B. Blohowiak, Johanna Cohoon, Lee de-Wit, Eric Eich, Frank J. Farach, Fred Hasselman, Alex O. Holcombe, Macartan Humphreys, Melissa Lewis, Brian A. Nosek, Jonathan Peirce, Jeffrey R. Spies, Chris Seto, Sara Bowman, Don Green, Gustav Nilsson, Jon Grahe, Stephanie Wykstra, Alicia Hofelich Mohr, **Andrew Sallans**, Roger Giner-Sorolla, Timothy H. Parker, Wolfgang Forstmeier, Shinichi Nakagawa

Date created: 2013-02-19 12:19 PM | Last Updated: 2015-10-22 10:56 AM

Category: Project 


Description: The aim is to specify a standard by which we can say that a scientific study has been conducted in accordance with open-science principles and provide visual icons to allow advertising of such good behaviours.

License: No license

Wiki

Openness is a core value of scientific practice. There is no central authority determining the validity of scientific claims. Accumulation of scientific knowledge proceeds via open communication with the community. Sharing evidence for scientific claims facilitates critique, extension, and application. Despite the importance of open communication for scientific progress, present norms do not provide strong incentives for individual researchers to share data, material...

Citation


osf.io/tvyxz 

APA
Blohowiak, B. B., Cohoon, J., de-Wit, L., Eich, E., Farach, F. J., Hasselman, F., ... Nakagawa, S. (2015, October 22). Badges to Acknowledge Open Practices. Retrieved from osf.io/tvyxz

MLA
Blohowiak, Benjamin B et al. "Badges to Acknowledge Open Practices." Open Science Framework, 22 Oct. 2015. Web.


Chicago
Blohowiak, Benjamin B, Johanna Cohoon, Lee de-Wit, Eric Eich, Frank J Farach, Fred Hasselman, Alex O Holcombe, et al. 2015. "Badges to Acknowledge Open Practices." Open Science Framework. October 22. osf.io/tvyxz.

More

Citation Style (e.g. "APA") 

<https://osf.io/tvyxz/>

Share your work

 Open Science Framework

My DashboardBrowseHelpAndrew Sallans

Badges to Acknowledge Open PracticesFilesWikiAnalyticsRegistrationsForksContributorsSettings

Make PrivatePublic143

Badges to Acknowledge Open Practices

Contributors: Ben B. Blohowiak, Johanna Cohoon, Lee de-Wit, Eric Eich, Frank J. Farach, Fred Hasselman, Alex O. Holcombe, ~~Morgan Humphrey~~, Melissa Lewis, Brian A. Nosek, Jonathan Peirce, Jeffrey R. Spies, Chris Seto, Sara Bowman, Don Green, Gustav Nilsson, Jon Grahe, Stephanie Wykstra, Alicia Hofelich Mohr, **Andrew Sallans**, Roger Giner-Sorolla, Timothy H. Parker, Wolfgang Forstmeier, Shinichi Nakagawa

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Citation

osf.io/tvyxz

Components

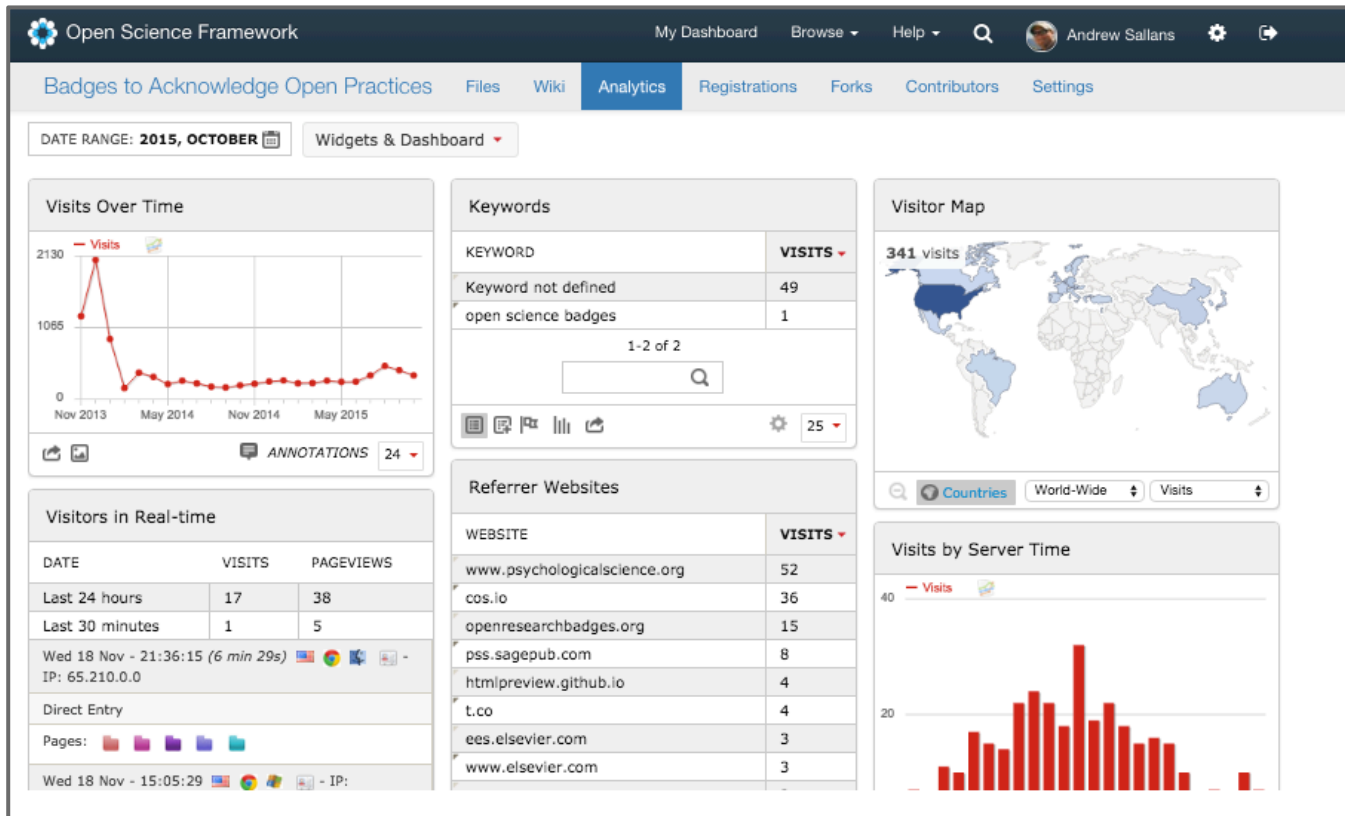
Materials from Endorsers

Cohoon & Sallans

12 contributions

Tags

See the impact



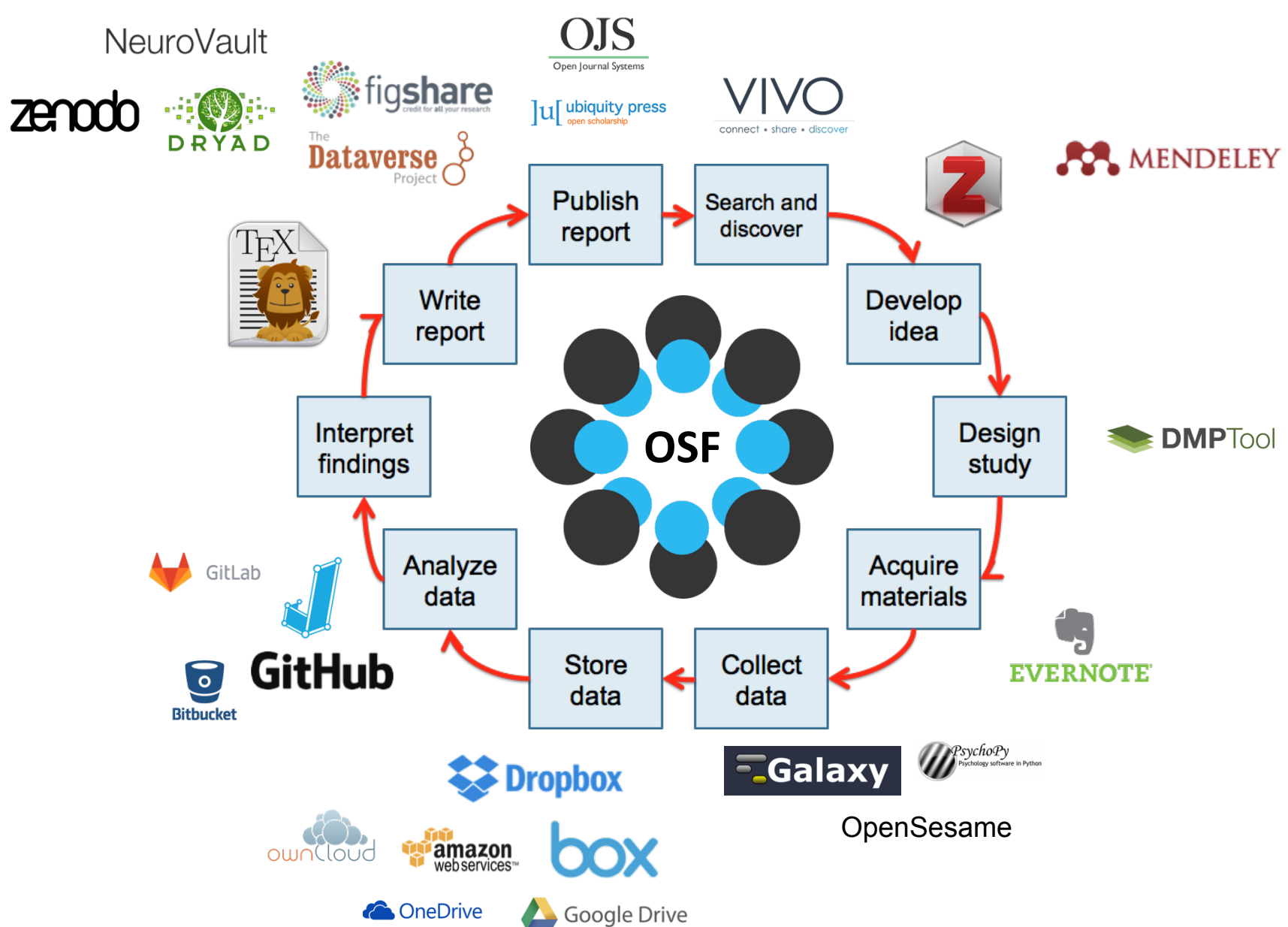
Andrew Sallans

Contributors Settings

Search

	Size	Downloads
	42.1 kB	274
	38.0 kB	114
	46.3 kB	130
	47.8 kB	173
	19.9 kB	11
	3.1 kB	94
	676.0 kB	57
	3.0 kB	62
	672.4 kB	54
	1.4 kB	74
	598.7 kB	55
	1.4 kB	49
	598.0 kB	52
	3.6 kB	65

File downloads



29 grants to develop open tools and services: <https://cos.io/pr/2015-09-24/>

Connecting the workflow
is critical to *enabling change*

NeuroVault

zenodo



The
Dataverse
Project

OJS

Open Journal Systems

ubiquity press
open scholarship

VIVO
connect • share • discover



**Institutional
repositories
and
reporting**



Write
report

Publish
report

Search and
discover

Develop
idea

**Grant
administration
and CRIS**

Design
study



**IRB
processes**

Acquire
materials



EVERNOTE

Collect
data

Store
data

Analyze
data

Interpret
findings



GitLab



GitHub



Bitbucket

**HPC
clusters**



**Local data
stores**

**Data
management**



OpenSesame

**Custom data
collection
workflows**

OSF for Institutions

Joint development with:



Custom urls for institutions



Open Science Framework

Browse ▾

Help ▾



Sign in ▾

Simplified scientific collaboration

Powerful end-to-end support for your research.



Example

<http://osf.nd.edu/>

Integrated authentication and affiliation

Browse ▾ Help ▾ 🔍 Sign in ▾

Email

Password

Login

Forgot password?

Institutional landing pages

The screenshot displays the Open Science Framework (OSF) interface for the institution of Notre Dame. The top navigation bar includes the OSF logo, the institution name, and user options like 'Dashboard', 'Browse', 'Help', and a search icon. The main header features the Notre Dame logo and a brief description: 'This is an institution. This is a small blurb about this institution. Cool, right?'.

Below the header, the 'All My Projects' section is visible. On the left, there are filters for 'Collections' (All Projects, All Registrations, Bookmarks (0)) and 'Contributors' (Henrique (7)). The main table lists projects with columns for Name, Contributors, and Modified. The project 'Project with things' is highlighted.

On the right, a detailed view of the 'Project with things' is shown, including an 'Activity' tab. The activity log shows several updates by Henrique, such as changing the title and primary institution. A red circle and arrow highlight the activity log section.

Name	Contributors	Modified
Project with things	Henrique	an hour ago
Biology Worskhop	Henrique	a few seconds ago
Lab Notes 1	Henrique	15 minutes ago
The Life of Pablo	Henrique	25 minutes ago
Lab Notes 2	Henrique	15 minutes ago
TEST	Henrique	3 days ago
Physics Lab	Henrique	11 minutes ago

Project with things Activity Log:

- Henrique changed the title from "oioioio" to "Project with things" (2016-02-18 02:37 PM)
- Henrique changed the primary institution in Project with things from None to Notre Dame. (2016-02-17 10:57 AM)
- Henrique removed Virginia Tech as the primary institution in Project with things. (2016-02-17 10:57 AM)
- Henrique changed the primary institution in Project with things from None to Virginia Tech. (2016-02-16 04:31 PM)

Workflow activity across
all affiliated projects

Institutional affiliation on project pages

The screenshot displays the Open Science Framework (OSF) interface. At the top, the navigation bar includes the OSF logo, the text 'Open Science Framework', and links for 'Dashboard', 'Browse', 'Help', a search icon, a user profile for 'Henrique', and settings. The main header features the Notre Dame logo and name, with a brief description: 'This is an institution. This is a small blurb about this institution. Cool, right?'.

On the left sidebar, there are sections for 'All Projects', 'Collections' (with links to 'All Projects', 'All Registrations', and 'Bookmarks (0)'), 'Contributors' (listing 'Henrique (7)'), and 'Tags'. The main content area shows a table of projects filtered by the search term 'Lab'. The table has columns for 'Name', 'Contributors', and 'Modified'. The projects listed are 'Lab Notes 1', 'Lab Notes 2', and 'Physics Lab', all contributed by 'Henrique' and modified '12 minutes ago' or '8 minutes ago'. A red circle highlights the table, and a red arrow points from the search input field to it.

On the right, a sidebar for the selected project 'Project with things' shows tabs for 'Information' and 'Activity'. It displays metadata: 'Visibility : Public', 'Category: project', and 'Last Modified on: 2016-02-18 02:37 PM'. Below this, there is a 'Jump to Page' section with links for 'Wiki', 'Files', and 'Settings'.

Filtered search across affiliated projects









Name	Contributors	Modified
Lab Notes 1	Henrique	12 minutes ago
Lab Notes 2	Henrique	12 minutes ago
Physics Lab	Henrique	8 minutes ago

Group permissions (in later release)

- Groups are collections of users
- Ability to apply a group to a project and specify permissions
- Changes to groups are inherited by projects

Contributors + Add

Drag and drop contributors to change listing order.

Name	Permissions ?	Bibliographic Contributor ?
 Ben B. Blohowiak	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Johanna Cohoon	Administrator	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Lee de-Wit	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Eric Eich	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Frank J. Farach	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Fred Hasselman	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Alex O. Holcombe	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
 Macartan Humphreys	Read + Write	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

OSF APIv2 Documentation

Welcome to the fine documentation for the Open Science Framework's API! Please click on the **GET /v2/** link below to get started.

v2[Show/Hide](#) | [List Operations](#) | [Expand Operations](#) | [Raw](#)

GET	/v2/	Welcome to the V2 Open Science Framework API
GET	/v2/applications/	Get a list of API applications (eg OAuth2) that the user has registered
POST	/v2/applications/	Get a list of API applications (eg OAuth2) that the user has registered
GET	/v2/applications/{client_id}/	Get information about a specific API application (eg OAuth2) that the user has registered
PUT	/v2/applications/{client_id}/	Get information about a specific API application (eg OAuth2) that the user has registered
PATCH	/v2/applications/{client_id}/	Get information about a specific API application (eg OAuth2) that the user has registered
DELETE	/v2/applications/{client_id}/	Get information about a specific API application (eg OAuth2) that the user has registered
POST	/v2/applications/{client_id}/reset/	Resets client secret of a specific API application (eg OAuth2) that the user has registered
GET	/v2/nodes/	Nodes that represent projects and components
POST	/v2/nodes/	Nodes that represent projects and components
PUT	/v2/nodes/	Nodes that represent projects and components
PATCH	/v2/nodes/	Nodes that represent projects and components
DELETE	/v2/nodes/	Nodes that represent projects and components
GET	/v2/nodes/{node_id}/	Details about a given node (project or component)
PUT	/v2/nodes/{node_id}/	Details about a given node (project or component)

API Docs

<https://api.osf.io/v2/docs/>

Training to *enact* change

Statistical & Methodological Consulting

Scientists can improve the replicability of their own work through careful documentation, adherence to standards, and the use of open tools. We answer questions and provide training on open and reproducible tools, methodologies, and workflows. Some examples:

- ✓Using R
- ✓Conducting power analyses
- ✓Using the OSF
- ✓Learning Github
- ✓Conducting meta-analyses
- ✓Preregistering analysis plans

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Free training on how to make
research more reproducible

http://cos.io/stats_consulting





COS Statistical and Methodological Consulting /

Online Materials

Contributors: [Courtney Soderberg](#), [Geneva T. Dodson](#)

Date created: 2015-04-19 06:31 PM | Last Updated: 2016-01-24 11:25 PM

Category: Project

License: CC-BY Attribution 4.0 International

Wiki



This project contains all the materials (slidedecks, code, examples, etc.) related to the materials posted on the Center for Open Science's youtube channel. Below is an index of all the current material.

- Confidence Intervals
 - [Intro to Calculating Confidence Intervals](#)
 - [Confidence Intervals for ANOVAs](#)
- Power
 - [Consequences of underpowered studies](#)
 - [Intro to Power in R](#)
 - [Repeated Measures ANOVA in G*Pow...](#)

Citation

Components



Intro to Power

[Soderberg](#)



13 contributions

Issues Arising from Underpowered Studies

Courtney Soderberg
Center for Open Science
Statistical and Methodological Consultant



Consequences of Low Statistical Power



Center for Open Science


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203 views

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Incentives to *embrace* change



Transparency and Openness Promotion (TOP) Guidelines

Low barrier to entry

Modular

Agnostic to discipline

TOP Guidelines

<http://cos.io/top>

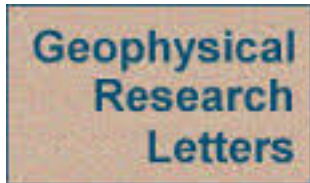
1. Data citation
2. Design transparency
3. Research materials transparency
4. Data transparency
5. Analytic methods (code) transparency
6. Preregistration of studies
7. Preregistration of analysis plans
8. Replication

TOP Signatories

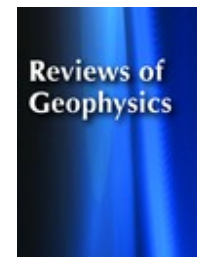
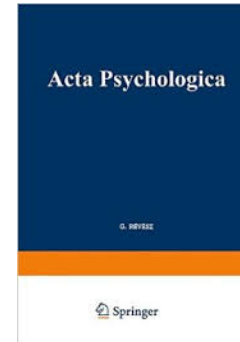
Journals, Organizations, Funders

Endorsement of principles + commitment to review for adoption

Over
538 journals
+
58 orgs



THE ROYAL SOCIETY



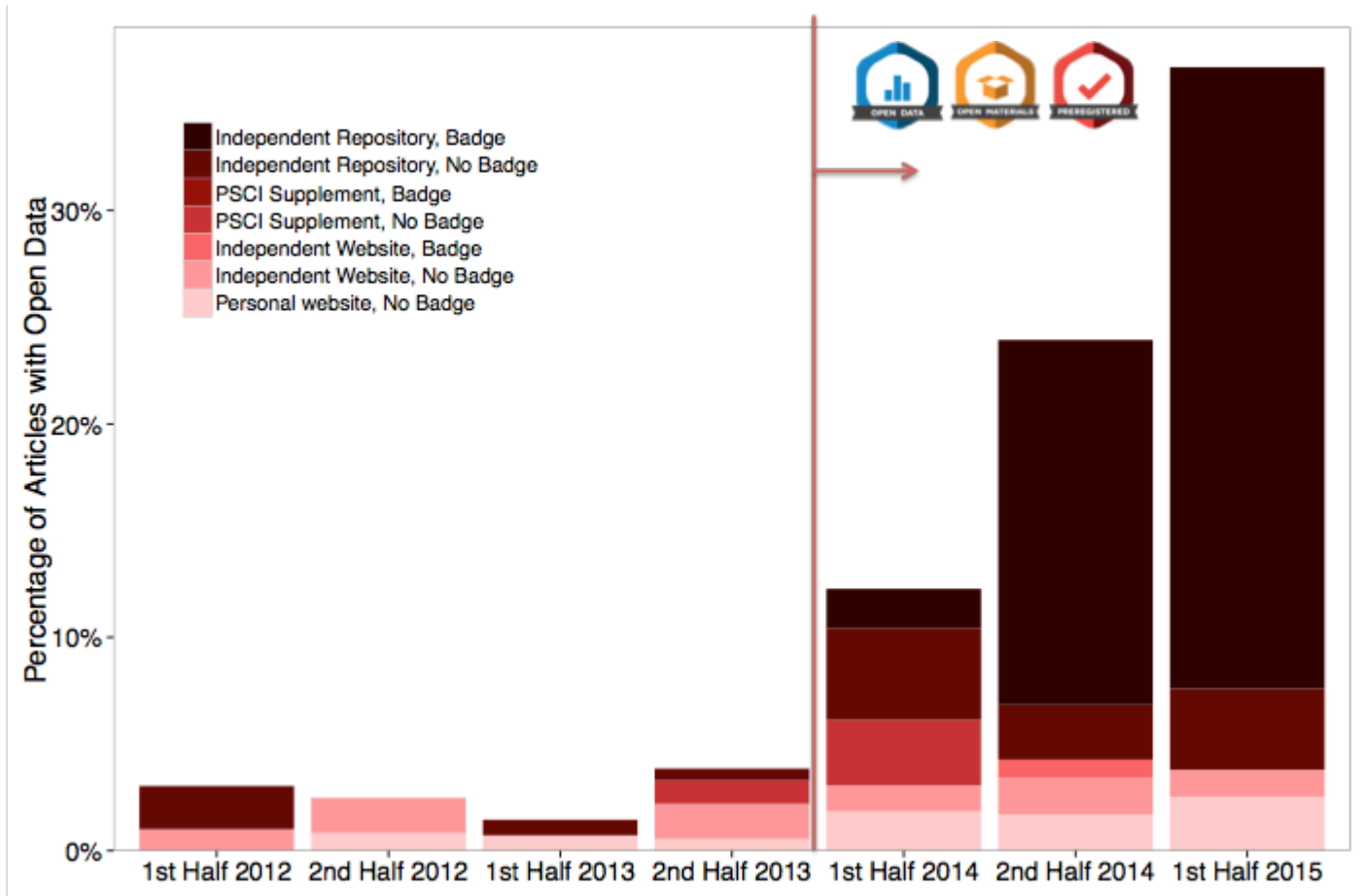
top@cos.io



Signals: Making Behaviors Visible Promotes Adoption



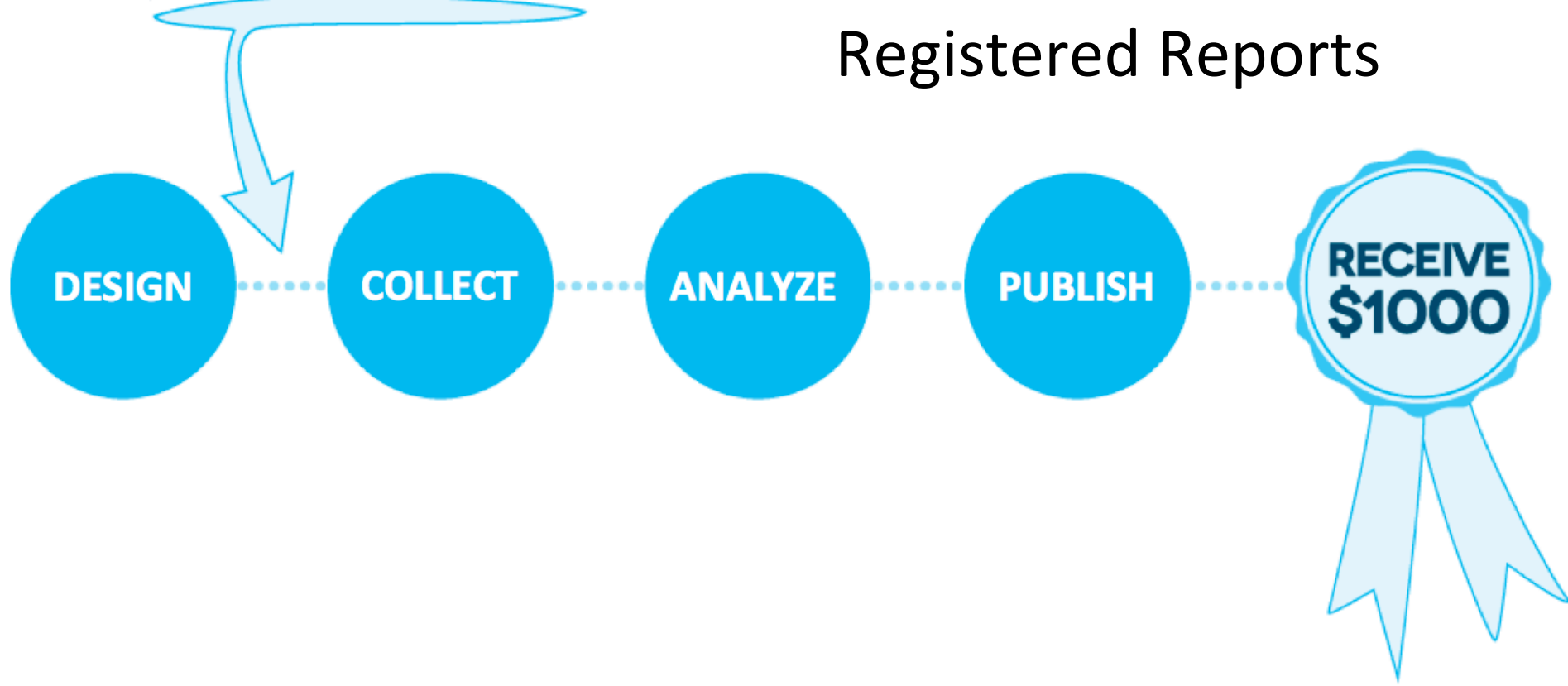
Data Availability in *Psychological Science*



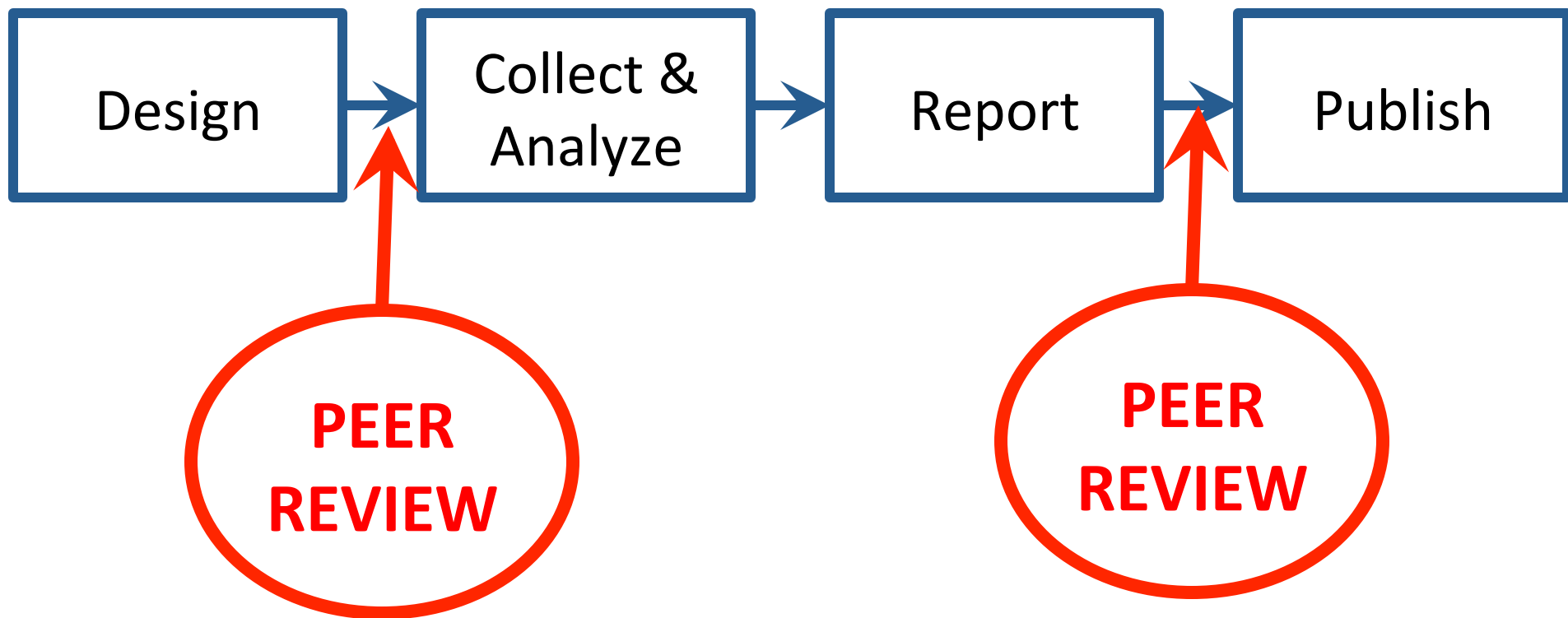
The \$1,000,000 Preregistration Challenge

Endorse TOP Guidelines
Badges for Open Practices
Registered Reports

PREREGISTER



Registered Reports



What can *you* do?

Connect your services to
make it *easier* to be more open
and reproducible

Meet researchers where they
are and help them find
immediate benefit in training

Partner with us to promote
incentives that help *realign*
values and practices

Find this presentation at

<https://osf.io/wvd7n>

The screenshot displays the Open Science Framework (OSF) web interface. At the top, the navigation bar includes the OSF logo, the text 'Open Science Framework', and user options like 'My Dashboard', 'Browse', 'Help', and a profile for 'Andrew Sallans'. Below this, a secondary navigation bar lists various categories: 'Presentations' (selected), 'Files', 'Wiki', 'Analytics', 'Registrations', 'Forks', 'Contributors', and 'Settings'. The main content area shows the title 'Sallans.IDCC.2016.02.23.pdf' with action buttons for 'Delete', 'Check out', 'Share', 'Download', 'View', and 'Revisions'. On the left, a sidebar titled 'Component: Presentations' lists 'OSF Storage' and a series of files, including several .pptx files and two .pdf files. The central part of the image is a preview of the presentation itself, which features the 'COS CENTER FOR OPEN SCIENCE' logo at the top. The main text of the presentation reads 'Strategies for improving openness and reproducibility' by 'Andrew Sallans' from the 'Center for Open Science'. The presentation is shown as a 41-page document, currently on page 1.

Questions: contact@cos.io