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Open Science CLINIQUE
in support of UN SDGs
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H2020 Foster, COLUMBUS & SeaCHANGE

Open Science CLINIQUE:

Winning GRANTS with … Open Science

Ivo Grigorov
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Open Science Coordinator @NTK

Train the Trainers, KRE Conference 2021
#OpenScienceClinique

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Morning Programme (120 min):

- Who are YOU & what do YOU do?
- Who CARES about Open Science?
- Winning GRANTS with Open Science? Really?!
- DEBATE: Reproducibility Crisis
- EXERCISE: List Research OUTPUTS
- EXERCISE: Making outputs FAIR

RESOURCES:

COLLABORATIVE PLAYLIST

MCAA Open Science for Marie Curie Fellows

Playlist for Open Science training for MSCA Marie Curie Fellows, maintained by FOSTER Open Science Clinique, www.openscienceclinique.eu

Ivo Grigorov • 5 likes • 23 songs, 7 hr 53 min

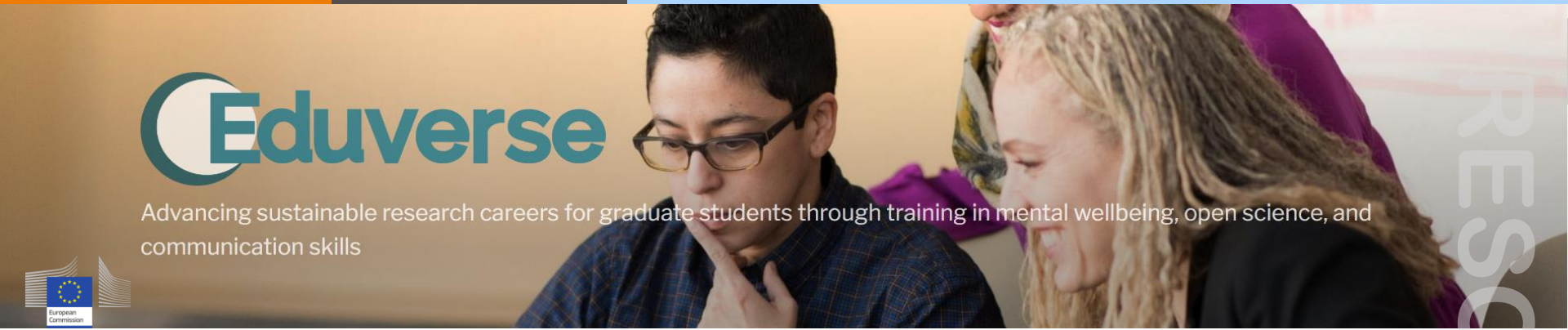
Custom order

#	TITLE	ALBUM OR PODCAST	ADDED BY	RELEASE DATE	DATE ADDED	
	Rigor, Reproducibility, and Transparency in Research Office of Extramural Research	All About Grants at NIH	Ivo Grigorov	Dec 2018	Mar 29, 2021	11:10
	097 - Retractions of COVID-19 Research Papers: How the Race t... Johns Hopkins Bloomberg School of Public Health	Public Health On Call	Ivo Grigorov	Jun 2020	Apr 6, 2021	16:19
	Reproducibility crisis in science; Aeolus wind-measuring satellite;... BBC Radio 4	BBC Inside Science	Ivo Grigorov	Jan 2020	Mar 29, 2021	30:11
	How the academic paper is evolving in the 21st century Nature Careers	Working Scientist	Ivo Grigorov	Mar 2020	Mar 29, 2021	19:19
	Brian Nosek on Open Science & The Replication Crisis Big Ideas	Big Ideas	Ivo Grigorov	Feb 2020	Mar 29, 2021	57:37
	How technology can help solve science's reproducibility crisis Nature Careers	Working Scientist	Ivo Grigorov	Apr 2019	Mar 29, 2021	15:17
	#01 What is Open Science? Open Science Talk	Open Science Talk	Ivo Grigorov	Sep 2018	Mar 31, 2021	15:25
	#29 Mission or Money? Open Science Talk	Open Science Talk	Ivo Grigorov	Jan 2020	Mar 31, 2021	19:13
	#32 A Student's Perspective Open Science Talk	Open Science Talk	Ivo Grigorov	Mar 2020	Mar 31, 2021	15:11
	#16 Replication Studies Open Science Talk	Open Science Talk	Ivo Grigorov	Mar 2019	Mar 31, 2021	14:36
	#18 Preregistration In Science Open Science Talk	Open Science Talk	Ivo Grigorov	May 2019	Mar 31, 2021	18:16

Per Jörnlöv
Positive Energy Forever • Mall Grab
TheGridFailed

Spotify

Source: https://open.spotify.com/playlist/4MV5ufZ1YsKaS1A6SgQlc1?si=e0519e4fa04e483f

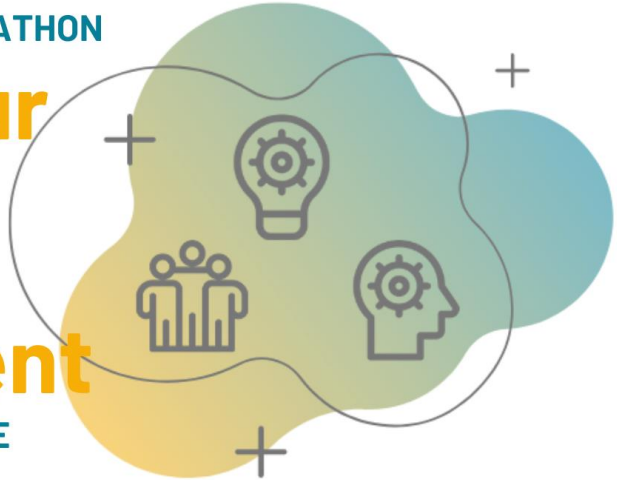


RESOURCES:

SUMMER SCHOOL - HACKATHON

Design your Research Environment

JUNE 21-25, 2021 - ONLINE



Jan 10-14th 2022

https://oeduverse.eu/events/oeduverse-winter-school/

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1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

United Nations
Educational, Scientific and
Cultural Organization

Open Science

UNESCO Recommendation on Open Science
https://en.unesco.org/science-sustainable-future/open-science/recommenda

“

We can only tackle the greatest challenges that we face and will face over coming decades – such as climate change, pandemics and biodiversity loss – through transparent, open & agile research collaboration.

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“

If researchers continue to be assessed using such narrow criteria, scientific research activities will become further dislocated from the needs of the society

Source : Embedding open science practices within evaluation systems can promote research that meets societal needs in developing countries, https://blogs.lse.ac.uk/impactofsocialsciences/2017/01/24/embedding-open-science-practices-within-evaluation-systems-can-promote-research-that-meets-societal-needs-in-developing-countries/Image credit: 2 by Mundial Perspectives

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What does “OPEN” have to do with MY career

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Horizon EUROPE Grants 2021-2027: Open Science is part of EXCELLENCE !

New features in HE proposals PART B

1. Excellence

1.1 Objectives

1.2 ~~Relation to the work programme~~

1.3 Concept and methodology

1.4 Ambition

2. Impact

2.1 Expected impacts

2.2 Misure to maximase impact

a) Dissemination and exploitation of results

b) Communication activities

3. Quality and efficiency of the implementation

3.1 Work plan – work packages, deliverables

3.2 ~~Management structure~~, **milestones** ~~and procedures~~

3.3 Consortium as a whole

3.4 Resources to be committed

OS - DMP

1. Excellence

1.1 Objectives and ambition *[e.g. 4 pages]*

1.2 Methodology *[e.g. 15 pages]*

2. Impact

2.1 Project's pathways towards impact *[e.g. 4 pages]*

2.2 Measures to maximise impact - Dissemination, exploitation and communication *[e.g. 5 pages]*

2.3 Summary (Canvas table)

3. Quality and efficiency of the implementation

3.1 Work plan and resources *[e.g. 14 pages – including tables]*

3.2 Capacity of participants and consortium as a whole *[e.g. 3 pages]*

Slide by Matteo Sabini, Project Manager at APRE

What does HORIZON EU expect (Article 17) ?

- open access to scientific publications (as before)

- research data management (as before)
  i. DMP as a living document
  ii. FAIR data principles
  iii. Open Data & use of EOSC e-infrastructure

- Additional **Open Science Practices**
  i. "*Where the call conditions impose additional obligations …*"
  ii. Creative Commons CC-BY or CC-0 where possible

Source: HE General Model Grant Agreement & Template, v.1 25 Feb 2021

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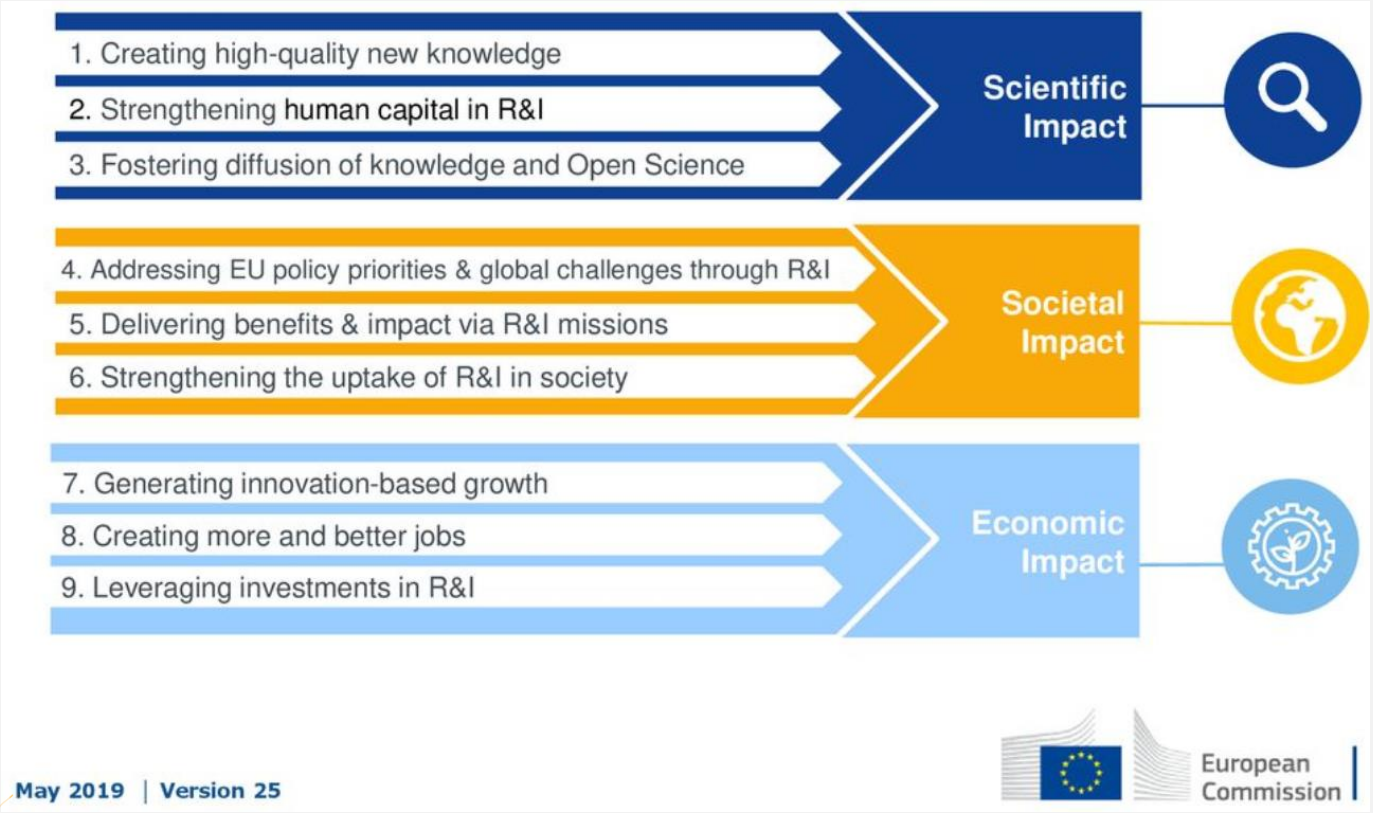
EXAMPLES of funders *PATHWAYS to IMPACT*?



3 reasons to adopt #OpenByDefault:

1 Multiply Collaborations

2 Stronger Research Profile

3 Greater funding success*

*avoid IPR Conflicts!

REPRODUCIBILITY !!!

Does #OpenScience matter at proposal evaluation?

Based on: Winning Horizon 2020 with Open Science, http://dx.doi.org/10.5281/zenodo.12247

MSCA-IF applicants …

MSCA Cofund
FishINVASION

TransEBM
Panel ENV
Score: > 89%

CarbEX
Panel ENV
Score: > 87%

FUNDED

IF DeepRNA
Panel LIF

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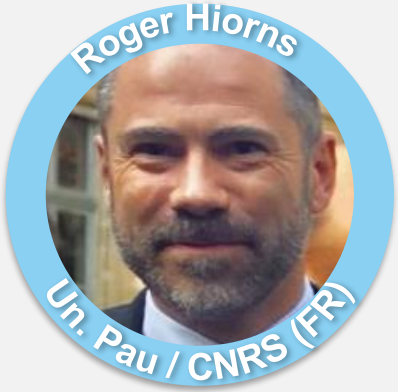
MSCA-ITN-2017 applicant …

ITN QDIV
Panel LIF
Score: 89,6%

“… Open Science is the antidote to the reproducibility crisis we are experiencing, which is why I found H2020 FOSTER+ a crucial partner for our ITN”

ITN ELEVATE
Panel CHE
Score: 91,6%



“we can use Open Science to spread the message, and reversing distrust in science”

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…and here is what the Evaluators say …

EXCELLENCE

"Open Science is applied to optimise reproducibility"

IMPACT

"new knowledge delivered to SMEs by depositing research outputs in OpenAIRE2020 and EMODNet"

"exploitation and dissemination of the project results, includes sharing of the data… creative measures will be taken to guarantee the openness, reproducibility, dissemination and impact of the method"

"Training for communication & Open Access procedures are especially welcome"

"data management plan includes IPR issues"

Source: H2020 Evaluation Summary Reports, 2015-2020

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EXERCISE

Image: Vitalii Petrenko/Shutterstock.com

Rewards & Incentives

Moral Responsibility

Reproducibility / Crisis

Excellence Definition

Public Trust

…and is Open Science a solution ?

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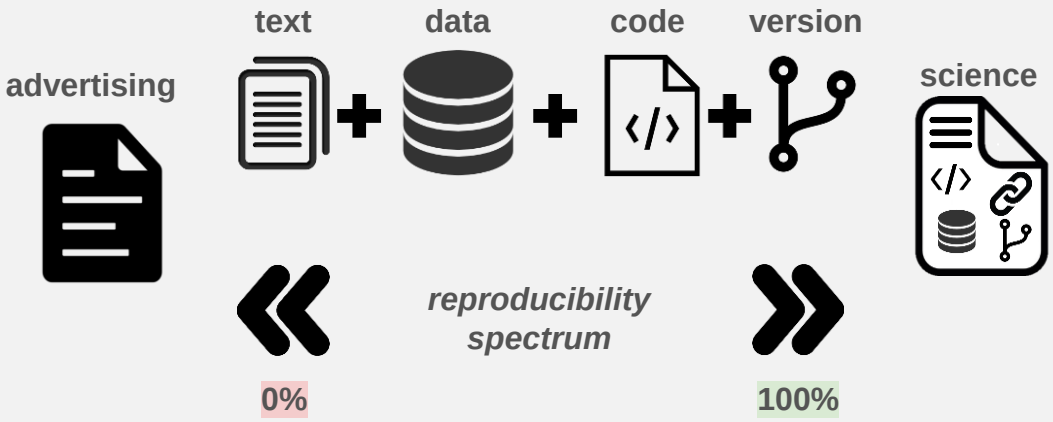
“ two out of five studies substantially reproduced research findings, although not all experiments met thresholds of statistical significance ”

Nature 541, 19 Jan 2017, doi:10.1038/541269a
eLife elifesciences.org/collections/reproducibility-project-cancer-biology

Stanley Flegler/Visuals Unlimited, Inc./Science Photo Library

Research reproducibility spectrum

(by Paola Masuzzo)



Source: Paola Masuzzo @pcmasuzzo

See also: Peng, 2011. Science 02 Dec 2011:Vol. 334, Issue 6060, pp. 1226-1227, DOI: 10.1126/science.1213847

EXERCISE: DEBATE

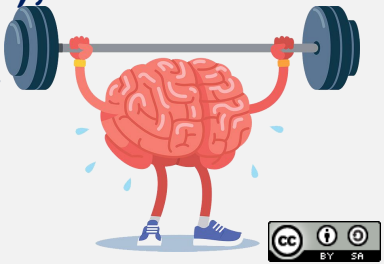
10 min teamwork / 10 min group debate

1) Split in 2 teams: one team argues FOR, the other AGAINST statement "*Open Science can address Reproducibility Crisis*"

2) As a team, reflect on 3-5 arguments to support your case

3) Prepare a 3 min statement as a group (nominate a speaker);

4) Back to Plenary: Devils Advocate Debate FOR & AGAINST



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BREAK?

from debating

Research Output = Publications

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@ fosterscience

”Focus on Impact Factor distorts what matters in science”

Dr. Alan Leshner,
CEO AAAS & Publisher of ”Science” journal

#esof2014 pic.twitter.com/M9D0rVtggl
24/06/2014 16:53

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"Focus on Impact (Factor) distorts what matters in science"

Dr. Alan Leshner, CEO AAAS & Publisher of "Science" journal

How does this impact our Credibilty?

And Societal Impact?

Graphic: michaelnielsen.org

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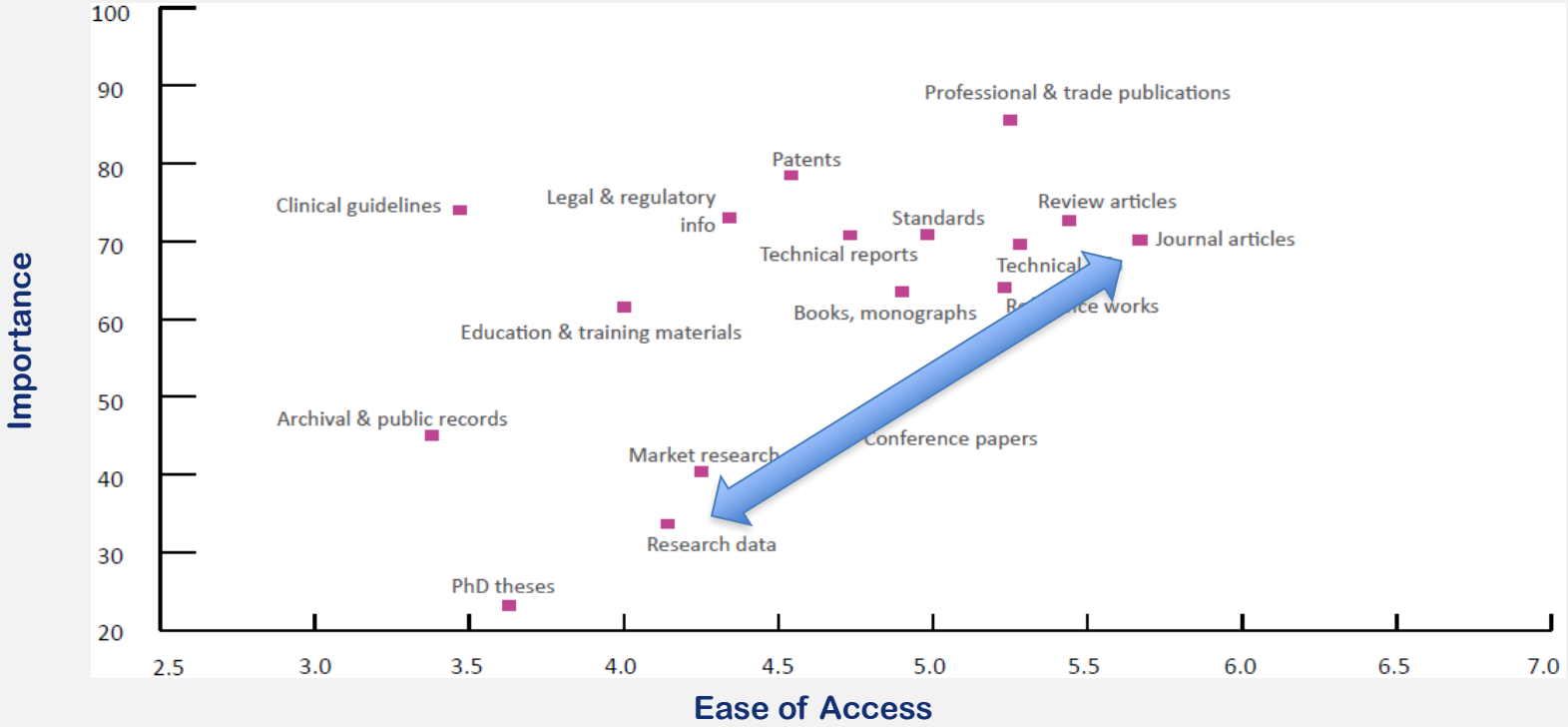
Importance and Ease of Access to Research Output for SME's



Mean ratings (x axis), where 7=`extremely important' and % of users for whom access is `fairly easy' or `very easy' (y axis) (n=699)

Source: Rowlands, Ian. 'Access to Scholarly Content: Gaps and Barriers', 2011. http://dx.doi.org/10.13140/2.1.2402.3844

EXERCISE

Image: Vitalii Petrenko/Shutterstock.com

EXERCISE: List Research Outputs

5 min teamwork
10 min group discussion

1) Split in BREAK OUT teams

2) LIST all possible OUTPUTS of your research workflow (or lifecycle)

3) Think broadly! Think anything tangible that comes out!

4) The team to get >15 unique output examples, wins!

5) To help, we have given you the FIRST example: PAPERS !!!

Exercise by www.openscienceclinique.eu

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EXERCISE: List Research Outputs (*some* Answers)

1. Dataset
2. Database
3. Methodology (including model)
4. Protocol
5. ISO Standard
6. Toolkit
7. Software (other than model)
8. Research/virtual environment
9. Negative results
10. Blueprints, Protected Design
11. Demo, Proof of Concept
12. Prototypes (including appliances, drones, sensors etc)
13. Knowledge Services (advice)
14. Research Infrastructure
15. Patents
16. Commercial Systems
17. Taxonomies & Ontologies
18. Training/e-learning tools/services
19. Videos (professionally prepared, polished products, not amateur recordings!)
20. Policy report
21. Decision-Support Tools / Frameworks
22. White papers
23. Research Strategy / Roadmap
24. Reviews / Expert Evaluations

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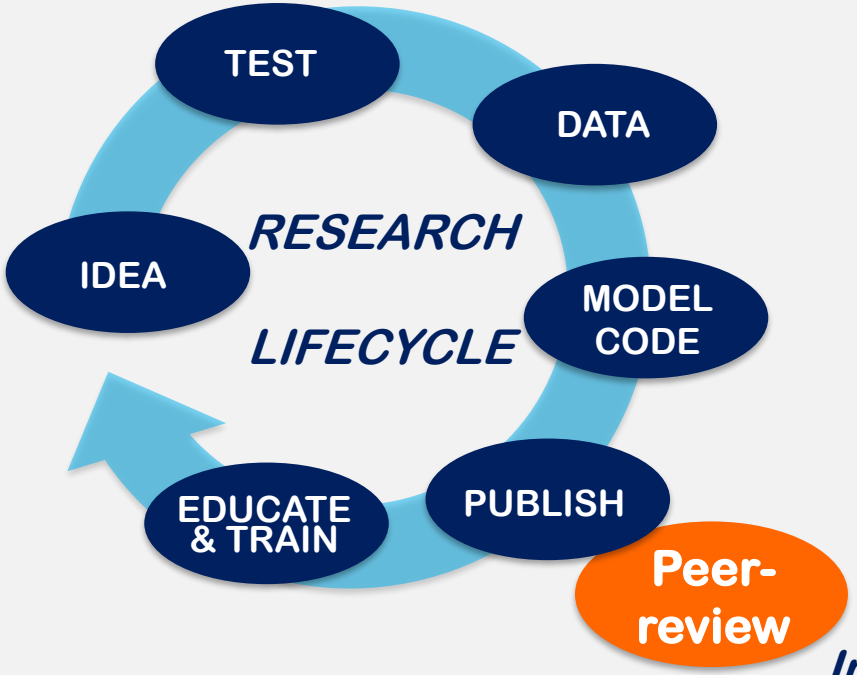
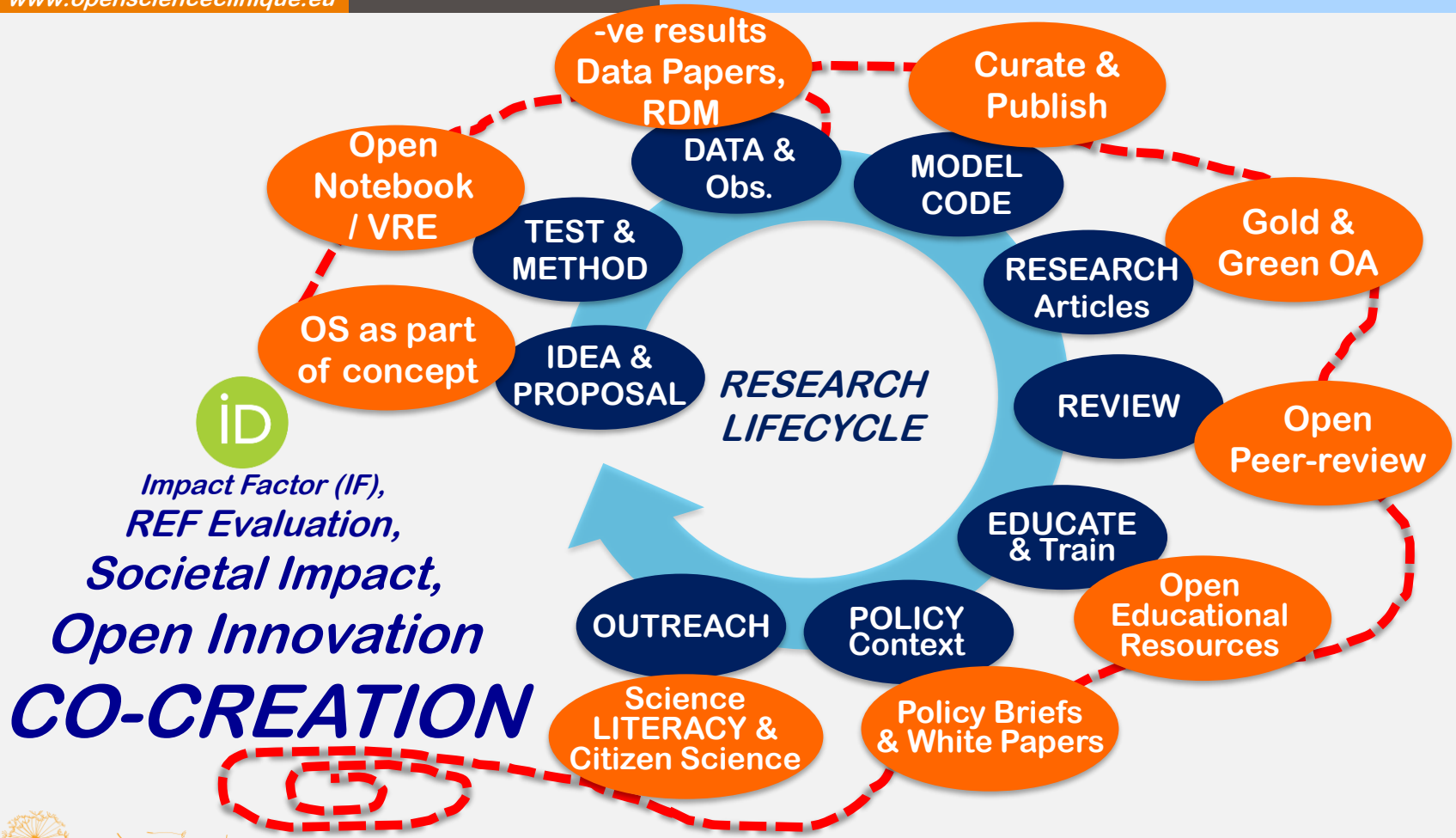


Impact Factor (IF)


-ve results
Data Papers,
RDM
Curate &
Publish
Open
Notebook
/ VRE
DATA &
Obs.
MODEL
CODE
TEST &
METHOD
Gold &
Green OA
RESEARCH
Articles
OS as part
of concept
IDEA &
PROPOSAL
RESEARCH
LIFECYCLE
REVIEW
Open
Peer-review
iD
Impact Factor (IF),
REF Evaluation,
Societal Impact,
Open Innovation
CO-CREATION
EDUCATE
& Train
Open
Educational
Resources
OUTREACH
POLICY
Context
Science
LITERACY &
Citizen Science
Policy Briefs
& White Papers

But, but, but …
Are you CRAZY?
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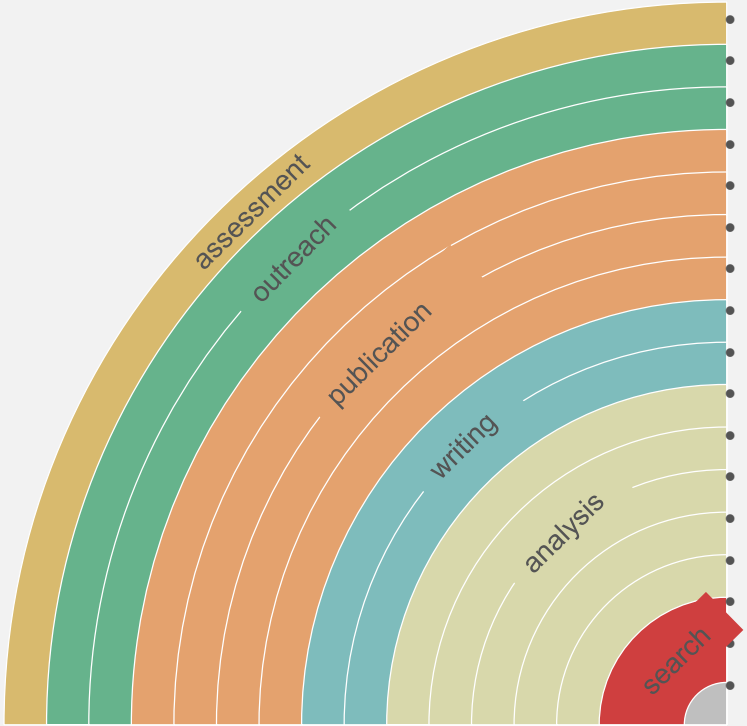
BREAK?

How do I capture all these objects

Ecosystem of TOOLS for Open Scholarship:



- adding alternative evaluation, e.g. with altmetrics
- communicating through social media, e.g. Twitter
- sharing posters & presentations, e.g. at FigShare
- using open licenses, e.g. CC0 or CC-BY
- publishing open access, ‘green’ or ‘gold’
- using open peer review, e.g. at journals or PubPee
- sharing preprints, e.g. at OSF, arXiv or bioRxiv
- using actionable formats, e.g. with Jupyter or CoCalc
- open XML-drafting, e.g. at Overleaf or Authorea
- sharing protocols & workfl., e.g. at Protocols.io
- sharing notebooks, e.g. at OpenNotebookScience
- sharing code, e.g. at GitHub with GNU/MIT license
- sharing data, e.g. at Dryad, Zenodo or Dataverse
- pre-registering, e.g. at OSF or AsPredicted
- commenting openly, e.g. with Hypothes.is
- using shared reference libraries, e.g. with Zotero
- sharing (grant) proposals, e.g. at RIO

Bianca Kramer & Jeroen Bosman *https://101innovations.wordpress.com* DOI: 10.5281/zenodo.1147025

Ecosystem of TOOLS for Open Scholarship:

zenodo

Search

Upload

Communities

ivgr@aqua.dtu.dk

Upload type

required

Publication

Poster

Presentation

Dataset

Image

Video/Audio

Software

Lesson

Physical object

Other

Publication type

Journal article

Publication type.

But, but, but …
Are you CRAZY?

Engaging with Open Science as ECRs: 5 top tips

01. Start at your own pace

There is no 'all or nothing' way to participate – there is a spectrum of engagement

02. Find (or create) your community

Collaboration and community are useful for ECRs.
Your fellow ECRs will see you through!

03. Engage in research advocacy

Help others, be collegiate
Don't pull up the ladder behind you

04. Be as open *as possible*

Not all data can be open, not all data should be open

05. Do what you need to survive

We need to contextualize Open Science in neoliberal academia. There are competing pressures and Open Science is one of them

Source: Pownall M, et al. 2021. Navigating Open Science as Early Career Feminist Researchers Psychology of Women Quarterly. September 2021. doi:10.1177/03616843211029255

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EXERCISE

Image: Vitalii Petrenko/Shutterstock.com

"ALL RESEARCH SHOULD AIM TO BE F.A.I.R."

#FIGSHAREFEST

	GOOD	BAD
FINDABLE	ONLINE DATABASE	FILING CABINET IN A BATH IN THE BASEMENT UNDER A LEAKING PIPE
ACCESSABLE	OPEN ACCESS FOR EVERYONE (NO LOGIN)	THE FILING CABINET ALSO IS HOME TO A NEST OF WILD BADGERS
INTEROPERABLE	ALL DATA IS IN OPEN FORMATS	ALL DOCUMENTS ARE PRINTED IN COMIC SANS AND WRITTEN IN ESPERANTO
REUSEABLE	GOOD META DATA AND SECURELY STORED FOR 10 YEARS	THE PAPER EXPLODES IF IT'S READ

ERRANTSCIENCE.COM

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FAIR & Open Outputs: Data Management Winning Philosophy

Winning Grants … with DMPs

What the"template" asks …

- Fill the "template", like a "checklist"
- DATA = experimental data i.e. draft a DATA management plan (DMP) for FAIR and OPEN DATA
- Submit & Forget: DMP is delivered early in project life
- Issue PIDs

What wins points …

- Go above & beyond the "template" and INTEGRATE in entire project design, from ambition, method, workplan, exploitation strategy
- DATA = all digital outputs i.e. craft a DIGITAL OUTPUTS management plan (DOMP)
- Make the DOMP a "living document" & update at major milestones
- Create a FAIR OUTPUT Collection, version-control & link outputs, monitor re-use, inform your exploitation strategy

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biodiversa
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Surely #OpenScience will never affect Tenure

Please meet the Early Adopters:

Institutions that recruit based on Open Science track record, today:

Managing Director,
LMU Open Science Center

UNIVERSITY OF OREGON

UNIVERSITY OF TORONTO SCARBOROUGH

Keele UNIVERSITY

UBC

Universität Hamburg

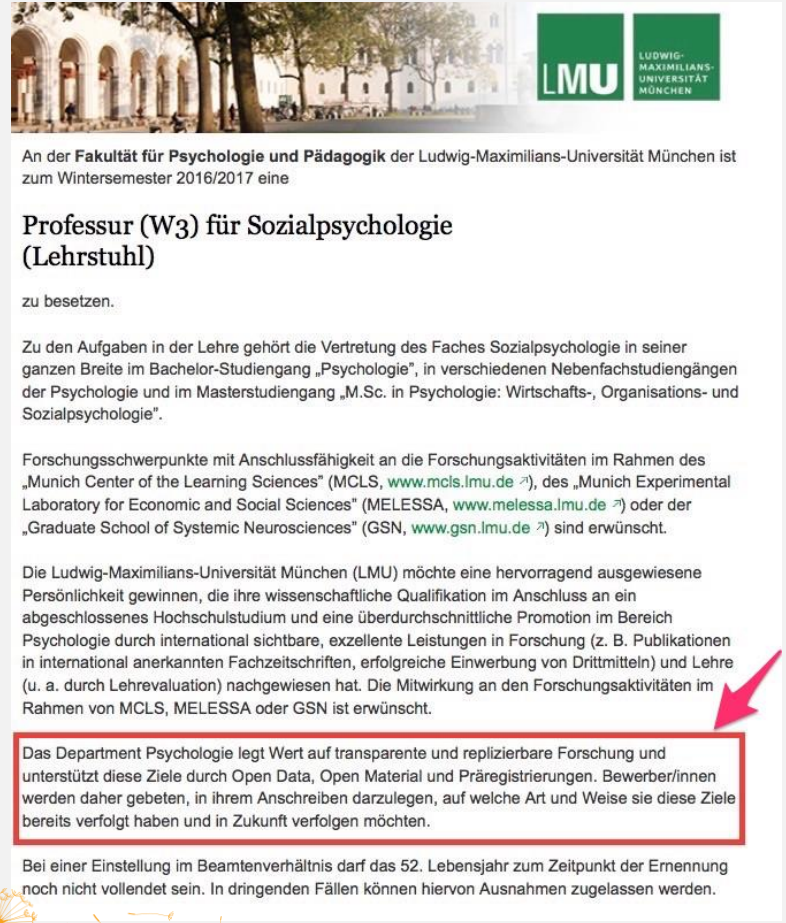
WWU MÜNSTER

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

FAU FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG

TECHNISCHE UNIVERSITÄT DRESDEN

Source: Academic job offers that mentioned open science, https://osf.io/7jbnt/



An der **Fakultät für Psychologie und Pädagogik** der Ludwig-Maximilians-Universität München ist zum Wintersemester 2016/2017 eine

Professur (W3) für Sozialpsychologie (Lehrstuhl)

zu besetzen.

Zu den Aufgaben in der Lehre gehört die Vertretung des Faches Sozialpsychologie in seiner ganzen Breite im Bachelor-Studiengang „Psychologie", in verschiedenen Nebenfachstudiengängen der Psychologie und im Masterstudiengang „M.Sc. in Psychologie: Wirtschafts-, Organisations- und Sozialpsychologie".

Forschungsschwerpunkte mit Anschlussfähigkeit an die Forschungsaktivitäten im Rahmen des „Munich Center of the Learning Sciences" (MCLS, www.mcls.lmu.de), des „Munich Experimental Laboratory for Economic and Social Sciences" (MELESSA, www.melessa.lmu.de) oder der „Graduate School of Systemic Neurosciences" (GSN, www.gsn.lmu.de) sind erwünscht.

Die Ludwig-Maximilians-Universität München (LMU) möchte eine hervorragend ausgewiesene Persönlichkeit gewinnen, die ihre wissenschaftliche Qualifikation im Anschluss an ein abgeschlossenes Hochschulstudium und eine überdurchschnittliche Promotion im Bereich Psychologie durch international sichtbare, exzellente Leistungen in Forschung (z. B. Publikationen in international anerkannten Fachzeitschriften, erfolgreiche Einwerbung von Drittmitteln) und Lehre (u. a. durch Lehrevaluation) nachgewiesen hat. Die Mitwirkung an den Forschungsaktivitäten im Rahmen von MCLS, MELESSA oder GSN ist erwünscht.

Das Department Psychologie legt Wert auf transparente und replizierbare Forschung und unterstützt diese Ziele durch Open Data, Open Material und Präregistrierungen. Bewerber/innen werden daher gebeten, in ihrem Anschreiben darzulegen, auf welche Art und Weise sie diese Ziele bereits verfolgt haben und in Zukunft verfolgen möchten.

Bei einer Einstellung im Beamtenverhältnis darf das 52. Lebensjahr zum Zeitpunkt der Ernennung noch nicht vollendet sein. In dringenden Fällen können hiervon Ausnahmen zugelassen werden.

"

Our department embraces the values of open science and strives for replicable and reproducible research.

For this goal we support transparent research with open data, open material, and pre-registrations. Candidates are asked to describe in what way they already pursued and plan to pursue these goals.

Source: ***http://jobs.zeit.de/jobs/muenchen_professur_w3_fuer_sozialpsychologie_121431.html***
http://www.nicebread.de/open-science-hiring-practices/ accessed Aug 2016

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Q&A

Twitter: @OAforClimate
Mail: ivgr@aqua.dtu.dk
LinkedIN: ivo_grigorov

Resources:

- **UNESCO Recommendation on Open Science** (Nov 2021) https://en.unesco.org/science-sustainable-future/open-science/recommendation

- '**Open Access Publications and Their Impact on Sustainability Development Goals**', In Industry, Innovation and Infrastructure, edited by Walter Leal Filho, Anabela Marisa Azul, Luciana Brandli, Amanda Lange Salvia, and Tony Wall, 783–97. Cham: Springer International Publishing, 2021. https://doi.org/10.1007/978-3-319-95873-6_137

- **Why the world needs to embrace open science** (Oct 2021), by Wu Zhaohui, President, Zhejiang University https://www.weforum.org/agenda/2021/10/why-open-science-is-the-cornerstone-of-sustainable-development/

- **Why open science is critical to combatting COVID-19 (Oct 2020), by OECD** https://www.oecd.org/coronavirus/policy-responses/why-open-science-is-critical-to-combatting-covid-19-cd6ab2f9/

- **The Economic Impacts of Open Science: A Rapid Evidence Assessment**, MDPI Publications 2019, 7(3), 46; https://doi.org/10.3390/publications7030046

- **Open Science Clinique:** *pro-bono* consultation (via Zoom, Friday Lunchtimes) for Early Career Researchers www.openscienceclinique.eu