



RoRI: progress and prospects

Launch of Sheffield Metascience Network (MetaNet)

3 March 2021

James Wilsdon, RoRI & University of Sheffield

j.wilsdon@sheffield.ac.uk;  [@jameswilsdon](https://twitter.com/jameswilsdon)

<http://www.researchonresearch.org/>



RoRI launches to enable more strategic, open, diverse, and inclusive research

RoRI is a partnership initiative

The Wellcome Trust, Digital Science and the Universities of Sheffield and Leiden have joined forces to create RoRI

We're thrilled to announce the launch of the Research on Research Institute (RoRI) – an international consortium of research funders, academic institutions, and technologists working to champion the latest approaches to research on research.

Co-founded by the Wellcome Trust, the universities of Sheffield and Leiden, and Digital Science, the RoRI consortium will undertake transformative and translational research on research (also known as meta-research, science of science or meta-science). By analysing research systems and experimenting with decision and evaluation data, tools



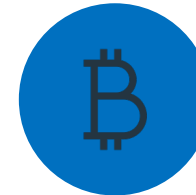
Our five aims for the pilot phase (2020-2021)



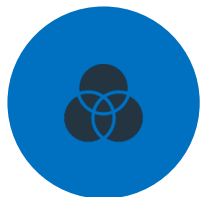
To support and build capacity for interdisciplinary, mixed-method and translational RoR in and across research systems worldwide
(research role)



To connect academic RoR capabilities to the data and analytical resources of our founding and strategic partners
(translation role)



With these partners, to experiment, coproduce and test new tools, indicators, funding modes, decision and evaluation frameworks
(innovation role)



To critically evaluate RoR methods and support engagement with RoR data and evidence by decision makers and wider society
(brokerage role)



To create an independent space for RoR learning, networking and collaboration between researchers, policymakers, funders and technologists
(facilitator role)

A kinder research culture is possible

Wellcome is right to call out hyper-competitiveness in research and question the focus on excellence. But other funders must follow its move.



The focus on excellence in research can contribute to a negative working culture. Credit: James Brittain/View Pictures/UiG/Getty

Wellcome's director Jeremy Farrar didn't hold back. "The emphasis on excellence in the research system is stifling diverse thinking and positive behaviours," he wrote in a [blog post](#) last month. "The relentless drive for research excellence has created a culture in modern science that cares exclusively about what is achieved and not about how it is achieved." These are strong words, not least because Farrar acknowledges that the UK biomedical funding charity that he leads helped to create such a focus on excellence.

Wellcome is not alone — excellence is everywhere. Germany plans to spend €533 million (US\$581 million) a year on its Excellence Strategy. In the United Kingdom, £2 billion (US\$2.5 billion) of public funding is allocated annually to universities through a suite of funds that support "excellence wherever it is found". Australia's research-evaluation system is called Excellence in Research for Australia. Worldwide, research facilities are being named centres of excellence, and excellence is scattered generously in the pages of universities' strategic plans.

[PDF version](#)

RELATED ARTICLES

Some hard numbers on science's leadership problems



Science needs to redefine excellence



"Excellence R Us": university research and the fetishisation of excellence

SUBJECTS

[Culture](#) [Funding](#) [Research data](#)

[Research management](#)



“Wellcome and its partners in RoRI should be commended for taking an important first step. They have recognized that there are problems in research culture and that these need to be fixed. RoRI will help to probe some of the causes of distress, and suggest solutions. Now, other funders and research-management societies must join the mission...”

Nature editorial, 1 October 2019

Our consortium (as of Jan 2021)

Founding Partners:

Wellcome Trust
Digital Science
University of Sheffield
CWTS, Leiden University

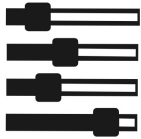


Strategic Partners *(for pilot phase, 17 partners from 12 countries and regions):*

African Academy of Sciences
Australian Research Council (ARC)
Austrian Science Fund (FWF)
Canadian Institutes of Health Research (CIHR)
Chan Zuckerberg Initiative (CZI)
European Molecular Biology Organization (EMBO)
Howard Hughes Medical Institute (HHMI)
DBT/Wellcome Trust India Alliance
Fondazione Telethon

Michael Smith Foundation for Health Research (MSFHR)
National Institute for Health Research (NIHR)
Novo Nordisk Foundation
Research Council Norway (RCN)
Alfred P. Sloan Foundation
Swiss National Science Foundation (SNSF)
UK Research and Innovation (UKRI)
Volkswagen Foundation

RoRI first-wave projects (2020/21)



CRITERIA

Summary

Funders need their proposal selection processes to do one thing: select the proposals most likely to meet their objectives. Various inequalities in funding rates may exist, such as gender or field inequalities. The selection process a funder uses may mitigate or exacerbate these inequalities. The project will use data from many funders who each use different selection processes in different contexts. The outputs will help funders understand the potential drivers of inequalities in research funding and identify where mitigation is possible.

Partners: Australian Research Council; Canadian Institutes of Health Research; Chan Zuckerberg Initiative; EMBO; Austrian Science Fund (FWF); Michael Smith Foundation for Health Research; Novo Nordisk Fonden; Research Council Norway; W/DBT India Alliance; UKRI; Wellcome Trust



EXCELLENCE

Summary

Initiatives like the UK's Research Excellence Framework, Germany's Exzellenzinitiative and Switzerland's Eccellenza grants have put excellence at the centre of research policy and evaluation. This project will assess the ways in which the idea of excellence is currently used by key actors in the research ecosystem and the functions it serves in specific practices and processes in order to explore its possible futures. It will include detailed case studies of 10 funders.

Partners: African Academy of Sciences; Australian Research Council; Canadian Institutes of Health Research; Austrian Science Fund (FWF); Michael Smith Foundation for Health Research; National Institute for Health Research (UK); Swiss National Science Foundation; Wellcome Trust.



FAIRware

Summary

This project aims to build open source software tool(s) to allow researchers, institutions and funders to assess and improve the 'FAIRness' of the research outputs they produce. Over recent years, the FAIR principles (Findability, Accessibility, Interoperability, Reusability) have gained considerable traction as a basis for describing how research data, and potentially other research outputs, should be documented and shared to ensure that they can be discovered, accessed and used effectively, such that their value is maximised.

Partners: Canadian Institutes of Health Research; National Institute for Health Research (UK); Swiss National Science Foundation; Wellcome Trust.

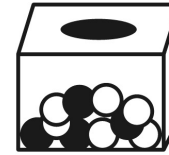


PATHWAYS

Summary

The scope of this work is careers in research, broadly defined, with an empirical and policy focus on six countries: Austria, Canada, Denmark, Germany, UK and USA. The project will be designed and delivered by a team drawn from RoRI strategic partners in these countries, and a wider network of data, research and policy partners.

Partners: Canadian Institutes of Health Research; Chan Zuckerberg Initiative; Austrian Science Fund (FWF); Howard Hughes Medical Institute; Michael Smith Foundation for Health Research; National Institute of Health Research (UK); Novo Nordisk Fonden; Sloan; UKRI; Volkswagen Foundation; Wellcome.



RANDOMISATION

Summary

There is growing interest in the use of randomisation and lottery-type mechanisms in grant funding. By linking and supporting a series of linked and phased experiments with uses of focal, or targeted randomisation in funding processes (our preferred term to the sometimes misleading "lotteries"), and facilitating closer alignment and learning between these, the RoRI consortium could effectively undertake the largest multi-funder, cross-country trial and analysis of these techniques.

Partners: Australian Research Council; Canadian Institutes of Health Research; Chan Zuckerberg Initiative; EMBO; Austrian Science Fund (FWF); Michael Smith Foundation for Health Research; National Institute of Health Research (UK); Novo Nordisk Fonden; Sloan; Swiss National Science Foundation; UKRI; Volkswagen Foundation; Wellcome.

METRICStanford
@METRICStanford

METRICS is a research to action center focused on transforming research practices to improve the quality of scientific studies in biomedicine and beyond

Stanford, CA metrics.stanford.edu Joined September 2015

120 Following 1,986 Followers

Followed by Olmo van den Akker, Fetzer Franklin Fund, and 39 others you follow

Tweets Tweets & replies Media Likes

Growing interest in research on research



c&en TOPICS MAGAZINE COLLECTIONS VIDEOS JOBS

Research on research gains steam

New metascience institute aims for larger studies
by Dalmeet Singh Chawla, special to C&EN
OCTOBER 1, 2019

In 2005, John Ioannidis, a professor of medicine at Stanford University, opened a can of worms. In a paper published in *PLOS Medicine*, he argued that most published scholarly literature is false (DOI: [10.1371/journal.pmed.0020124](https://doi.org/10.1371/journal.pmed.0020124)).

To date, Ioannidis's "landmark study" has attracted thousands of citations and helped solidify a whole field in its own right, says Jette Wicherts, who studies research methodology at Tilburg University.

The use of scientific methodology to study science itself is called metascience. The discipline has become mainstream in recent years, tackling some of the thorniest problems science faces, including a lack of reproducibility of academic literature, biases in peer review, and the fair allocation of research funding.

"Metascience is now a distinct species," although it has ancestors in medical science, psychology, and other disciplines, Wicherts says.

Ioannidis, who launched the **Meta-Research Innovation Center at Stanford (METRICS)** in 2014, however, is hesitant to frame metaresearch as a separate field. "In a way, every researcher is a metaresearcher, since the issues involved are at the core of how to do science and apply the scientific method and maximize the yield of reproducible and useful information," he says.



Credit: Courtesy of James Willson
James Willson, founding director of the Research on Research Institute

[JOURNALS A-Z](#)
[JOURNAL INFO](#)
[PRICING & SUBSCRIPTIONS](#)

[Home](#) / [Annual Review of Statistics and Its Application](#) / Volume 7, 2020 / Hardwicke

Calibrating the Scientific Ecosystem Through Meta-Research

Annual Review of Statistics and Its Application
Vol. 7, (Volume publication date March 2020)
Review in Advance first posted online on November 1, 2019. (Changes may still occur before final publication.)
<https://doi.org/10.1146/annurev-statistics-031219-041104>

Tom E. Hardwicke,^{1,2} Stylianos Serghiou,^{2,3} Perrine Janiaud,² Valentin Danchev,² Sophia Crüwell,^{1,5} Steven N. Goodman,^{2,3,4} and John P.A. Ioannidis^{1,2,3,4,6}

¹Meta-Research Innovation Center Berlin (METRIC-B), QUEST Center for Transforming Biomedical Research, Berlin Institute of Health, Charité—Universitätsmedizin Berlin, 10178 Berlin, Germany; email: tom.hardwicke@charite.de
²Meta-Research Innovation Center at Stanford (METRICS), Stanford University, Stanford, California 94305, USA
³Department of Health Research and Policy, Stanford University, Stanford, California 94305, USA
⁴Department of Medicine, Stanford University, Stanford, California 94305, USA
⁵Department of Psychological Methods, University of Amsterdam, 1018 WS Amsterdam, Netherlands
⁶Departments of Biomedical Data Science, and of Statistics, Stanford University, California, USA

[Download PDF](#) [Article Metrics](#) [Permissions](#) [Reprints](#) [Download Citation](#) [Citation Alerts](#)

Abstract

While some scientists study insects, molecules, brains, or clouds, other scientists study science itself. Meta-research, or research-on-research, is a burgeoning discipline that investigates efficiency, quality, and bias in the scientific ecosystem, topics that have become especially relevant amid widespread concerns about the credibility of the scientific literature. Meta-research may help calibrate the scientific ecosystem toward higher standards by providing empirical evidence that informs the iterative generation and refinement of reform initiatives. We introduce a translational framework that involves (a) identifying problems, (b) investigating problems, (c) developing solutions, and (d) evaluating solutions. In each of these areas, we review key meta-research endeavors and discuss several examples of prior and ongoing work. The scientific ecosystem is perpetually evolving; the discipline of meta-research presents an

[BUSINESS INSIGHTS](#)
[LEADERSHIP & CAREERS](#)
[POLICY & THE ECONOMY](#)

The Science of Science

The Kellogg Center for Science & Innovation is the first academic hub of its kind to bring together the world's foremost experts in complex systems and network science to uncover fundamental patterns in careers, collaboration, the progress of knowledge, and more.

Here is a collection of faculty research and insights related to the science of science. For more information about the Kellogg Center for Science of Science & Innovation, visit kellogginsight.org.



For Teams, What Matters More: Raw Talent or a History of Success Together?

A study of professional sports teams suggests that one factor is clearly more important, but the best teams combine them both.
Satyam Mukherjee, Yun Huang, Julia Neidhardt, Brian Uzzi and Noshir Contractor

JUNE 3, 2019
LEADERSHIP

Research on research landscape

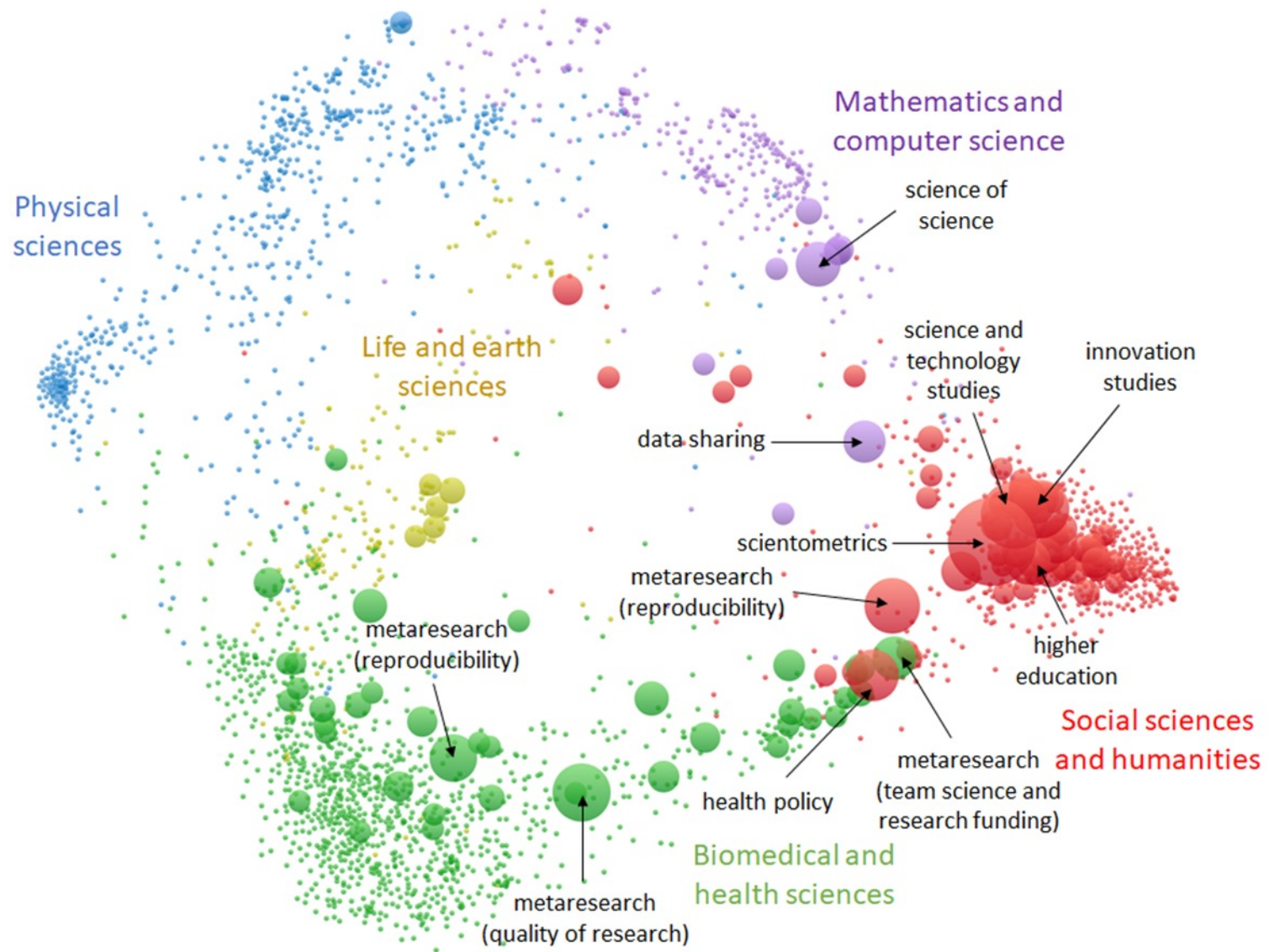
RoR taking place in a number of different disciplinary areas

Using different methods and theories

Often taking place in silos

RoRI aims to work across boundaries

RoRI landscape report to be published in May 2021



 VOSviewer

Based on publications identified by a group of experts



Home

Responsible Research Assessment – a virtual conference from the Global Research Council

November 23 - 27, 2020

Register Now →

the GRC

ited to promoting the sharing of
ctices for high-quality collaboration
encies worldwide. It recognises the
s previous work, such as the
'merit review, for developing a
ting of the topic of responsible
nt amongst funders. With the
ic putting a spotlight on the
rnational collaboration in scientific
ocial impact of research becoming
e is now renewed urgency for
gether and reconsider how research
aluated. This conference presents a
for research funders to come
ether, learn and look to the future.
engaged discussions over the



Professor Andrew Thompson

UKRI Champion for
International and GRC
Governing Board member



Dr. Molapo Qhobela

CEO of NRF
South Africa and Chair of the
GRC Governing Board

RoRI RESEARCH
ON RESEARCH
INSTITUTE

RoRI Working Paper No.3 The changing role of funders in responsible research assessment:

progress, obstacles and the way ahead

Stephen Curry, Sarah de Rijcke, Anna Hatch, Dorsamy (Gansen)
Pillay, Inge van der Weijden and James Wilsdon

November 2020

Produced in partnership with:



DORA








UK Research
and Innovation



National
Research
Foundation

Pilot phase: a lot of progress, but more to do!

- **Building the consortium itself is our greatest achievement to date**, in demonstrating a shared commitment to this agenda. Between them, RoRI partners invest around US\$20 billion each year in research, so by supporting real-time experimentation, data-gathering & comparative analysis, we have real opportunities to strengthen research cultures and decision making. We also now have active engagement from 7-8 publishers, which could deepen as we move into Phase 2.
- Together we have co-designed and are collaboratively undertaking a **suite of five projects**, which will run for the rest of RoRI's pilot phase.

Keyword(s)	Title	Timetable	Strategic Partners involved / interested	Core team leads	Next steps
CRITERIA 	How do grant application criteria influence inequalities in research funding?	June 2020 - Sept 2021 (+ possible qualitative follow-up project)	10 partners as of May 2020: CHIR, CZI, EMBO, MSFHR, Novo Nordisk Fonden, NRC, NWO, WDBT India Alliance, UKRI, Wellcome	Matt Thakur Vincent Traag Daniil Mikhailov Wolfgang Kallenbrunner	Initial scoping work now underway. Project partner meetings in late May/early June
EXCELLENCE 	Transforming 'excellence': definitions, applications and alternatives to excellence in the evaluation, management & measurement of research	July 2020 - Sept 2021	10 partners as of May 2020: ARC, CHIR, CZI, EMBO, FWF, HHMI, MSFHR, NIHR, SNSF, Wellcome	Stephen Pinfield Thomas Franssen Sarah de Rijcke	Initial scoping now underway. Project partner meetings in late May/early June. Drop-in session 12:00-13:00 BST Weds 27 May
FAIRware 	FAIRware: an open source software tool to assess the FAIR status of research outputs	June 2020 - Sept 2021	4 partners as of May 2020: CHIR, NIHR, SNSF, Wellcome (4 partners as of May 2020)	Adam Dinsmore Stephen Pinfield	Work underway. Request for Proposals to be published in June 2020.
PATHWAYS 	Career pathways in research: a six-country, multi-partner study of data, frameworks & future directions	July 2020 - Sept 2021 (+ possible further phase into 2022)	9 partners as of May 2020: CHIR, CZI, FWF, HHMI, MSFHR, Novo Nordisk Fonden, UKRI, Volkswagen Foundation, Wellcome (9 partners as of May 2020)	Anne-Marie Coriat James Wilsdon Inge van der Weijden	Scoping underway. Partner cluster or 1-1 calls to be arranged for early June.
RANDOMISATION 	Focal randomisation in grant funding: a multi-funder comparative study	July 2020 - Sept 2021 (+ possible expansion into further funder experiments)	13 partners as of May 2020: ARC, CHIR, CZI, EMBO, FWF, MSFHR, NIHR, NWO, NRC, SNSF, UKRI, Volkswagen Foundation, Wellcome	James Wilsdon Sarah de Rijcke Ludo Wilmanns Helen Buckley Woods	Scoping underway. Partner cluster or 1-1 calls to be arranged for early June.

What does success look like at the end of the pilot phase?



- Clear evidence for the continued & growing need for transformative and translational RoR (heightened now in the context of Covid-19);
- A committed, diverse and effective consortium: how many partners, of what type, and over what range of geographies? How much have different partners contributed, and in what forms?
- What we've co-developed together: processes, project scoping and identification of working methods, inclusive dialogue, data systems and data-sharing.
- Our formal outputs: launch conference, working papers, reports, tools, training resources, events.
- Our broader outcomes: projects well underway with preliminary results; evidence of uptake and use of RoRI work by our partners; data-sharing; evidence of experimentation; use of new tools etc.
- Core team well established and working well (with clear governance structures, strategic and operational-level management systems, transparent financial operations etc.)
- Positioning of RoRI as a partner of choice, and as an open, collaborative platform for engaging with diverse actors in research systems (funders, publishers, academics, learned societies etc)

RoRI phase 2: our headline goal?

A global, self-sustaining network for **transformative and translational research on research** that informs & influences **how research is funded, practiced, communicated and evaluated.**


Features of RoRI we value & may want to preserve

- A **cross-sector**, plural, co-owned public interest model;
- **Independent, resilient identity and constitution** that transcends individual organisational and partner interests;
- **Sufficient scale** to engage with the range and complexity of research systems;
- Transdisciplinary, multi-method, **co-productive**;
- **Translational** RoR that is relevant and applicable by key actors in research systems;
- A **safe environment for experimentation, risk-taking and collaboration**;
- A shared commitment to **open infrastructures and open data**.

Additional features we may want to consider

- Supporting and facilitating multi-partner funding calls on RoR?
- Additional strand of capacity-building in RoR (esp with partners in global south)?
- Possible RoR community publishing platform (along the lines of MIT Press' Harvard Data Science Review <https://hdsr.mitpress.mit.edu/specialissue1>);
- Building and supporting an online community of practice (akin to the Health Foundation's Q Community <https://q.health.org.uk>)
- Training and accreditation, short courses, MOOCs etc (online);
- Other member services in a similar way to a professional body

Supporting & facilitating growth of these fields



About COS ▾Products ▾Initiatives ▾Services ▾Communities ▾BlogContact Us🔍

Help support open science today.


Donate Now

2021 Metascience Symposium

September 16-18 and 23-25

Sign up to receive a notification when registration for Metascience 2021 becomes available, including information about invited speakers, topics, and more exciting metascience opportunities.

Sign Up



SHEFFIELD METASCIENCE NETWORK
METANET

MAR 03

Launch of Sheffield Metascience Network (MetaNet)

by Research on Research Institute (RoRI)

Following

Free

Register

This workshop aims to bring together researchers across the University Sheffield with an interest in metascience, or research on research.

About this Event

Worldwide, interest continues to intensify in how research is funded, practiced and evaluated, and in how research systems and culture can become more robust, open, inclusive and impactful. A growing number of researchers, from diverse disciplinary starting points, are applying novel methods, network and data analysis to the scientific process itself. But research on research—sometimes called metascience, meta-research or science of science—remains poorly joined-up. More effort is needed to develop theoretical frameworks, standardize methods, strengthen networks, and test the transferability of approaches from one context to others.

Date And Time

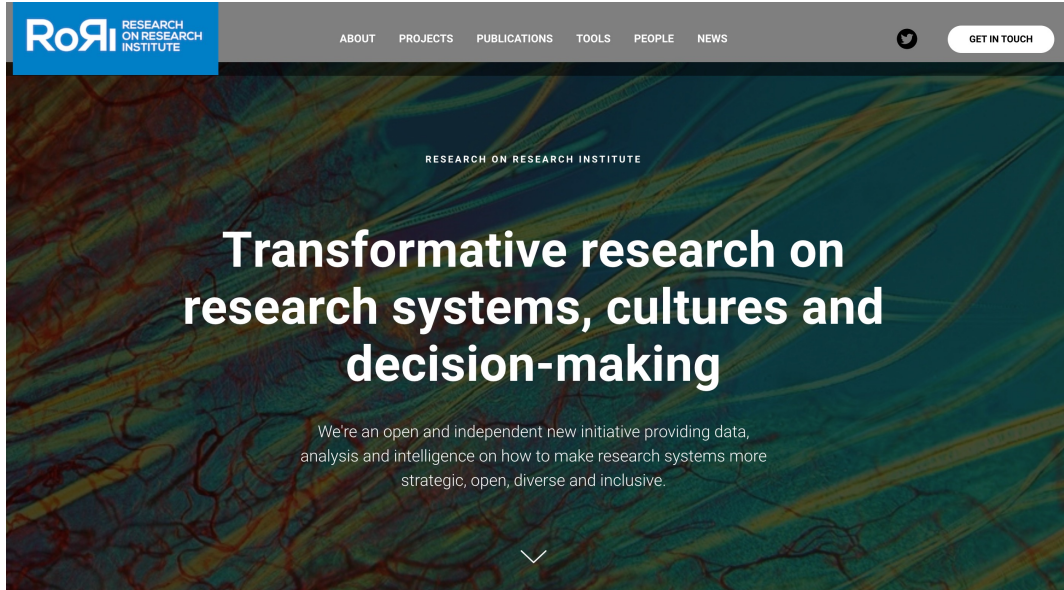
Wed, 3 March 2021
13:30 – 17:00 GMT
[Add to Calendar](#)

Location

Online Event

Already have a ticket?

Access the event



<http://researchonresearch.org>

j.wilsdon@sheffield.ac.uk

[@RoRIInstitute](https://twitter.com/RoRIInstitute)