



Enhancing Trust, Integrity and
Efficiency in Research through
next-level Reproducibility



TIER2's activities to foster a next-level funders community in reproducibility

Alexandra Bannach-Brown, PhD

World Conference on Research Integrity – June 4th, 2024



Funded by the European Union.

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission.
Neither the EU nor the EC can be held responsible for them.

TIER2 in a nutshell

TIER2: enhancing Trust, Integrity And Efficiency In Research through next-level Reproducibility

- Investigate reproducibility in social, life, computer sciences, plus funder and publisher contexts
- Co-creative approach to creating and evaluating new reproducibility tools and practices
- €2mil from EC Horizon Europe and UKRI
- January 2023 to December 2025



<http://tier2-project.eu/>



TIER2 methodological steps

NETWORK & EMPOWER

Co-creation - Strategic Alignment
Training - Skills - Reproducibility Hub

6

1

CONCEPTUALISE

Conceptual framework for epistemic diversity across cases

Scope the evidence
Inventory tools and practices

2

DESIGN

Future studies to prioritise design elements

Co-creation of pilots

Develop assessment framework

3

IMPLEMENT

Develop & pilot tools for

- Researchers
- Publishers
- Funders

to enable & monitor reproducibility

4

ASSESS

Implement pilot assessment framework

Synthesise findings to evaluate gains & savings

5

RECOMMEND & REFLECT

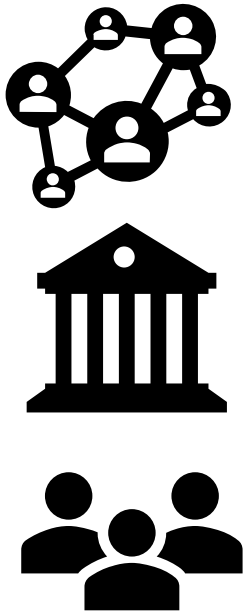
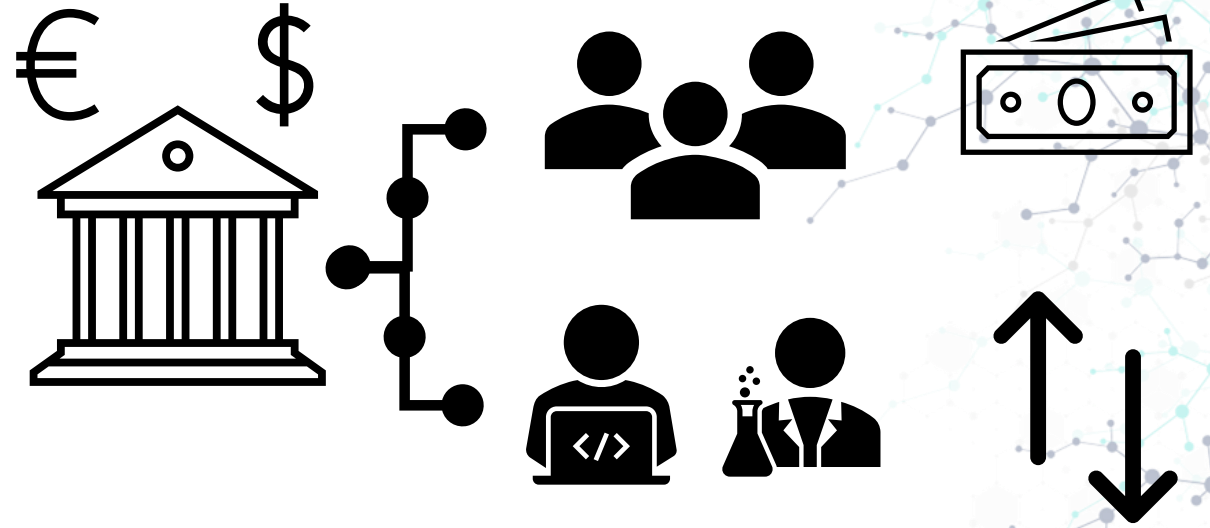
Co-create future roadmap & policy recs

Reflect on TIER2 radical reproducibility practices

USE CASES

Social Sciences - Life Sciences - Computer Science/AI
Publishers - Funders

TIER2 Funder's Forum



Funder's Forum – October 2023

- Facilitate knowledge sharing
- Identify actions and policies already in place
- Facilitate coordinated efforts around repro at a funding level



“Quest for reproducibility - Forming a next-level funders community”: A summary of the first TIER2 funder workshop

AUTHORS:

ALEXANDRA BANNACH-BROWN ● FRIEDERIKE ELISABETH KOHRS ●
BARBARA LEITNER ● JOERI TIJDINK ●

DOI:10.17605/OSF.IO/RDQ3G

 Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the EU nor REA can be held responsible for them.



Pilot 5 – Reproducibility Promotion Plan for Funders (RPP4F)

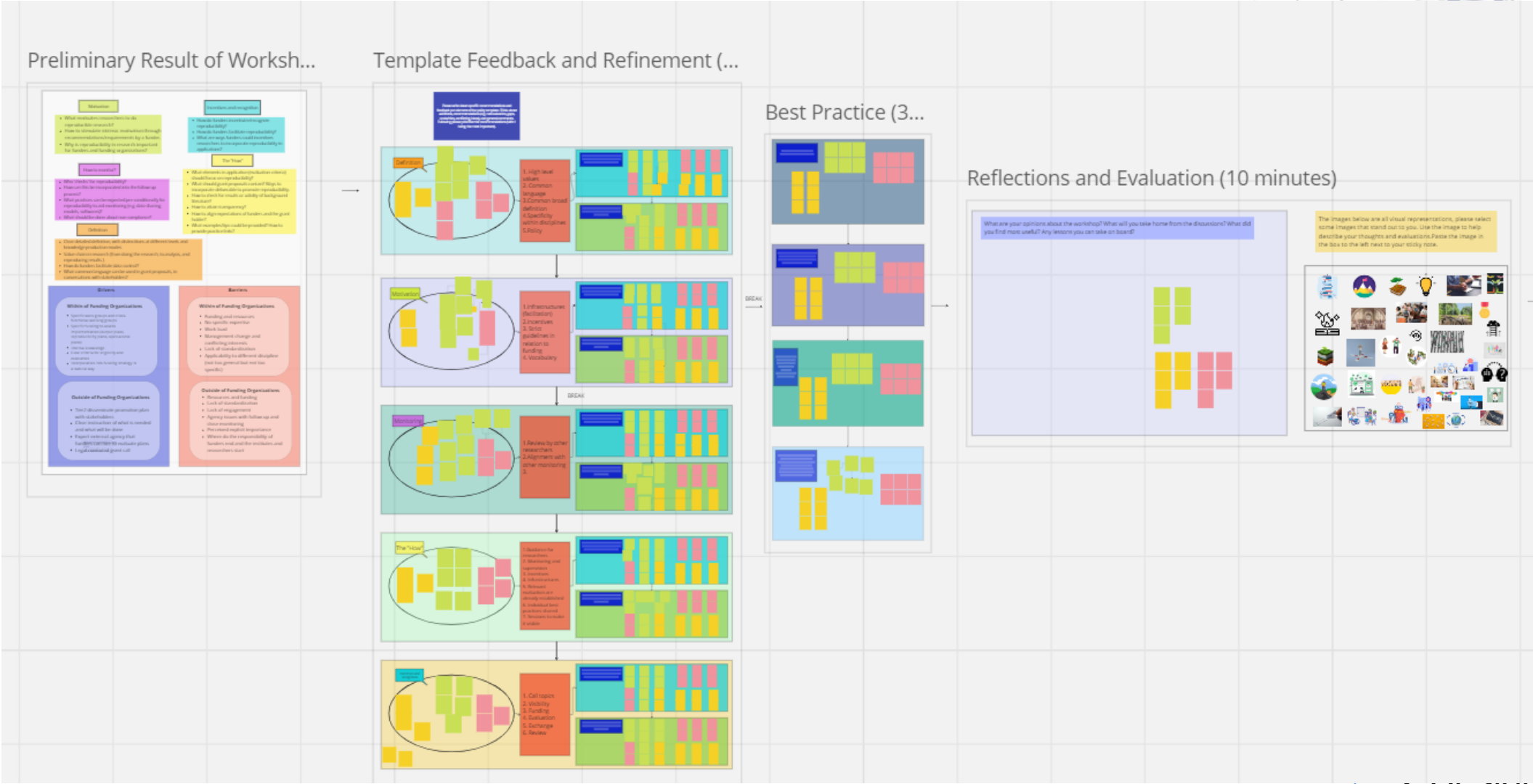
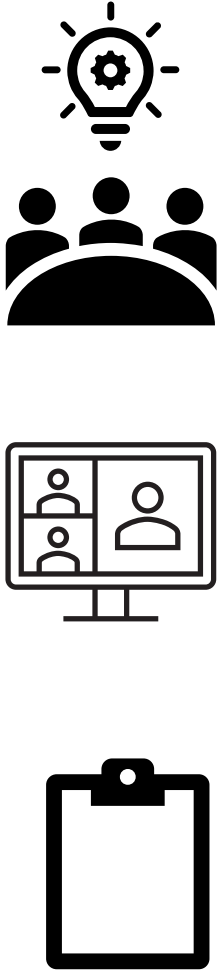


- Research question: What can funders do to foster reproducibility?
 - What does policy in the form of a reproducibility promotion plan look like?



- Aim: Develop a policy template with recommendations for funders to foster reproducible practices in the research they fund
- Aim: Identify how the RPP4F can be applied & barriers and enablers for implementation

Co-creative Design Methods



Co-creation of Reproducibility Promotion Plan (RPP4F)



Co-Creative Workshop 1

- Discussion: Prioritise main reproducibility themes & actions



Co-Creative Workshop 2

- Discussion: Develop specific recommendations & barriers and enablers



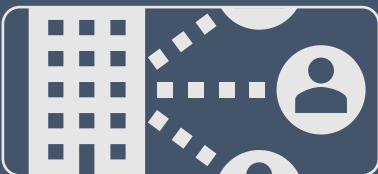
Draft Reproducibility Promotion Plan for Funders

- Gather wider community feedback



Piloting Round 1

- Initial Implementation



Piloting Round 2 & 3

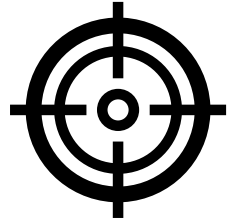
- Implementation & Evaluation @ 6 Months & 1 Year

2 Design

3 Implement

4 Assess

Themes of the RPP Template



Definitions of Reproducibility

- Common language allowing for bottom-up domain-specific definitions that align with funders high level values & policy.

The „How“

- Guidance for researchers with best practices
- Utilise existing infrastructure, integrate into evaluation, to reduce burden in monitoring and supervision/guidance

Motivation

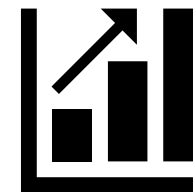
- With targeted language, funder rationale for importance of repro is clear, facilitating researcher motivation

Incentives & Rewards

- Increasing visibility, build repro language and incentives into call topics, funding budget lines, and evaluation criteria
- Strategies to encourage vs require, in line with funder approaches

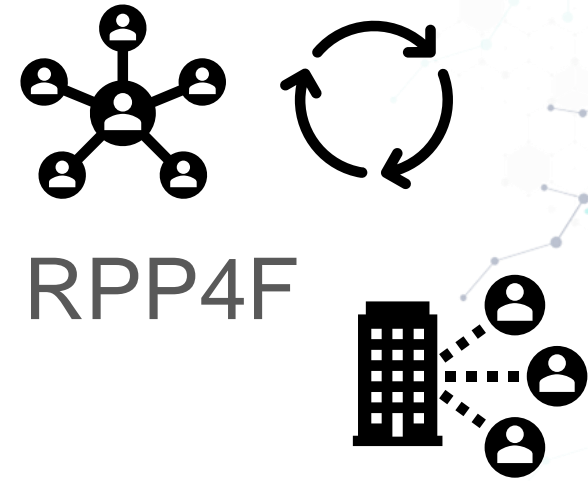
Monitoring

- Aligning repro monitoring with existing policies & infrastructure, and coordinate with existing peer review processes



Next steps

- End product: RPP template + recommendations for implementation in different contexts
- Community Feedback
- Piloting: working with funders to use the RPP4F template to create their own RPP
- Call to action – Join the TIER2 Funders Forum



Acknowledgements



Barbara Leitner



Joeri Tjeldink



Friederike Kohrs



Thank you to our funders for their dedicated co-creative input!

TIER2 receives funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101094817.

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the EU nor REA can be held responsible for them.



Funded by the European Union.

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the EU nor the EC can be held responsible for them.



Thank you & Questions

Alexandra Bannach-Brown, PhD

Alexandra.Bannach-Brown@charite.de

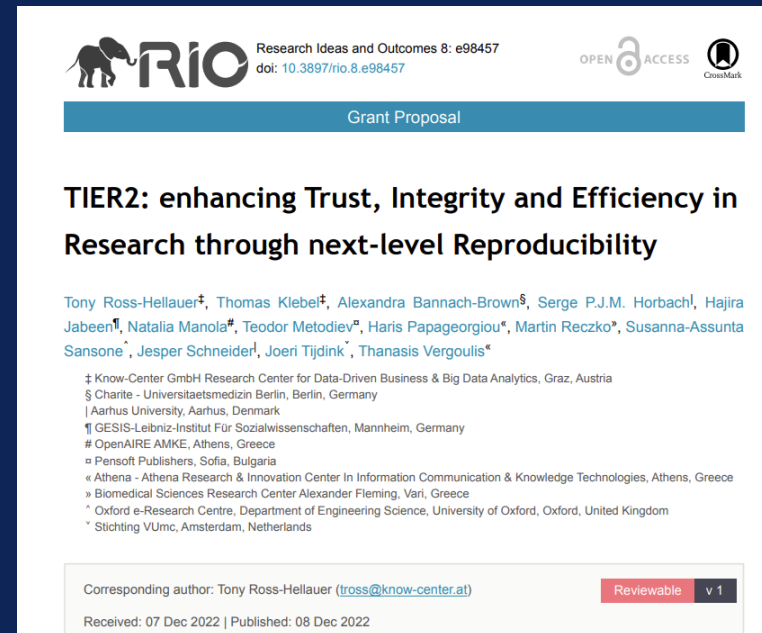
 TIER2 Project

 <https://tier2-project.eu/>



 **BIH QUEST**
Center for Responsible Research

Strategic priorities: The TIER2 approach



The screenshot shows the header of a RIO grant proposal. It includes the RIO logo (an elephant), the text "Research Ideas and Outcomes 8: e98457" and "doi: 10.3897/rio.8.e98457", and icons for "OPEN ACCESS" and "CrossMark". Below the header is a blue bar with the text "Grant Proposal". The main title is "TIER2: enhancing Trust, Integrity and Efficiency in Research through next-level Reproducibility". The authors listed are Tony Ross-Hellauer, Thomas Klebel, Alexandra Bannach-Brown, Serge P.J.M. Horbach, Hajira Jabeen, Natalia Manola, Teodor Metodiev, Haris Papageorgiou, Martin Reczko, Susanna-Assunta Sansone, Jesper Schneider, Joeri Tjink, and Thanasis Vergoulis. A list of affiliations follows, including Know-Center GmbH, Charite - Universitaetsmedizin Berlin, Aarhus University, GESIS-Leibniz-Institut, OpenAIRE AMKE, Pensoft Publishers, Athena - Athena Research & Innovation Center, Biomedical Sciences Research Center Alexander Fleming, Oxford e-Research Centre, and Stichting VUmc. At the bottom, it identifies the corresponding author as Tony Ross-Hellauer (tross@know-center.at) and includes a "Reviewable v 1" badge. The submission and publication dates are "Received: 07 Dec 2022 | Published: 08 Dec 2022".

Research Ideas and Outcomes 8: e98457
doi: 10.3897/rio.8.e98457

OPEN ACCESS CrossMark

Grant Proposal

TIER2: enhancing Trust, Integrity and Efficiency in Research through next-level Reproducibility

Tony Ross-Hellauer[‡], Thomas Klebel[‡], Alexandra Bannach-Brown[§], Serge P.J.M. Horbach[‡], Hajira Jabeen[¶], Natalia Manola[#], Teodor Metodiev[‡], Haris Papageorgiou^{*}, Martin Reczko^{*}, Susanna-Assunta Sansone[^], Jesper Schneider[‡], Joeri Tjink[~], Thanasis Vergoulis^{*}

[‡] Know-Center GmbH Research Center for Data-Driven Business & Big Data Analytics, Graz, Austria
[§] Charite - Universitaetsmedizin Berlin, Berlin, Germany
[‡] Aarhus University, Aarhus, Denmark
[¶] GESIS-Leibniz-Institut Für Sozialwissenschaften, Mannheim, Germany
[#] OpenAIRE AMKE, Athens, Greece
[‡] Pensoft Publishers, Sofia, Bulgaria
[«] Athena - Athena Research & Innovation Center In Information Communication & Knowledge Technologies, Athens, Greece
[»] Biomedical Sciences Research Center Alexander Fleming, Vari, Greece
^{*} Oxford e-Research Centre, Department of Engineering Science, University of Oxford, Oxford, United Kingdom
[^] Stichting VUmc, Amsterdam, Netherlands

Corresponding author: Tony Ross-Hellauer (tross@know-center.at)

Reviewable v 1

Received: 07 Dec 2022 | Published: 08 Dec 2022

Ross-Hellauer T et al. (2022) TIER2: enhancing Trust, Integrity and Efficiency in Research through next-level Reproducibility. Research Ideas and Outcomes 8: e98457. <https://doi.org/10.3897/rio.8.e98457>

Priorities for Reproducibility Reform



1. Frame reproducibility as a reformation

Ditch the 'crisis' narrative and reframe debate to emphasize the opportunities possible through a broad holistic movement towards reproducibility reformation



2. Centre epistemic diversity

Better understand the meanings, implications and conditions of/for reproducibility across disciplinary, methodological, geographic and stakeholder contexts



3. Systematize the evidence

Foster (systematic) experimentation across, between and within contexts to generate comparative findings, inform/cross-pollinate interventions, identify trade-offs



4. Collaborate to boost capacity

Network existing initiatives across dimensions of research to build capacities and harness network effects, especially by empowering the Reproducibility Networks



5. Minimize unintended consequences

Be alert to possible negative impacts and trade-offs, and work to maximize equitable transition, especially through global dialogue and open infrastructures/services