



# LMU Open Science Center and German Reproducibility Network

Supporting Open Science practices through networks and institutions

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www.nicebread.de www.researchtransparency.org @nicebread303



#### **Better research**

more robust, more credible, less wrong results





#### **Better research practices**

Focus on reproducibility, research transparency, good scientific practice as necessary (though not sufficient) conditions.

### How to change change researcher's behavior?

## How to change behavior: skills + cultural change



5: Policy Require openness

4: Incentives

Reward openness



final research data"

timely release and sharing of

ENSINE Schweizerischer Nationalfonds zur Förderung der wissenschaftlichen Forschung

> "erwartet der SNF, dass Daten [...] auf öffentlich zugänglichen, digitalen Datenbanken archiviert werden"

> > Nationale

Forschungsdaten



"It is recommended to make all research data [...] available for reuse, for example under Creative Commons licence"

**OpenAIRE** 

REGISTRY OF

Search..

**3: Norms** Communities define and communicate what is ,,good'' scientific practice



2: User Interfaces & Experience

Workflows that make it *easy* to do the behaviors

#### I: Implementation

Reliable infrastructures that make is *possible* to do the behaviors

#### 0: Individual factors

Researchers have the necessary skills, knowledge, and motivation to enact a behavior

Based on <a href="https://www.cos.io/blog/strategy-for-culture-change">https://www.cos.io/blog/strategy-for-culture-change</a> by Brian Nosek







## **Mission Statement**



The interdisciplinary LMU Open Science Center has the mission to promote and to foster open science practices at LMU Munich and beyond.

**1. Advanced training and consultation in Open Science**: Modular course material, toolbox on website; talks and expert database; trainthe-trainer workshops

2. Meta-Research:

Interdisciplinary research about research, e.g. about publication bias, academic incentive system, questionable analytical practices, methodological solutions

#### **3.** Change of incentive structures:

Impulses and recommendations, e.g. for job descriptions of professorship positions, changes in PhD agreements and examination regulations

Currently 67 members (most full professors) from 15 disciplines.



https://reproducibilitynetwork.de

A Strategic Community Effort to Promote Transparent Research Practices in Academia

"Network of networks" - umbrella organization.

#### Founding members

DGP5

Deutsche Gesellschaft für Psychologie

**HELMHOLTZAI** ARTIFICIAL INTELLIGENCE COOPERATION UNIT

OSC V

BIHQUEST

#### HELMHOLTZ Open Science

Leibniz Informationszentrum Wirtschaft Leibniz Information Centre for Economics

Netzwerk der Open Science Initiativen

Berlin University Alliance Freie Universität Berlin Humboldt-Universität zu Berlin Technische Universität Berlin Charité – Universitätsmedizin Berlin



We **support researchers** in educating themselves about open science practices, and founding local open science communities.

We connect local or topic-centered Reproducibility Initiatives to a national network, and foster connections between them.



We **advise institutions** on how to embed open science practices in their work.

We **represent the open science community** toward other stakeholders in the wider scientific landscape.

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#### Local nodes

The GRN is primarily made up of local initiatives and stakeholders throughout Germany.



#### 17 local nodes, 5 more in the pipeline

	Initiative		Representative(s)		
and and ards	Open Reproducible Data	0	Anja Eggert	8	y
Open Repeaticable Data Science and Yanshis at the Graduate Academy of the University of Rostack Into Characterization (Soliterization) (Soliterization) (Soliterization) (Solite	Science and Statistics University of Rostock		Frank Krüger	0	y
UNIVERSITÄT JU LÜBECK OPEN SCIENCE INITIATIVE UNIVERSITETET	<b>Open Science Initiative Lübeck</b> Lübeck University	8	Lena Rademacher		8
<ul> <li>Q ↓ ↓</li> <li>↓ ↓<th>Studentische Open Science 😒 Initiative der PsyFaKo (SOSIP)</th><th><u>e</u></th><th>Leonardo Bergmann</th><th></th><th></th></li></ul>	Studentische Open Science 😒 Initiative der PsyFaKo (SOSIP)	<u>e</u>	Leonardo Bergmann		
	Automated Screening Working Group (ScreenIT)	0	Tracey Weissgerber		8
	<b>Clinical Psychological Interventio</b> Freie Universität Berlin	on	Helen Niemeyer		8
Peerspectives     Constant and a series     Constant and a series     Constant and a series     Constant and a series	<b>Peerspectives</b> Berlin Institute of Health	0	Jessica L. Rohmann		8
	<b>Pluricore</b> Berlin Institute of Health, Max Delbrück Center for Molecular Medic	<b>⊗</b> ine	Sebastian Diecke		8
	<b>SPOKES</b> Berlin Institute of Health	6	(Mary) Constance Holman		
	Reproducible MODELing University Potsdam and Internationa Centre for Water Resources and Glob Change	Image: Second sec	Robert Reinecke		
	<b>Open Science Initiative</b> Ruhr University Bochum		Malte Elson		8
	Reproducibility for Everyone (R4E)	8	Susann Auer		8
FORRT	FORRT: Framework for Open and Reproducible Research Train	€ ing	Flavio Azevedo		8





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Gain impact by establishing a network of stakeholders; talk to funders; offer policy consulting; "single entry point" for persons/organizations interested in reproducibility related issues

Establish new communities; advice research

institutions and academic societies on how to

embed open science practices into their workflow

Reproducibility awards

**3: Norms** Communities define and communicate what is ,,good'' scientific practice

5: Policy

Require

openness

4: Incentives

Reward openness

2: User Interfaces & Experience Workflows that make it *easy* to do the behaviors

I: Implementation Reliable infrastructures that make is *possible* to do the behaviors

#### 0: Individual factors

Researchers have the necessary skills, knowledge, and motivation to enact a behavior Collect and share training materials; Train-the-trainer workshops

**DE** German Reproducibility Network

# **Experiences: Chances**



- Lot of latent potential in different scientific communities
  - OSC as a catalyst
  - "Exothermic reaction": Add a little starting energy to release a lot of more energy
- Connecting previously disparate resources
  - Library, computing center, unit for research funding:
     Joint workshops, for example on Open Access, RDM, or funding
  - Interdisciplinary meta-scientific activity (e.g., <u>DFG SPP META-</u> <u>REP</u>)
- Strong interest from researchers: Workshops are always fully booked
- Students are "born reproducible"

# **Experiences: Challenges**



- "Glass ceiling" beyond the early adopters
- Sesame street effect
- Large differences between fields; how to connect to humanities
- "We are already excellent!"
  - Having a dedicated center for good research practices does not imply that a university has catch-up demand for doing good research. In contrary, it shows
- Passive understanding of good scientific practice
  - Good scientific practice often is negatively defined: Do not plagiarize!
  - Our point of view: Good science is more than the absence of fraud.
- Chronically overworked & publication pressured
  - Nobody has time to learn new things and to change the research routine.

