Frankfurt Open Science Initiative – who we are, what we do, and why we need

YOU!

Frankfurt OPEN SCIENCE

Slides: osf.io/bemy7/

GOETHE UNIVERSITÄT FRANKFURT AM MAIN

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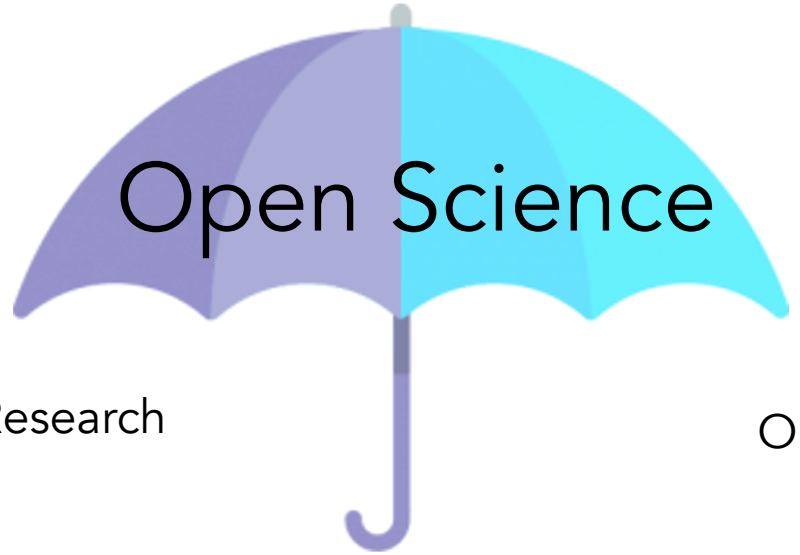
That's me!

- Julia Beitner, M.Sc.
- PhD Candidate at Scene Grammar Lab, Goethe University Frankfurt, Germany
- PhD in cognitive psychology

- Head of Frankfurt Open Science Initiative
- More info: frankfurt-osi.netlify.app & @OpenScienceFFM

Open Science – what do we mean?



Open Access

Open Educational Resources

Open Reproducible Research

Open Source

Citizen Science

Open Material

Open Software

Open Data

...

Open Peer Review

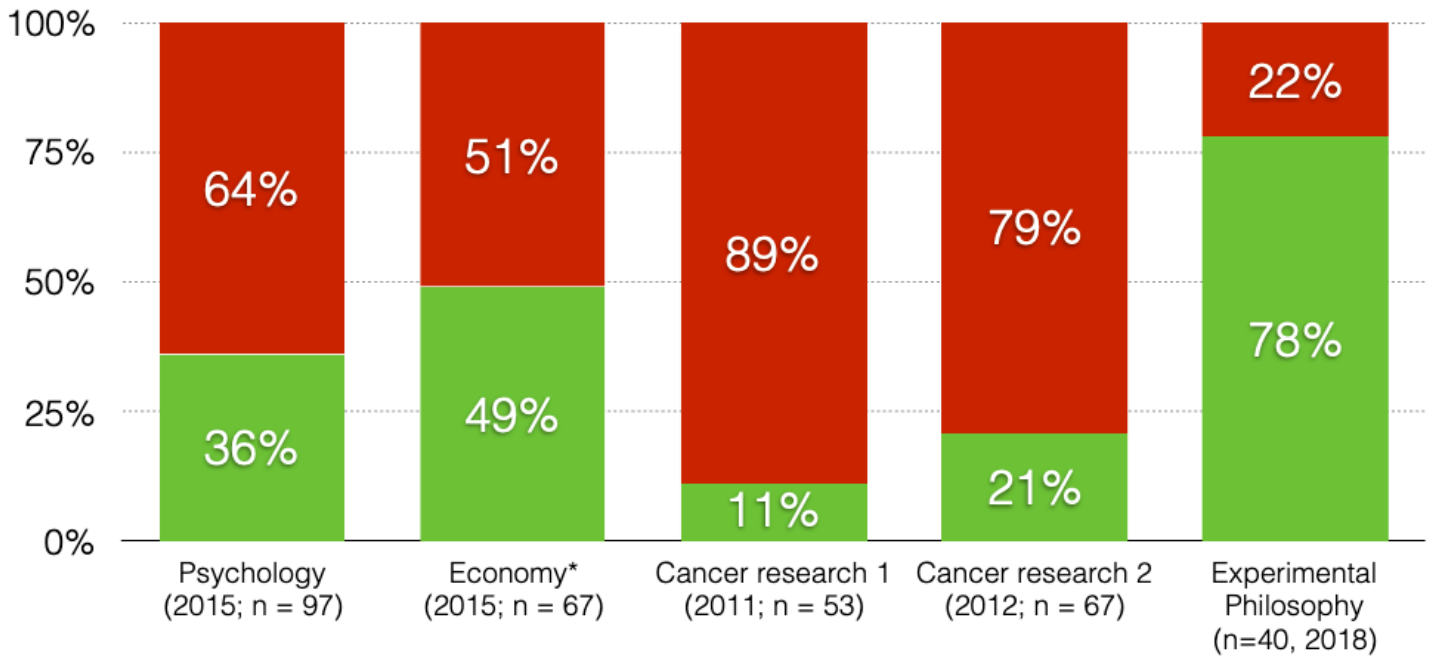
= TRANSPARENCY

Open Science – why do we need it?

- Replication crisis in psychology

- Replication rates of
  - 37% (Open Science Collaboration, 2015)
  - 50% (Many Labs, 2018)

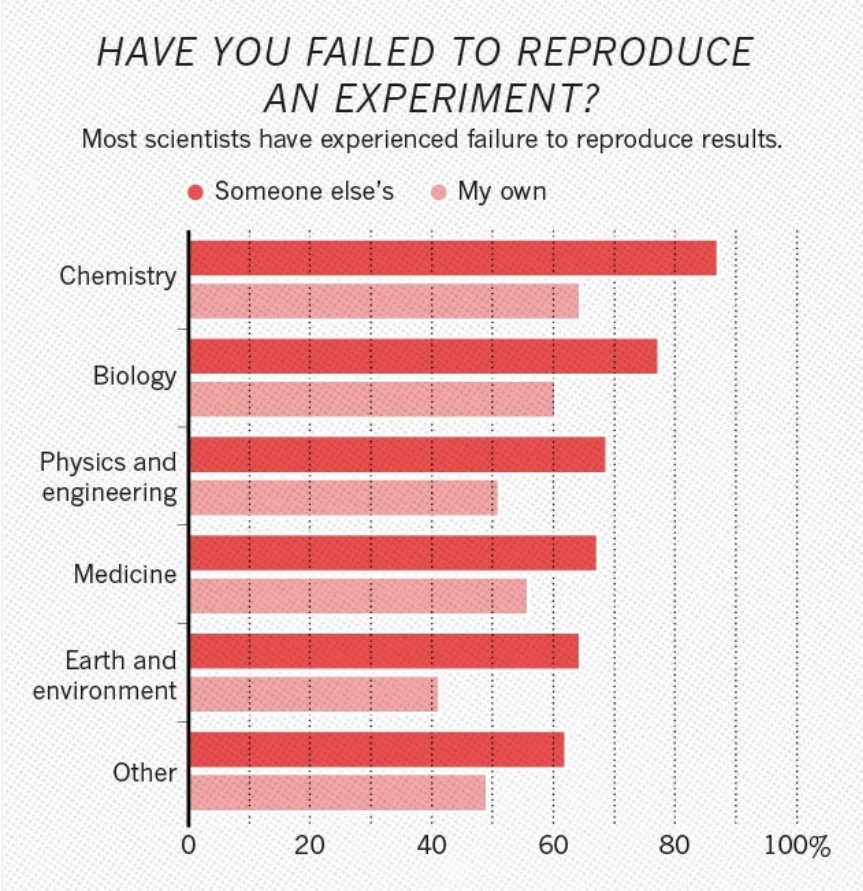
But okay, maybe Psychology is just pseudoscience and is broken, what about other fields???



*** The data on economics is about *reproducibility*; i.e. the attempt to get the same results if you apply the original data analysis on the original data set.**

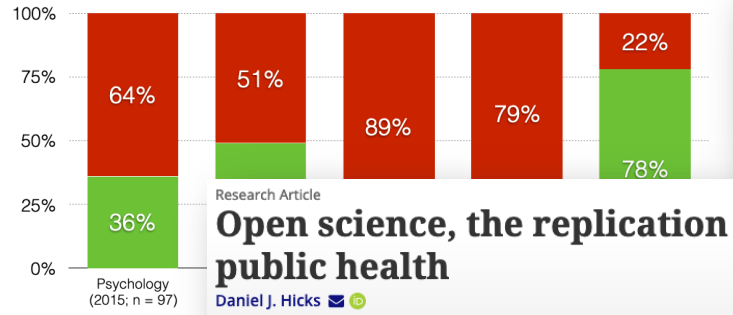
Open Science Collaboration (2015); Chang & Li (2015); Begley, C. G., & Ellis, L. M. (2012). Prinz, F., Schlange, T., & Asadullah, K. (2011); Cova et al. (2018)

Slide copied from Felix Schönbrodt's talk



Nature article

But okay, maybe Psychology is just pseudoscience and is broken, what about other fields???



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Open Science Collaboration (2015); Chang & Li (2015); Begley, C. G., & Ellis, L. M. (2012). Prinz, F., Schlange, T

OPEN ACCESS

ESSAY

Why Most Published Research Findings Are False

John P. A. Ioannidis

Published: August 30, 2005 • https://doi.org/10.1371/journal.pmed.0020124

68,436 Save | 3,458 Citation | 2,916,318 View | 10,484 Share

Research Article

Open science, the replication crisis, and environmental public health

Daniel J. Hicks

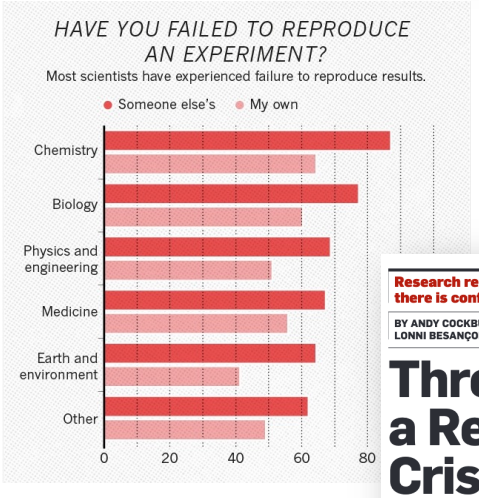
Accepted author version posted online: 30 Jul 2021, Published online: 17 Aug 2021

Download citation https://doi.org/10.1080/08989621.2021.1962713 Check for updates

Does health informatics have a replication crisis?

Enrico Coiera, Elske Ammenwerth, Andrew Georgiou, Farah Magrabi

Journal of the American Medical Informatics Association, Volume 25, Issue 8, August 2018, Pages 963–968, https://doi.org/10.1093/jamia/ocy028



Comment | Published: 04 October 2021

Avoiding a replication crisis in deep-learning-based bioimage analysis

Romain F. Laine, Ignacio Arganda-Carreras, Ricardo Henriques & Guillaume Jacquemet

Nature Methods 18, 1136–1144 (2021)

10k Accesses | 4 Citations | 157 Altm

The Replication Crisis and Chemistry Education Research

Melanie M. Cooper*

View Author Information

Cite this: *J. Chem. Educ.* 2018, 95, 1, 1-2

Publication Date: January 9, 2018

https://doi.org/10.1021/acs.jchemed.7b00907

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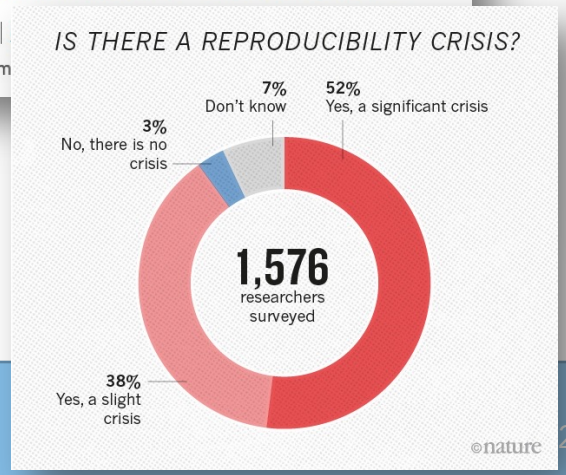
DOI:10.1145/3360311

Research replication only works if there is confidence built into the results.

BY ANDY COCKBURN, PIERRE DRAGICEVIC, LONNI BESANÇON, AND CARL GUTWIN

Threats of a Replication Crisis in Empirical Computer Science



What is an Open Science Initiative (OSI) ?

- Bottom-up grassroot movement
- NOSI (27) – German speaking initiatives
- OSC-NL (12) – The Netherlands
- UK-RN (68) – United Kingdom
- RNs also in Germany, Switzerland, Australia, Slovakia, Portugal, Finland

- Open Scholarship Grassroots Community Networks (> 220)

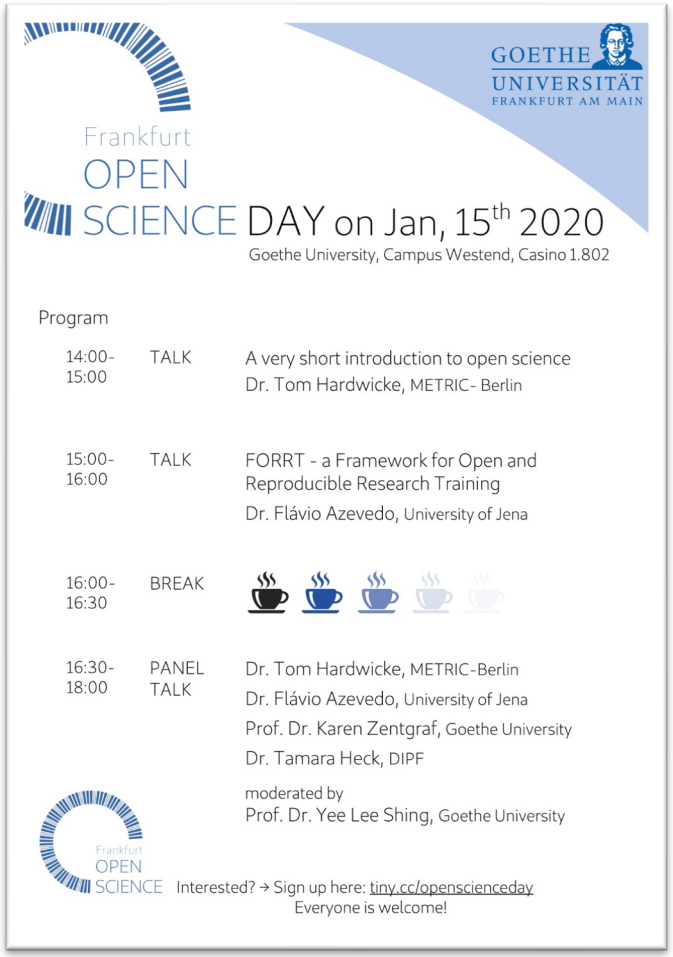
What is an Open Science Initiative (OSI) ?

Frankfurt Open Science Initiative

- Founded in 2018 at the department of psychology at GU
- 12 board members, 16 supporting members
  - No hierarchies
  - Voluntary based
  - Ideal: all levels represented
  - We include all levels from Bachelor students up to full professors

- open for everyone! ☺

What do we organize? – Examples of the Frankfurt OSI



Frankfurt OPEN SCIENCE DAY on Jan, 15th 2020

GOETHE UNIVERSITÄT FRANKFURT AM MAIN

Goethe University, Campus Westend, Casino 1.802

Program

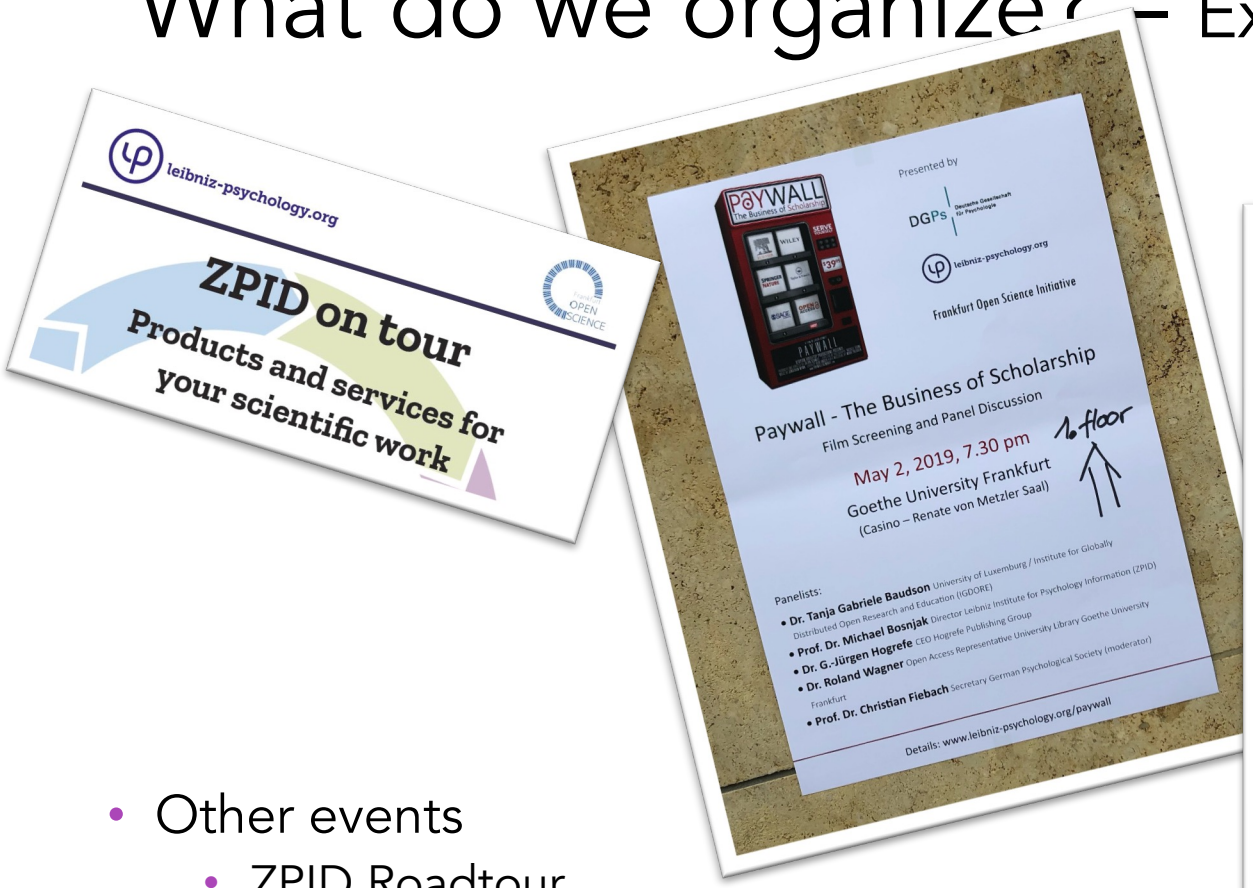
14:00-15:00	TALK	A very short introduction to open science Dr. Tom Hardwicke, METRIC- Berlin
15:00-16:00	TALK	FORRT - a Framework for Open and Reproducible Research Training Dr. Flávio Azevedo, University of Jena
16:00-16:30	BREAK	
16:30-18:00	PANEL TALK	Dr. Tom Hardwicke, METRIC-Berlin Dr. Flávio Azevedo, University of Jena Prof. Dr. Karen Zentgraf, Goethe University Dr. Tamara Heck, DIPF moderated by Prof. Dr. Yee Lee Shing, Goethe University

Frankfurt OPEN SCIENCE Interested? → Sign up here: tiny.cc/openscienceday

Everyone is welcome!

- Events like an Open Science Day
  - 1st in 2018: Open Science in general
  - 2nd in 2020: Open Science in Teaching
  - **Today**: university-wide Open Science Forum

What do we organize? – Examples of the Frankfurt OSI



- Other events
  - ZPID Roadtour
  - Screening of Paywall – The Movie
  - THE repliCATS PROJECT Workshop

What do we organize? – Workshops

- Introduction to preregistration
- Power analyses in psychological science
- Power for linear mixed models
- Design and analysis of replication experiments
- Research data management
- Git/GitHub
- Docker

- …

What do we organize? – ReproducibiliTea Journal Club

- Founded 2018 by Amy Orben, Sophia Crüwell, & Sam Parsons
- By now 103 worldwide
- We were the first one in Germany, now 11
- Now 5th term (3rd online)
- Open Science Café
- Open for EVERYONE

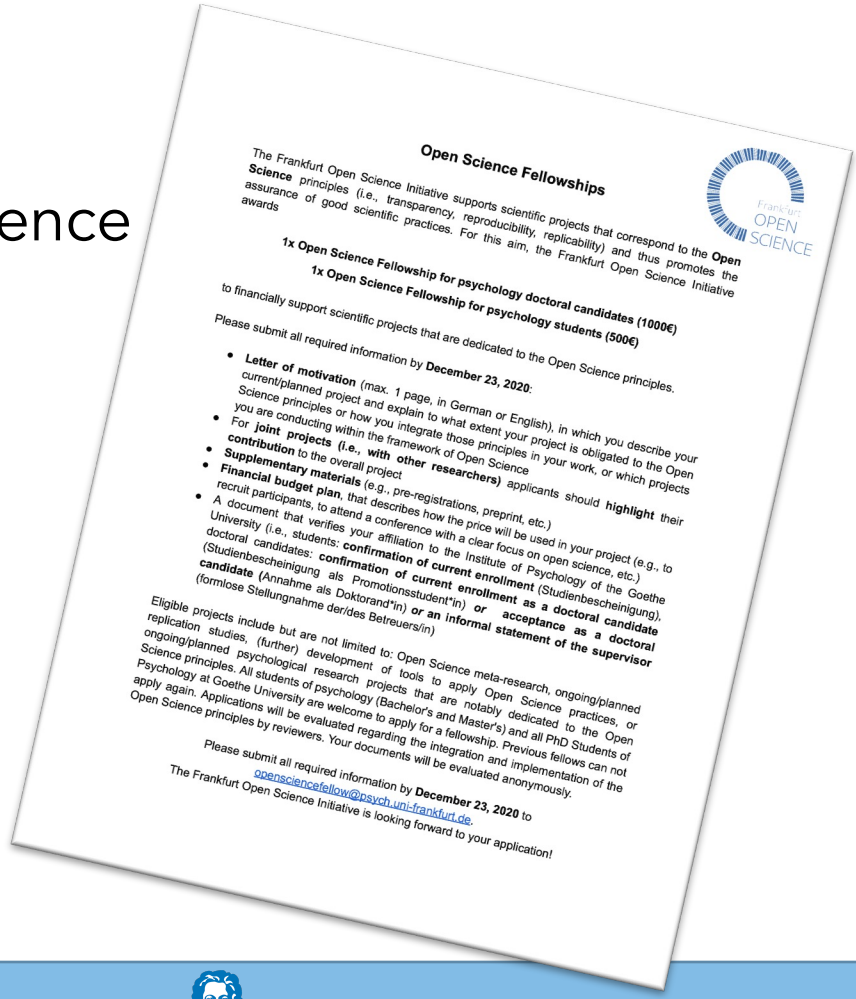
- Very successful
- Very adaptable

What do we organize?
ReproducibiliTea Journal Club

Date	Theme	presented by	Article
Week 1 20.04.22 + Café	**A quick start to open science using a glossary of open science**	Elli Zey, Goethe University	Parsons, S., Azevedo, F.,et al (2022). A community-sourced glossary of open scholarship terms. *Nature Human Behaviour*, *6*(3), 312–318. https://doi.org/10.1038/s41562-021-01269-4
Week 2 04.05.22	**Open Science and Feminism**	Gözem Turan, Goethe University	Palser, E. R., Lazerwitz, M., & Fotopoulou, A. (2022). Gender and geographical disparity in editorial boards of journals in psychology and neuroscience. *Nature Neuroscience*, *25*(3), 272–279. https://doi.org/10.1038/s41593-022-01012-w
Week 3 18.05.22 + Café	**Kick off discussion for computational modeling**	Dr. Francesco Pupillo, Johannes Falck, Goethe University	-
Week 4 01.06.22	**Quality of research code**	Lea Karoza, Goethe University	Trisovic, A., Lau, M. K., Pasquier, T., & Crosas, M. (2022). A large-scale study on research code quality and execution. *Scientific Data*, *9*(1), 60. https://doi.org/10.1038/s41597-022-01143-6
Week 5 15.06.22 + Café	**Is Causal Inference in Nonexperimental Psychology okay?**	Björn Siepe, Goethe University	Grosz, M. P., Rohrer, J. M., & Thoemmes, F. (2020). The Taboo Against Explicit Causal Inference in Nonexperimental Psychology. *Perspectives on Psychological Science, 15*(5), 1243–1255. https://journals.sagepub.com/doi/full/10.1177/1745691620921521
Week 6 29.06.22	**Open Science in an R package**	Aylin Kallmayer, Goethe University	Vuorre, M., & Crump, M. J. (2021). Sharing and organizing research products as R packages. *Behavior research methods*, *53*(2), 792-802. https://doi.org/10.3758/s13428-020-01436-x
Week 7 13.07.22 + Café	**Many Analysts – One Dataset**	Julia Beitner, Goethe University	Botvinik-Nezer, R., Holzmeister, F., et al (2020). Variability in the analysis of a single neuroimaging dataset by many teams. *Nature*, *582*(7810), 84-88. https://doi.org/10.1038/s41586-020-2314-9

What do we organize? – Open Science Fellowships

- For Bachelor/Master students and PhD students
- 500€ & 1000€
- For projects that promote or incorporate Open Science
- Projects can be in the planning phase
- Fellowship is for the project, not the person
- By now, we could support 5 fellows



Open Science Fellowships

The Frankfurt Open Science Initiative supports scientific projects that correspond to the **Open Science** principles (i.e., transparency, reproducibility, replicability) and thus promotes the assurance of good scientific practices. For this aim, the Frankfurt Open Science Initiative awards

1x Open Science Fellowship for psychology doctoral candidates (1000€)

1x Open Science Fellowship for psychology students (500€)

to financially support scientific projects that are dedicated to the Open Science principles.

Please submit all required information by **December 23, 2020**:

- **Letter of motivation** (max. 1 page, in German or English), in which you describe your current/planned project and explain to what extent your project is obligated to the Open Science principles or how you integrate those principles in your work, or which projects you are conducting within the framework of Open Science
- For **joint projects (i.e., with other researchers)** applicants should **highlight** their **contribution** to the overall project
- **Supplementary materials** (e.g., pre-registrations, preprint, etc.)
- **Financial budget plan**, that describes how the price will be used in your project (e.g., to recruit participants, to attend a conference with a clear focus on open science, etc.)
- A document that verifies your affiliation to the Institute of Psychology of the Goethe University (i.e., students: **confirmation of current enrollment** (Studienbescheinigung), doctoral candidates: **confirmation of current enrollment as a doctoral candidate** (Studienbescheinigung als Promotionsstudent*in) **or acceptance as a doctoral candidate** (Annahme als Doktorand*in) **or an informal statement of the supervisor** (formlose Stellungnahme der/des Betreuers/in)

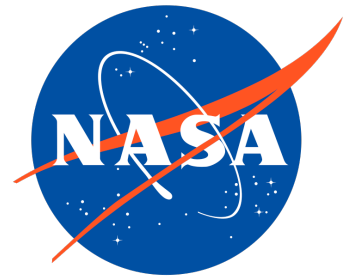
Eligible projects include but are not limited to: Open Science meta-research, ongoing/planned replication studies, (further) development of tools to apply Open Science practices, or ongoing/planned psychological research projects that are notably dedicated to the Open Science principles. All students of psychology (Bachelor's and Master's) and all PhD Students of Psychology at Goethe University are welcome to apply for a fellowship. Previous fellows can not apply again. Applications will be evaluated regarding the integration and implementation of the Open Science principles by reviewers. Your documents will be evaluated anonymously.

Please submit all required information by **December 23, 2020** to opensciencefellow@psych.uni-frankfurt.de.

The Frankfurt Open Science Initiative is looking forward to your application!

Why should you care?

- Open Science is here to stay!
- Even NASA thinks so!



> “Within the TOPS mission, NASA is designating **2023 as the Year of Open Science**, a global community initiative to spark change and inspire open science engagement through events and activities that will shift the current paradigm. ***TOPS is only a starting point***; NASA is making a long term commitment to support building an inclusive open science community over the next decade. – NASA TOPS”

What can you do?

- Get involved!
  - Join the Frankfurt Open Science Initiative
    - We are looking for new people from all departments!
  - Join our ReproducibiliTea Journal Club
    - We can adapt it to your needs or create another one!
  - Subscribe to our OSI-newsletter to never miss any events!
    - Screening of **Paywall – The Movie** in October!
    - **Preregistration workshop** in December!
  - Get in touch with other like-minded people ☺

- **Change is coming and you can be a part of it!**

Thank you for your attention! ☺

- What questions do you have?
- You want to join? Contact me!

09.15-10:45	Julia Beitner, Come in and find out: Kick-off to join the Frankfurt Open Science Initiative	SP 0.04

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supporting member