ACCELERATING
OPEN SCIENCE
TOGETHER

IMPACT REPORT 2021

CENTER FOR
OPEN SCIENCE

Our mission is to increase openness, integrity, and reproducibility of research.

These are the core values of scholarship and practicing them is presumed to increase the efficiency of acquiring knowledge.

For the Center for Open Science (COS) to achieve our mission, we must drive change in the culture and incentives that drive researchers' behavior, the infrastructure that supports their research, and the business models that dominate scholarly communication.

This culture change requires simultaneous movement by funders, institutions, researchers, and service providers across national and disciplinary boundaries. Despite this, the vision is achievable because openness, integrity, and reproducibility are shared values, the technological capacity is available, and alternative sustainable business models exist.

COS's philosophy and motivation is summarized in its new **strategic plan** and in scholarly articles outlining a vision of scientific utopia for research communication and research practices.

A Year of
Open Science Acceleration

Amid the social and health challenges, 2021 was another remarkable year for open science. The research culture is continuing to shift toward openness as the default. However, the culture does not change by itself. And, actions in isolation are insufficient to spur culture change.

The success to date is due to the collective, collaborative actions of researchers and stakeholders committed to improving research practice. Their impact is much greater by working together.

These change agents bring awareness to the challenges that create friction in research progress. They are identifying solutions and adapting training to ensure that those solutions are fit for purpose across disciplines and regions. They are setting new norms, changing incentives, and updating policies to make open science normal science. Improving the research culture is a shared responsibility and a shared opportunity.

Examples of accelerating open science collaboratively are everywhere, including in our 2021 Impact Report:

- As open source, public goods infrastructure, the Open Science Framework is providing customized solutions on a shared platform for institutions like Vrije University, funders like Focused Ultrasound Foundation, and grassroots communities like PsyArXiv to increase transparency and rigor in their communities.

- Large-scale collaborative research projects like SCORE and the Reproducibility Project: Cancer Biology reflect the efforts of hundreds of researchers and are producing insights about the state of research practice and opportunities to improve assessment of research credibility.

- Community action projects like the NSF-funded STEM Education Hub, Metascience Conference, the Global Flourishing project, and TOP Factor are increasing visibility of open practices, setting new community norms, and providing training and knowledge sharing to accelerate adoption.

Thank you for your individual and collective actions to change the default to open so that the scientific ideals are manifest and rewarded in everyday practice.

Brian Nosek
Co-founder and Executive Director
COS

Alison Mudditt
Board Chair
COS

COS Receives
Einstein Foundation Award

In November, COS was selected as the inaugural institutional recipient of the **Einstein Foundation Award** for Promoting Quality in Research.

The award "aims to provide recognition and publicity for outstanding efforts that enhance the rigor, reliability, robustness, and transparency of research in the natural sciences, the social sciences, and the humanities, and stimulate awareness and activities fostering research quality among scientists, institutions, funders, and politicians." ■

EINSTEIN FOUNDATION AWARD

Watch the Einstein Foundation's **video** highlighting COS

Brian Nosek
Co-founder and Executive Director
COS

Nici Pfeiffer
Chief Product Officer
COS

Tim Errington
Senior Director of Research
COS

Strategy for Culture Change

Make it Required

TOP Factor elevates visibility of journal and funder transparency policies. Comparative data rewards progressive policymakers.

Make it Rewarding

Journals and funders collaborate to realign incentives with **Rigor and Transparency** initiatives using **Registered Reports**.

Make it Normative

Custom-branded registries enable communities to cultivate **preregistration norms** and improve rigor.

Make it Easy

OSF Registries streamline the registration process with easy-to-use workflows.

Make it Possible

OSF enables preregistration. New registration formats broaden inclusion of research methodologies such as qualitative research, secondary data analysis, longitudinal investigations, systematic reviews, and more.

Policy

Incentives

Communities

User experience

Infrastructure
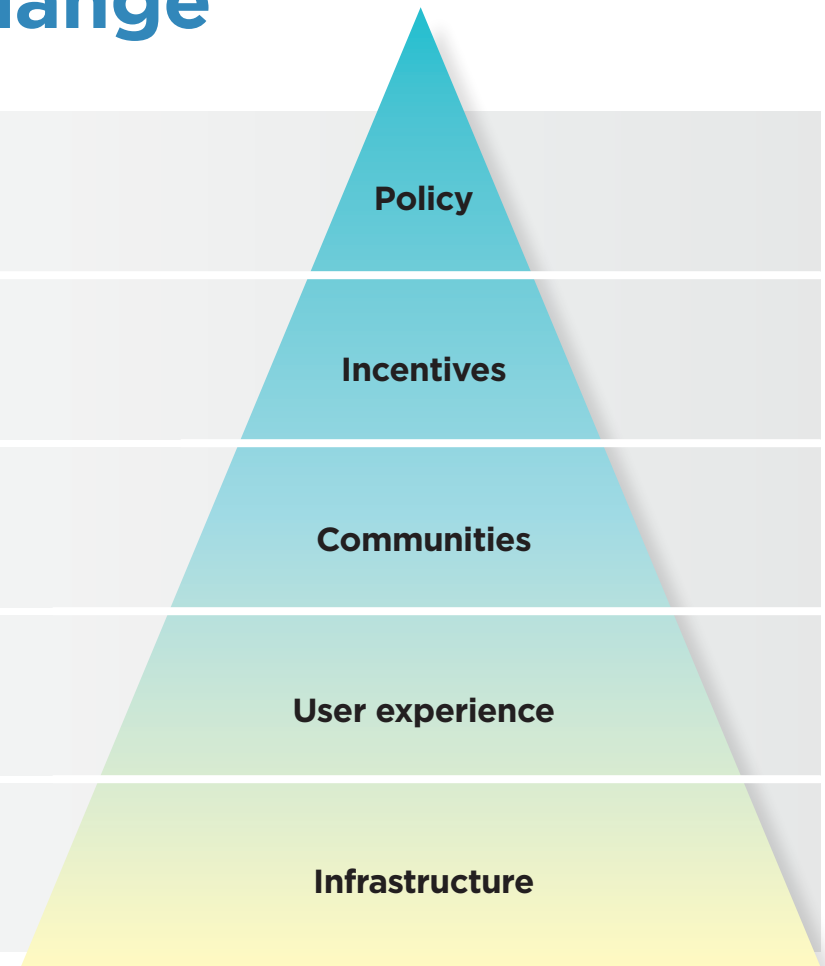
COS's theory of change strategy for research culture and behavior change requires five levels of intervention represented by the pyramid above. These levels are progressive, reflecting the fact that successful implementation of higher levels depends on successful implementation of lower levels. The theory of change is illustrated above in the context of a preregistration as one of the open behaviors that COS promotes. ■

Open Science Infrastructure
Enhances the Entire Research Lifecycle

Infrastructure is a key component of the COS theory of change to enable transparency and openness at every stage in the research process.

Technology that empowers communities to adopt new practices advances credible and reproducible research and promotes accelerated cures, rapid dissemination of knowledge, and a culture shifted toward more open and rigorous research. The Open Science Framework (OSF), free to researchers, is an open-source collaborative management software for transparency and rigor during planning, conducting, reporting, and discovery of research and is utilized by research institutions around the world. ■
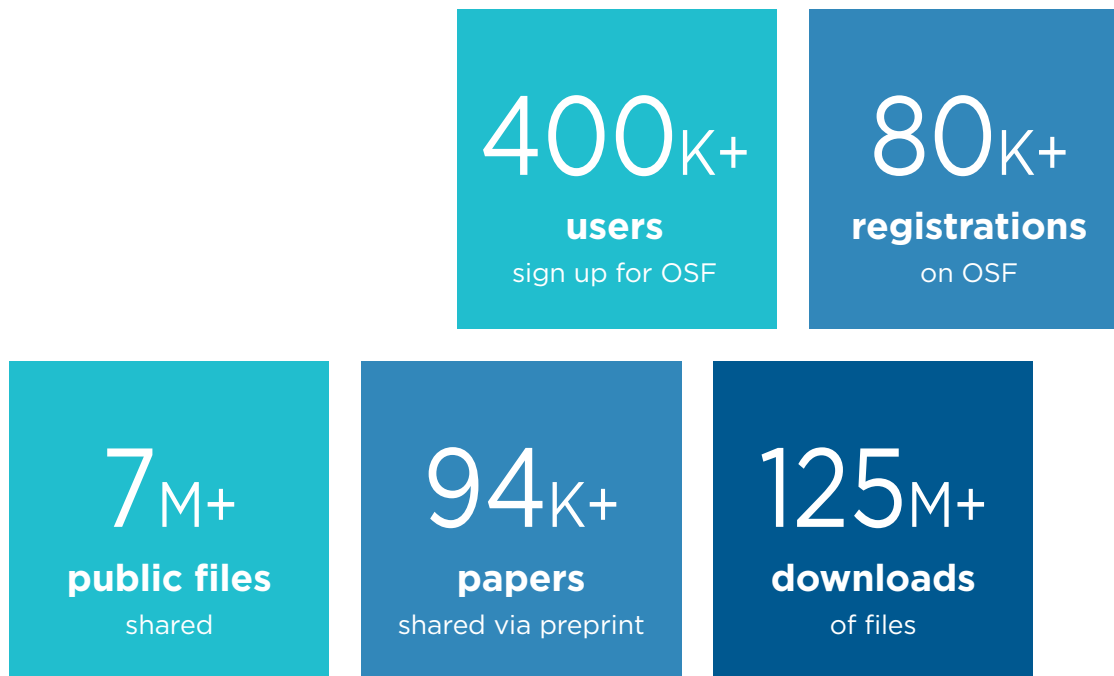
" The Vrije Universiteit Amsterdam is committed to facilitating and promoting open science research practices. In 2021, we have partnered with OSF to allow our researchers to manage their research transparently. For 2022, we are looking forward to exploring integrations between OSF and our other tools and storage solutions."

Dr. Sander Bosch
Open Science Coordinator, University Library
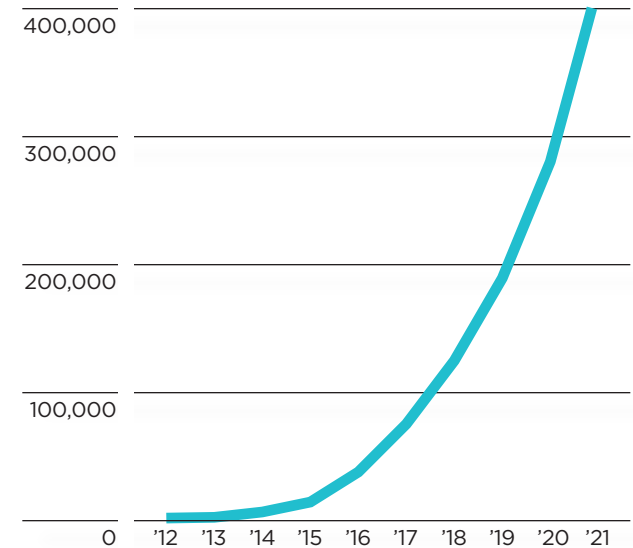Vrije Universiteit Amsterdam

Open Practices Advance
Across OSF

Participation in open practices continues to advance across OSF, achieving a milestone of 400,000 users in 2021 on OSF planning, sharing, collaborating, and discovering open research. OSF's registered users are leading by example to improve openness, integrity, and reproducibility of research. Their adoption is having a viral impact as indicated by OSF's non-linear growth every year since it launched in November 2012. ■

400K+ users sign up for OSF	**80K+** registrations on OSF
7M+ public files shared	**94K+** papers shared via preprint
	125M+ downloads of files

Registered OSF Users

Cumulative

Infrastructure Improvements
Accelerates Open Practices

Planning research with transparency

and rigor, and to be open by design is a critical step in the norms and practices among communities. By having infrastructure that supports customization standards and workflows by communities, researchers can have lower barriers to practicing open and rigorous research at all stages of the lifecycle.

COS works closely with many communities and stakeholders to gather input and feedback to improve the infrastructure, workflows, and features on OSF. In 2021, we streamlined the preregistration workflow and interfaces. To encourage adoption of preregistration practices, we added an easier path for creating a registration without a project and improved discovery and navigation of registrations is now available.

Reducing the burden on researchers means understanding the realities of research and the need to transparently reflect changes against the planned activities. The registration workflow now advances research assessment and increases transparency with the ability to update your registration on OSF. ■

OSF REGISTRIES

Partnering with Internet Archive
on Open Science Infrastructure

"Center for Open Science is an invaluable organization in the scientific and knowledge production ecosystem and is providing critical nonprofit, mission-driven, open services and infrastructure to ensure access, transparency, and reproducibility in research.

With our shared values and goals of perpetual access to knowledge, Internet Archive has been excited to collaborate with COS through both strategic partnerships and technical integrations to ensure that research outputs are archived and available into the future to support new discoveries. We look forward to expanding our work together to further open science, open access, and open infrastructure for the public good."

Jefferson Bailey
Director, Archiving & Data Services
Internet Archive

One of the important aspects of open research is that it is preserved and accessible across geographies and time. To maximize the discovery and reuse of research, we take responsibility for ensuring preservation of public research outputs.

Internet Archive partnered with COS through an award from Institute of Museum and Library Services to complete **a project to develop an open source pipeline** for preserving open data and preregististrations. Now public OSF registrations containing study designs and analysis plans are preserved on Internet Archive through a streamlined pipeline. ■

Creating
Community Connections

As part of our theory of change strategy, COS offers researchers tools and services to make research better, more efficient, and more reproducible. It is important to create engagement with research communities as researchers are more likely to adopt reproducible practices when they are backed by community leadership and support. Groups, institutions, and funders partner with COS to provide their researchers with open infrastructure, methods, and training. ■

"The **STEM Education Hub** connects researchers with resources to engage with open science practices for the first time. We help build communities through unconferences—where the participants set the agenda—and through knowledge sharing in the **Open Scholarship Knowledge Base**."

Marcy Reedy
Community Manager
COS

Focused Ultrasound Foundation
Partnership on Open Research Repository

> "Increasing the accessibility and reproducibility of focused ultrasound research are priorities for us, and we are grateful to the **Center for Open Science** for partnering with us to make these resources available to our community."

Emily White, M.D.
Managing Director, FUS Partners
Focused Ultrasound Foundation

Focused Ultrasound Foundation has taken a new step toward its mission to accelerate scientific discovery by launching a **body of scholarship** dedicated to open and transparent data, outputs, study materials, and more from the field of focused ultrasound research.

In 2017, the Focused Ultrasound Foundation announced the launch of the **FocUs Archive** preprints repository as part of the organization's initiative to promote expedient communication, collaboration, and open discoverability of rigorous research among the focused ultrasound community.

In April 2021, the Focused Ultrasound Foundation and COS announced the **Focused Ultrasound Foundation Collection**, an open research repository where clinicians and researchers can browse existing data and materials, build on findings, or contribute their own work to the growing collection of rigorous scholarship from the field.

The Collection is built on the **OSF Collections** infrastructure, and offers researchers an easy-to-use discovery and submission interface. Visitors can quickly search the collection by program area (Clinical, Preclinical, Technical, etc.) and identify projects as active or completed. Robust metadata fields ensure viewers find the data and outputs relevant to their searches. ■

Europe PubMed Central
Now Indexing PsyArXiv Preprints

> **Indexing PsyArXiv in Europe PMC means that psychological preprints will now be more discoverable than ever before. PsyArXiv users will benefit from the increased audience for their work."**
>
> **Katherine S. Corker**
> Executive Officer
> Society for the Improvement of Psychological Science
> Associate Professor
> Grand Valley State University

PsyArXiv preprints are now indexed in **Europe PubMed Central** (Europe PMC), an open global archive of more than 38.6 million scholarly publications in the life sciences. COS is thrilled to see the inclusion of PsyArXiv's more than **14,000 preprints** in Europe PMC, and notes the significance of the index in accelerating scholarly communication among the psychological science research community worldwide.

The move by Europe PMC signals the growing trust in the credibility of preprints and rewards PsyArXiv authors' dedication to make their underlying data and supplemental materials openly available.

COS's decision to begin registering preprint **DOIs with Crossref** in 2018 paved the way for greater interoperability between software ecosystems, allowing repositories like Europe PMC to maintain global identifiers, effectively index content, and advance the dissemination of open access research. ■

> **As the scholarly communication ecosystem shifts toward more acceptance and trust in preprints as a path to more open and accelerated dissemination of research findings, the OSF Preprints infrastructure will continue to focus on interoperability to enhance discoverability and reuse of preprints."**
>
> **Nici Pfeiffer**
> Chief Product Officer
> COS

Advancing Open Science
Education Research

Disseminate
Communicate
Teach
Publish

Change
Motivate
Educate
Recognize

Plan
Archive
Document
Store

Theorize
Synthesize
Deduct
Predict

Analyze
Infer
Analyze
Process

Plan
Design
Pre-register
Sample

Collect
Implement
Deploy
Observe

Open Scholarship Knowledge Base (OSKB)

A growing community with a library of open education resources, the OSKB saw almost 500 unique resources added in 2021.

Unconference on Open Scholarship Practices in Education Research

The 2021 Unconference featured participant-led sessions analyzing the current state of open scholarship practice and interactive hackathons seeking solutions to identified problems with over 500 attending and 28 virtual sessions.

Open Scholarship Survey (OSS)

The OSS is a standard, modular survey to assess open scholarship attitudes, perceptions, and behavior of researchers. Topics assessed include sharing data, materials, and code; preregistration; preprints and open access; replication, reproduction, and robustness; reporting null results; and perceived criteria for hiring, promotion, grants, and awards.

Educational Training and Webinars

Educational training to support the advancement of open science practices in the educational researcher community was held continuously throughout 2021.

STEM Education Hub at Academic Conferences

To engage the community and broaden awareness, presentations about the STEM Education Hub were included in several major 2021 academic conferences.

Cultural Change
Through Research Quality

Effective cultural change requires reliable evidence for what needs to change and how best to change it. The Metascience team conducts research to identify existing barriers to openness, integrity, and reproducibility and evaluates interventions to mitigate those barriers.

Two large-scale projects examining the current state of research credibility were the main focus of the year's effort: the Reproducibility Project: Cancer Biology (page 13) and the ongoing SCORE project for the social-behavioral sciences (page 14). These projects serve as catalysts for engagement with substantive researchers about the challenges and opportunities to improve rigor, transparency, and replicability in their work. This occurs both as inclusive, collaborative projects that involve hundreds of researchers, and as signature research reports that attract substantial interest in the research community.

In addition to research on the state of the field, we contributed empirical research evaluating the effectiveness of interventions to improve research practice and evaluation of the communities readiness for change in adopting new practices. An example of this was a **study published this past year** that provided new evidence that Registered Reports (page 19) are associated with greater rigor and research quality compared with the standard publishing format. This initial evidence indicates that Registered Reports not only address publication bias, but may also improve research quality.

Collectively, the research conducted in the past year continues to provide evidence for developing, testing, and revising our theory of change. ■

Reproducibility Project
Cancer Biology Published in eLife

In December 2021, **eLife published the capstone outputs** of the **Reproducibility Project: Cancer Biology**, an eight-year effort to replicate experiments from 53 high-impact papers published between 2010 and 2012. The purpose of the project was to transparently assess the extent to which there are challenges for conducting replications and obtaining similar evidence of published findings in cancer biology research.

The project was led by Tim Errington and COS collaborated with **Science Exchange** to source labs to conduct the experiments. The team conducted a systematic process to select high-impact cancer research papers from high-profile journals such as *Nature*, *Science*, and *Cell*.

The first paper **"Challenges for Assessing Replicability in Preclinical Cancer Biology"** reports on the challenges confronted when preparing and conducting replications of 193 experiments from 53 papers. The second paper, **"Investigating the Replicability of Preclinical Cancer Biology,"** reports that replications provided much weaker evidence for the findings compared to the original experiments. ◼

REPRODUCIBILITY PROJECT
Cancer Biology

"We had challenges at every stage of the research process to design and conduct the replications. It was hard to understand what was originally done, we could not always get access to the original data or reagents to conduct the experiments, and model systems frequently did not behave as originally reported. The limited transparency and incomplete reporting made the efforts to replicate the findings much harder than was necessary."

Tim Errington
Senior Director of Research
COS

Systematizing Confidence
in Open Research and Evidence Project

3,966 **claims**
extracted in 2021

3,100 **claims**
extracted previously

Started in 2019, COS partnered with the Defense Advanced Research Projects Agency's (DARPA) program **Systematizing Confidence in Open Research and Evidence** (SCORE) with a three-and-a-half-year investment of more than $7.6 million. This program represents an investment by DARPA to assess and improve the credibility of social and behavioral science research.

DARPA identifies the purpose of SCORE is "to develop and deploy automated tools to assign 'confidence scores' to different SBS research results and claims. Confidence scores are quantitative measures that should enable a DoD consumer of SBS research to understand the degree to which a particular claim or result is likely to be reproducible or replicable."

If successful, consumers of scientific evidence—researchers, funders, policymakers, etc.—would have readily available information about the uncertainty associated with that evidence. An overview of the program goals and design is available as a **preprint**.

In 2021, COS completed extraction of scientific claims from a stratified sample of social behavioral science papers. In total 3,966 claims were extracted manually this year and combined with the 3,100 extracted claims from earlier in the program, has enabled confidence scores to be assigned by human forecasters and algorithms. Concurrently, COS worked with hundreds of researchers to conduct replications and reproductions on a subset of these extracted claims. The team **leverages the OSF** for this large-scale collaboration so all materials from the replication and reproduction efforts, including data, code, preregistrations, and final reports, can be made openly available. ■

Metascience 2021
Showcases Research Reform

In September 2021, COS co-hosted the **Metascience 2021 Conference** with the Research on Research Institute, the Association for Interdisciplinary Meta-Research and Open Science, and **nearly 50** funding, society, institutional, and advocacy partner organizations including the Templeton World Charity Foundation and the RoRI consortium. The virtual gathering to connect the study of science across disciplines, methodologies, and regions had nearly 3,000 attending, and showcased progress in research reform and chart priorities. ■
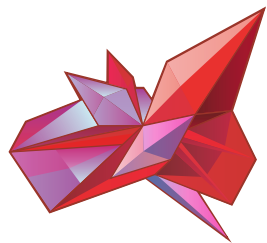
METASCIENCE 2021 CONFERENCE

2,958 attendees

10+ countries represented

49 sessions

223 speakers and moderators

Reengineering Incentives

> " We know that specific actions require specific recognition and support. All of our programs focus on aligning ideal standards with day-to-day incentives."

David Mellor
Director of Policy
COS

To improve the research culture, COS develops specific incentives that reward rigor and transparency in all stages of the research workflow. Getting published, getting cited, getting funded, and getting hired are the essential elements of a research career. We work to make sure that each of these steps are more possible with open research practices.

Registered Reports shift incentives to rigor and transparency for getting published. Making data, materials, and code citable increases the recognition of open practices. Funders partner with journals to directly support open practices and to streamline the process for authors. COS's leadership in promoting better incentives that are rooted in core principles of scientific inquiry are crucial to this cultural shift. ■

Stakeholders Reengineering Incentives
TOP Factor Upgraded

In November 2021, COS released a redesigned and easily navigable **TOP Factor website** that provides journal ratings based on evaluation of their policy alignment with the **Transparency and Openness Promotion Guidelines** (TOP Guidelines).

The new interface gives users a more interactive view of journal ratings, increases transparency of the scoring process, provides features for sharing groups of scored journals, and surfaces information about the specific journal's transparency policies.

Thanks to the efforts of many community collaborators, over 1,200 journals are now scored in **TOP Factor** and we continue to add more each month. ■
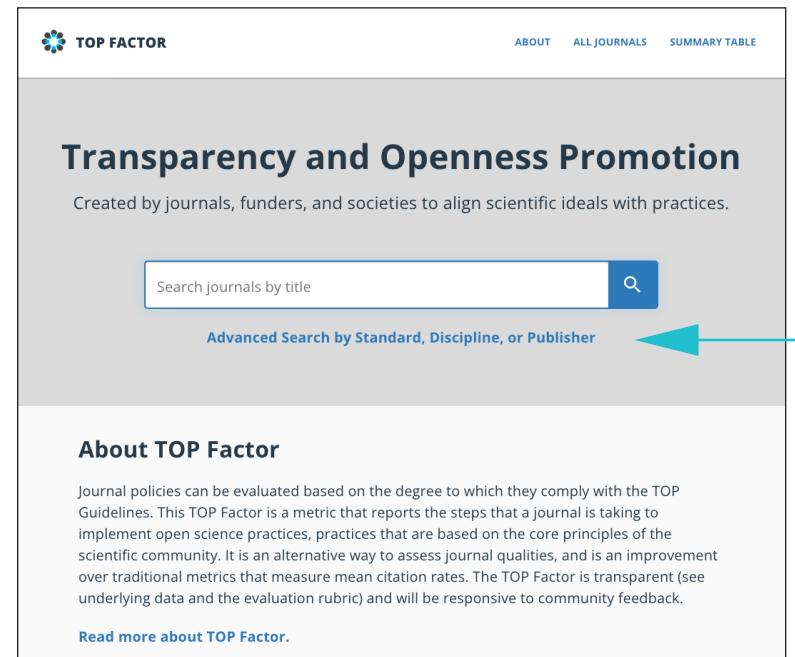
On the newly redesigned website the advanced search for journals can be done by Standard, Discipline, or Publisher.

Children's Tumor Foundation
Finalized Their Registered Reports
Grants Mechanism

Children's Tumor Foundation (CTF), in collaboration with PLOS ONE, finalized their successful Registered Reports initiative (launched in 2017) to increase rigor, openness, and transparency in the grant award and publication process. The project, **Drug Discovery Initiative Registered Reports** (DDIRR), encouraged applications in the 2021 cycle to provide funding for drug therapies used in the treatment of neurofibromatosis. This initiative supported increased scientific rigor and strengthened the quality of applications by combining funder-publisher efforts. A list of awarded DDIRR projects can be found on the **OSF**. ■

" At CTF we believe that transparency in research, sharing of data and resources are accelerators of scientific advancements. Understanding if our programs are somehow impacting the behavior of our community towards being more open is of the utmost importance for us."

Salvatore La Rosa
Chief Scientific Officer
Children's Tumor Foundation
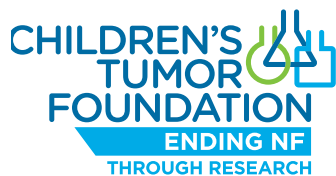
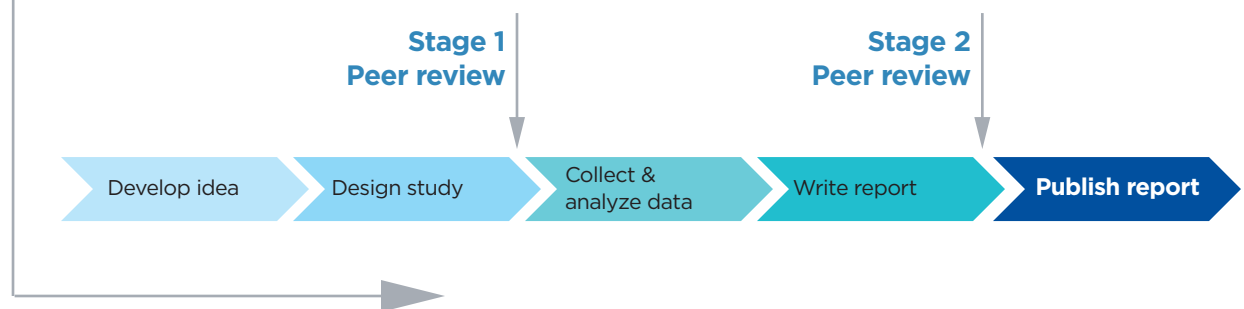# Registered Reports Creating
Greater Research Rigor and Quality

"This is the first evidence that Registered Reports not only address publication bias, but may also improve research quality. However, this is an observational study of existing papers. We did not randomly assign research to be conducted as a Registered Report or not. As a consequence, the causal inference is more uncertain than in a randomized trial and hinges on the appropriateness of our selection of matched comparison articles."

Tim Errington
Senior Director of Research
and one of the lead authors of the paper
COS

The Registered Reports publishing format

fundamentally changes how papers are selected for publication and how researchers are rewarded for their work. In June 2021, an **article published** in *Nature Human Behaviour* provides new evidence that **Registered Reports** are also associated with greater rigor and research quality compared with the standard publishing format. The observational study finds Registered Reports outperform comparison articles when peer reviewed on 19 outcome criteria. ■

Registered Reports Process

Stage 1 Peer review

Stage 2 Peer review

Develop idea → Design study → Collect & analyze data → Write report → **Publish report**

Partnerships
Enhance Open Science

Collaboration is an integral part of open source and open science ecosystems. **COS partners** with nonprofit, governmental, and commercial entities on projects that advance our mission to increase the transparency and reproducibility of scientific research. With our leadership in open science, we have an obligation to provide our services equitably, with integrity, and without partisan or ideological bias. Simultaneously, COS is an advocate for rigor and evidence-based practice and decision making. ◼

"Research culture change requires collaboration, coordination, and a sustained commitment to enacting shared values among a range of research stakeholders. COS is so fortunate to partner with many organizations and communities who operate on a local, regional, and global level."

Lisa Cuevas Shaw
Chief Operating Officer and Managing Director
COS

Improving Biomedical Research Culture

COS received a five-year award in September 2021, totaling $18 million from **Flu Lab** to accelerate COS's mission to increase openness, integrity, and reproducibility of research. The focus of the investment will be to extend COS's services to catalyze culture change in biomedical research. This grant builds on an active partnership between Flu Lab and COS centered on improving rigor and transparency in influenza research. ■

FLU LAB®

" We are grateful to Flu Lab for their commitment to our mission. Their support will accelerate the application of our theory of change in biomedical research. Flu Lab's funding will enable us to advance culture change with our biomedical community partners and collaborators and cultivate new relationships. The award will also increase the impact of other philanthropic and grant support by helping us improve the value proposition of our services for long-term sustainability."

Brian Nosek
Co-founder and Executive Director
COS

Global Flourishing
Study Launched

Watch press conference featuring David Mellor, COS's Director of Policy.

We are excited to partner with Baylor University, Harvard University, and Gallup on a long-term, global study of human flourishing. The **initiative** is a $43.4M five-year annual study of 240,000 individuals in 22 countries, the largest of it kind. It is supported by a consortium of funders including the John Templeton Foundation, the Templeton Religion Trust, the Templeton World Charity Foundation, the Fetzer Institute, the Paul Foster Family Foundation, the Wellbeing for Planet Earth Foundation, Well Being Trust, and the David & Carol Myers Foundation. The study has the potential to transform and dramatically expand our understanding of human flourishing.

The study's research team will collaborate with COS to maximize the quality, transparency, and equity of access to the data collected for the Global Flourishing Study to maximize the benefit of this project to the research community and broader public. ■

Baylor University   HARVARD UNIVERSITY   GALLUP

Character Lab Excels
with OSF

Character Lab is a nonprofit organization that connects researchers with educators to create greater knowledge about the conditions that lead to social, emotional, academic, and physical well-being for young people throughout the U.S.

They have partnered with COS to launch two new Character Lab community platforms on **OSF** that will help standardize open and transparent studies for education and research consortia comprising the **Character Lab Research Network**, which partners with schools and scientists to investigate the character traits that lead to well-being in children.

The **Character Lab Registry**, built on the **OSF Registries** infrastructure, offers custom registration templates for creating high-quality study designs and analysis plans, with embedded workflows to facilitate transparent work. The accompanying Character Lab Research Collection powered by **OSF Collections** provides consortium members with a repository for aggregating and curating affiliated study data and materials to promote research discoverability, collaboration, and reuse. ∎

> " Research about the well-being of adolescents lags behind any other group of people. With incredible partners and reliable infrastructure like OSF, we are able to dramatically accelerate this critical body of research. Our registry with OSF Registries enables all scientists interested in helping kids thrive to strengthen research and produce the insights that can change the lives of children."

Sean Talamas
Executive Director
Character Lab

Stewardship & Financials

Since 2013, open science advocates have inspired COS, a 501(c)(3) nonprofit organization, to develop and produce infrastructure and solutions that are not only beneficial to researchers but good for science.

Philanthropic support fuels our work and enables us to engage researchers, funders, and journals to help others adopt open science behaviors such as preregistering research and sharing data, materials, and code.

Visit **cos.io/finances** to learn more about our nonprofit status, strategic plan, sustainable business model, and financial position. ■

Our Supporters

Funding from individuals, philanthropic foundations, and federal agencies allows us to fulfill our mission to increase openness, integrity, and reproducibility of research. Additional details on funded projects and programs can be found at **osf.io/8km72**. ■

2021 Benefactors and Individual Donors

We are grateful to the benefactors and donors of the Center for Open Science who are committed to supporting our mission to increase openness, integrity, and reproducibility of research.

The list of our 2021 benefactors and donors can be found at: **cos.io/supporters**

INSTITUTE *of* **Museum and Library** SERVICES

NSF National Science Foundation

JOHN TEMPLETON FOUNDATION
Inspiring Awe & Wonder

ALFRED P. SLOAN FOUNDATION

NIH National Institutes of Health

TEMPLETON RELIGION TRUST

EINSTEIN Foundation.de

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FLU LAB

Sustaining Donor
Kate Seaton

Kate Seaton is an account manager for a software company based in Boise, Idaho. Between her customer service career and her college degree in foreign languages, she hardly fits the profile of a likely donor to an organization committed to fact-checking scientists.

But Seaton has been a sustaining donor of COS since she caught one of Last Week Tonight with John Oliver's segments where he built a humorous but **compelling case** for open science practices back in 2016.

The segment included a clip of COS's Co-founder and Executive Director Brian Nosek, who explained how the "publish or perish" paradigm impacts the quality of research studies cited in mainstream media.

Explaining her support for COS, Seaton noted,

"It's always kind of surprised me, the amount of bad research that gets out there and is used to craft public policy. It alarms me, and I think you serve an important public purpose."

Seaton is able to amplify her giving by taking advantage of her employer's donation-matching program. She sometimes finds it difficult to decide where to focus her philanthropic efforts when so much of the national news is alarming. By prioritizing good science, she believes she can aim at the root of multiple problems.

"Transparency and scientific integrity are paramount to progress and innovation, and I strongly believe that we need credible scientific organizations such as COS more than ever," Seaton said. ■

Our Board

Our board represents the research and technology communities and provides COS with valuable advice for meeting its mission. ■

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Brian Nosek
Ex-Officio (non-voting)

Co-founder and
Executive Director
COS