3rd Open Science Train the Trainer Bootcamp

22nd-26th May 2023

Horizon Europe recommended practices

Antónia Correia, Minho University

Attribution 4.0 International

@openaire_eu

Open Science practices

What?	How?	Mandatory in all calls/recommended
Early and open sharing of research	Preregistration, registered reports, preprints, etc.	Recommended
Research output management	Data management plan (DMP)	**Mandatory**
Measures to ensure reproduciblity of research outputs	Information on outputs/tools/instruments and access to data/results for validation of publications	**Mandatory**
Open access to research outputs through deposition in trusted repositories	• Open access to publications • Open access to data • Open access to software, models, algorithms, workflows etc.	• **Mandatory** for peer-reviewed publications • **Mandatory** for research data **but** with exceptions ('as open as possible…') • Recommended for other research outputs
Participation in open peer-review	Publishing in open peer-reviewed journals or platforms	Recommended
Involving all relevant knowledge actors	Involvement of citizens, civil society and end-users in co-creation of content (e.g. crowd-sourcing, etc.)	Recommended

- Open science practices listed in the template for proposals (section excellence>methodology)
- Non-exhaustive list
- Mandatory in all calls: Model Grant Agreement or call requirement; all the rest recommended

Alea Lopez de San Roman, Dagmar Meyer, Emilie Hermans, & Ellen Leenarts. (2021, September 22). Horizon Europe train-the-trainer workshop. Open Science Fair 2021 (OSFair2021). Zenodo. https://doi.org/10.5281/zenodo.5549524

Open Peer Review

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Open Peer Review definitions

A scholarly review mechanism providing **disclosure of any combination of author and referee identities, as well as peer-review reports and editorial decision letters, to one another or publicly at any point during or after the peer review or publication process**. It may also refer to the removal of restrictions on who can participate in peer review and the platforms for doing so. Note that 'open peer review' has been used interchangeably to refer to any, or all, of the above practices.

https://forrt.org/glossary/open-peer-review/

[Open peer review] include(s) many aspects of evaluation and quality assessment. We have adopted a broad **working definition of what constitutes a 'peer'** to mean those with expertise or significant interest in a topic. (…) Similarly, peer review also includes **informal responses, questions and comments posted on social media, pre-print servers, e-journals or other places online in response to a given research output**.

Woods, H. B., Brumberg, J., Kaltenbrunner, W., Pinfield, S., & Waltman, L. (2022, February 8). Innovations in peer review in scholarly publishing: a meta-summary. https://doi.org/10.31235/osf.io/qaksd

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Open Peer Review

Why is OPR important?

Six good reasons

OPR helps support the transition to Open Science by making all aspects of the research lifecycle more transparent. OPR offers a number of additional benefits.

Click the plus sign to expand the text box

- + Transparency
- + Speed
- + Reliability
- + Consistency
- + Context
- + Motivation

Box 1. Open peer review oath.

Principle 1: I will sign my name to my review

Principle 2: I will review with integrity

Principle 3: I will treat the review as a discourse with you; in particular, I will provide constructive criticism

Principle 4: I will be an ambassador for the practice of open science

Aleksic J, Alexa A, Attwood TK et al. An Open Science Peer Review Oath [version 2; peer review: 4 approved, 1 approved with reservations]. F1000Research 2015, 3:271 https://doi.org/10.12688/f1000research.5686.2

https://www.fosteropenscience.eu/learning/open-peer-review

COVID impact on peer review

Technology & Ideas

A Pandemic Moves Peer Review to Twitter

The coronavirus has transformed how scientific research findings are communicated. Is that good? Will the changes stick?

By Justin Fox
5 de maio de 2020, 16:46 WEST

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https://www.bloomberg.com/opinion/articles/2020-05-05/coronavirus-research-moves-faster-than-medical-journals

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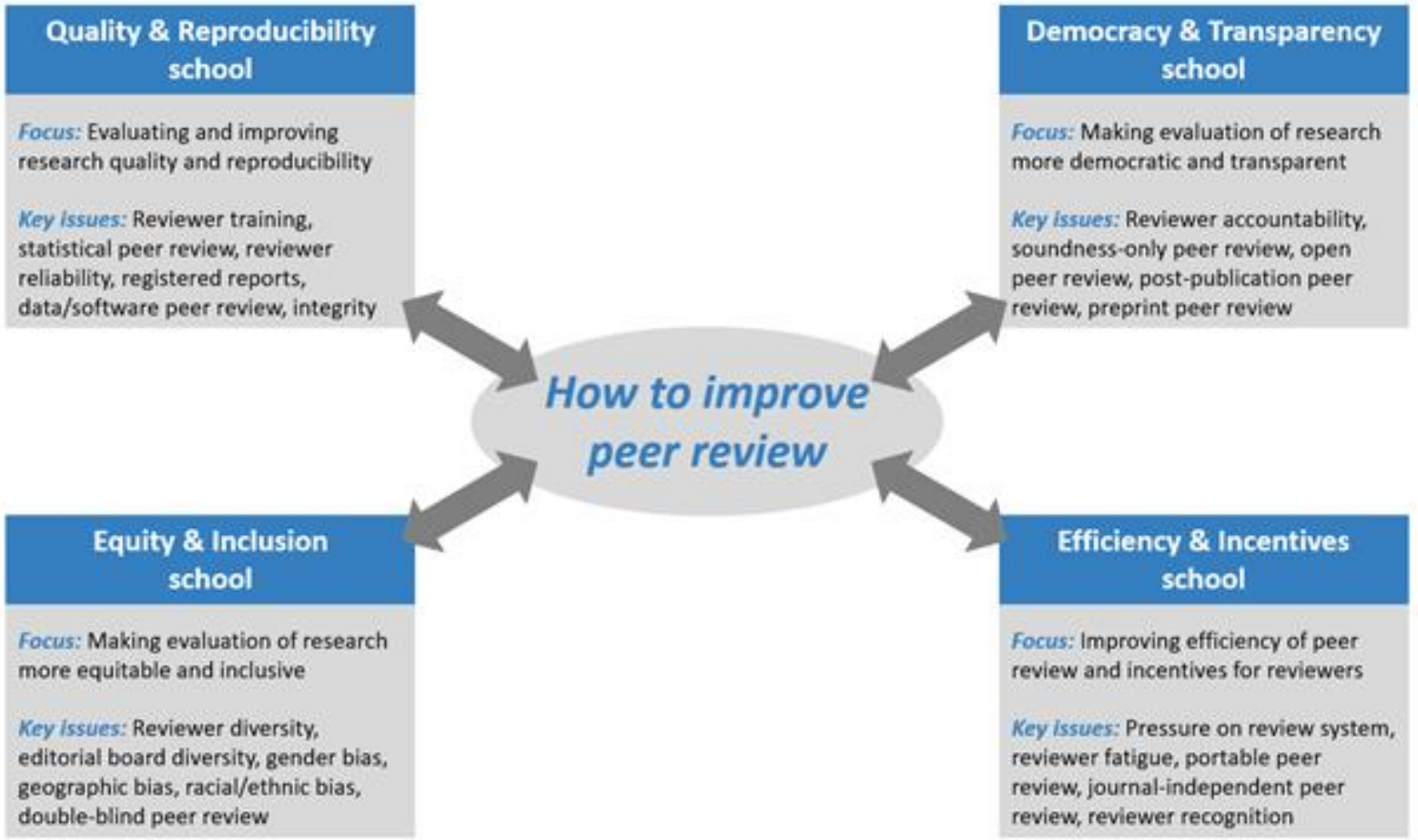
COVID-19 Publishers Open Letter of Intent – Rapid Review

On 27 April 2020, a group of publishers and scholarly communications organisations announced a joint initiative to maximize the efficiency of peer review, ensuring that key work related to COVID-19 is reviewed and published as quickly and openly as possible. OASPA fully supports this collaborative approach and is pleased to host the Open Letter of Intent below.

27 April 2020 (updated 17 December 2020)

https://oaspa.org/covid-19-publishers-open-letter-of-intent-rapid-review/

Peer review needs a reform



https://blogs.lse.ac.uk/impactofsocialsciences/2022/03/24/there-are-four-schools-of-thought-on-reforming-peer-review-can-they-co-exist/

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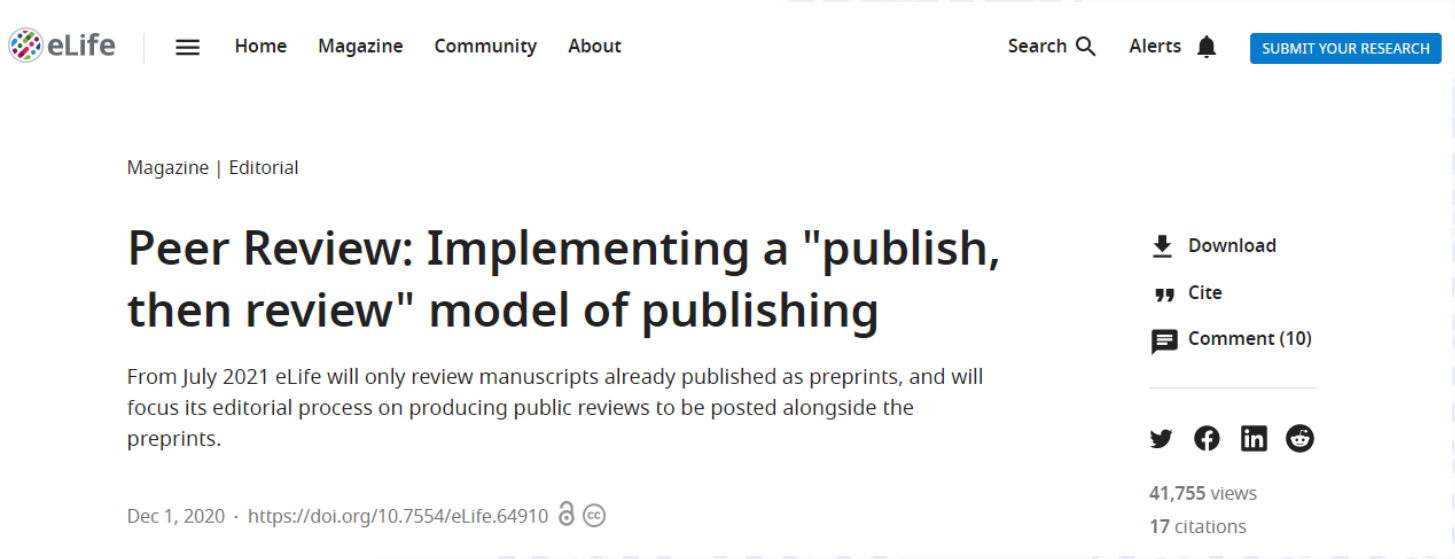
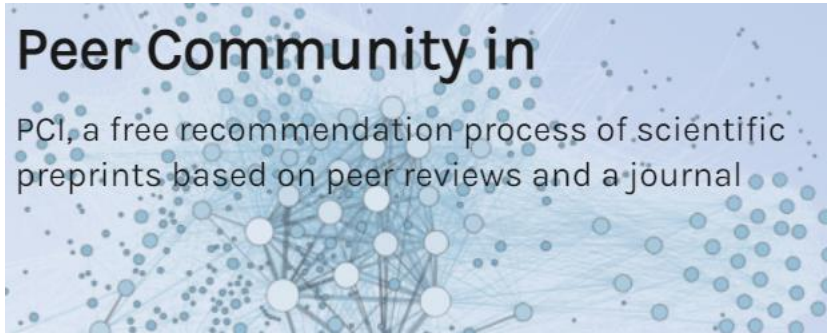
Publish, then review

“a recent internal analysis showed that nearly 70% of papers under review at eLife were already available on bioRxiv, medRxiv or arXiv.
This is a major milestone. It means that **for all practical purposes eLife is no longer a publisher: rather, eLife is now an organization that reviews and certifies papers that have already been published**. We welcome this moment, and the long-awaited opportunity it provides to replace the traditional "review, then publish" model developed in the age of the printing press with a **"publish, then review" model optimized for the age of the internet**. ”



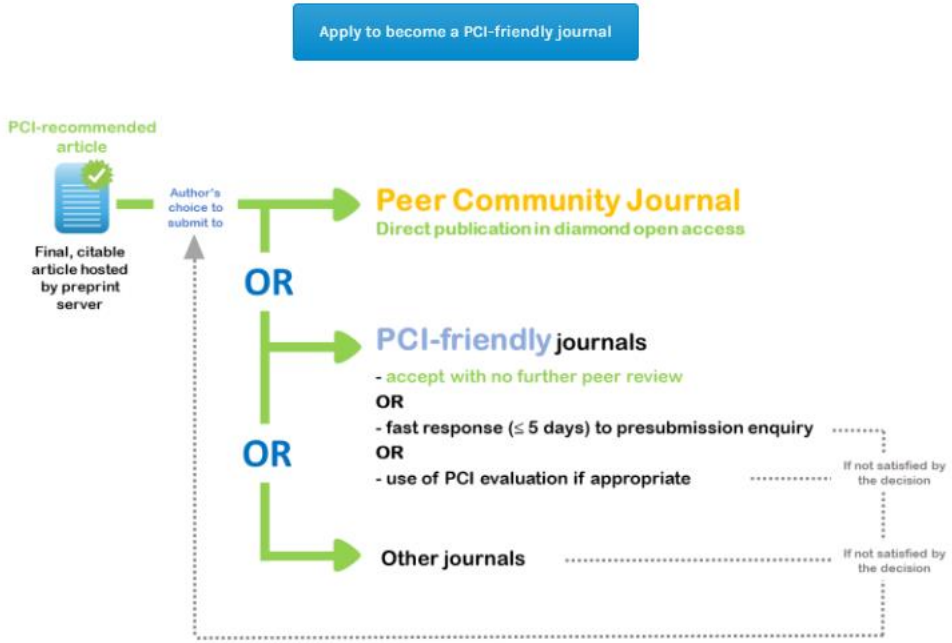
https://elifesciences.org/articles/64910

“Publish, then review” approach



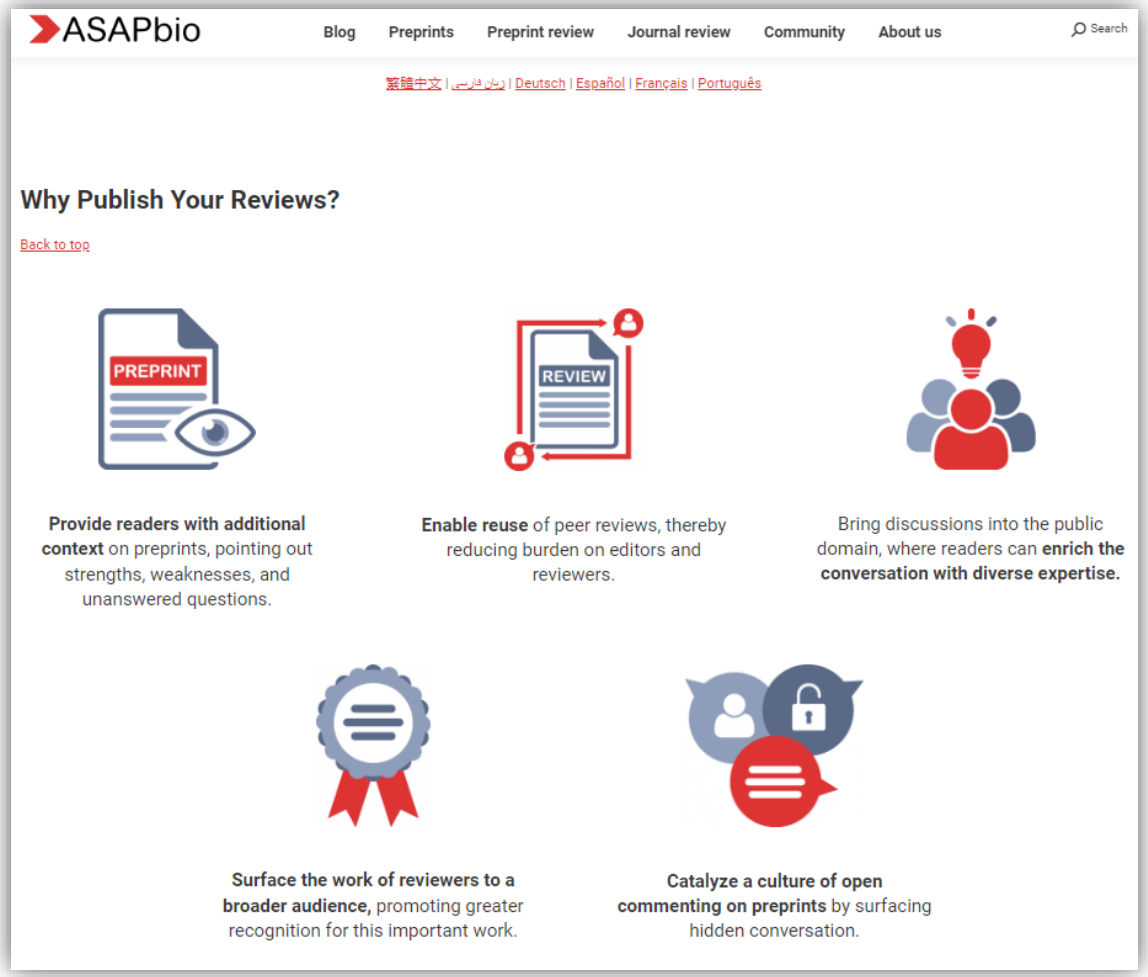
Following submission by authors, the thematic PCIs evaluate preprints in their scientific fields based on rigorous peer-review. After evaluation, the PCIs may recommend those preprints, to make them complete, reliable and citable articles, without the need for publication in ‘traditional’ journals. Authors who need to publish their article in a journal can publish it for free in Peer Community Journal or submit it to a PCI-friendly or other journal.

Thematic PCIs are entitled *Peer Community in* X, e.g. – *Peer Community in* Evolutionary Biology (PCI Evol Biol) and *Peer Community in* Ecology (PCI Ecol). See the list of all current PCIs.



[Peer Community in]

Publish your reviews



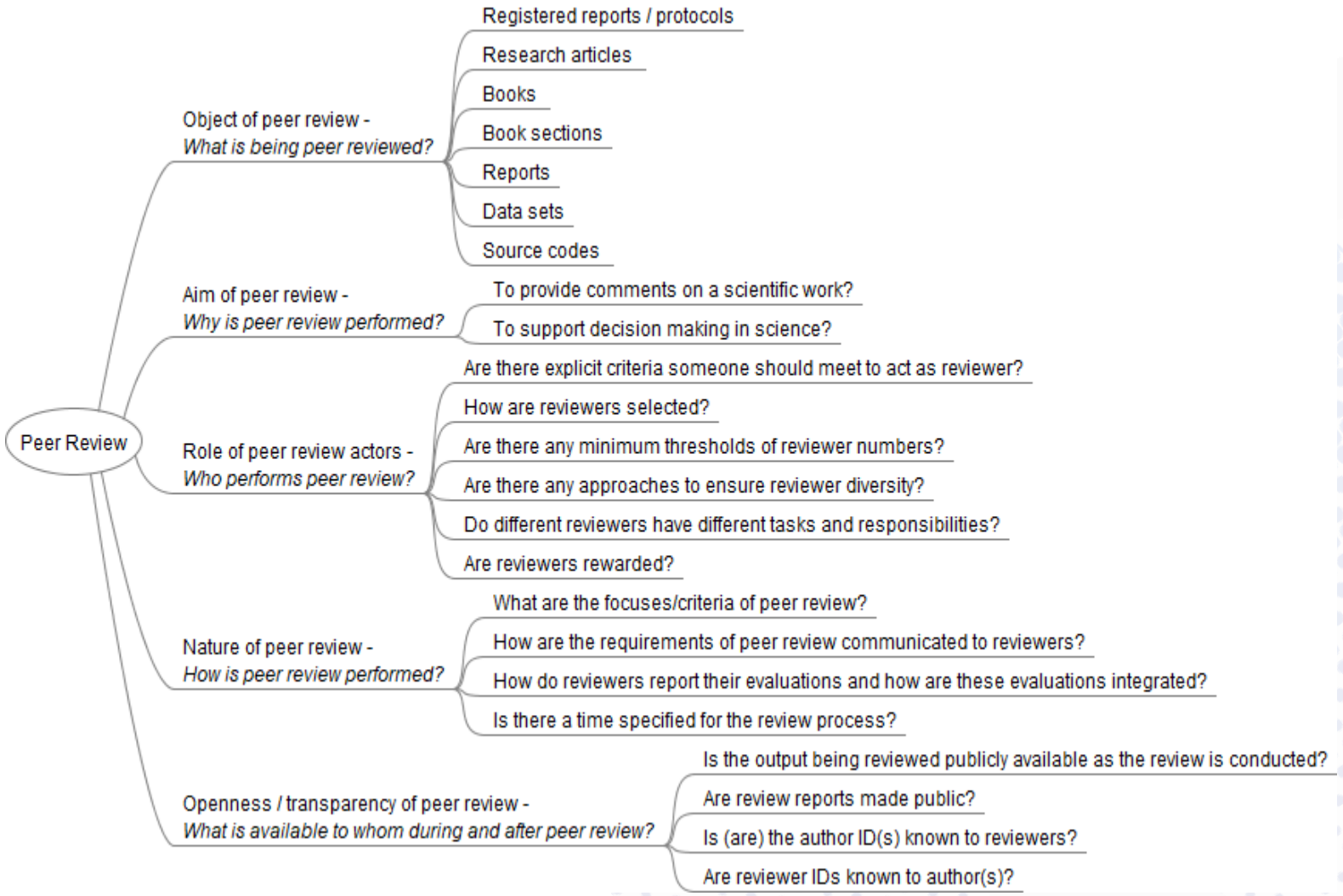
[Asapbio]

Publish Your Reviews pledge

Fill out this form to sign the Publish Your Reviews pledge:

"When a journal invites me to review an article that is available as a preprint, I will publish my review alongside the preprint. I will make sure that the published version of my review does not include the journal name, a recommendation for publication, or other confidential information."

Innovations in peer review



Kaltenbrunner, W., Pinfield, S., Waltman, L., Woods, H. B., & Brumberg, J. (2022, January 22). Innovating peer review, reconfiguring scholarly communication: An analytical overview of ongoing peer review innovation activities. https://doi.org/10.31235/osf.io/8hdxu

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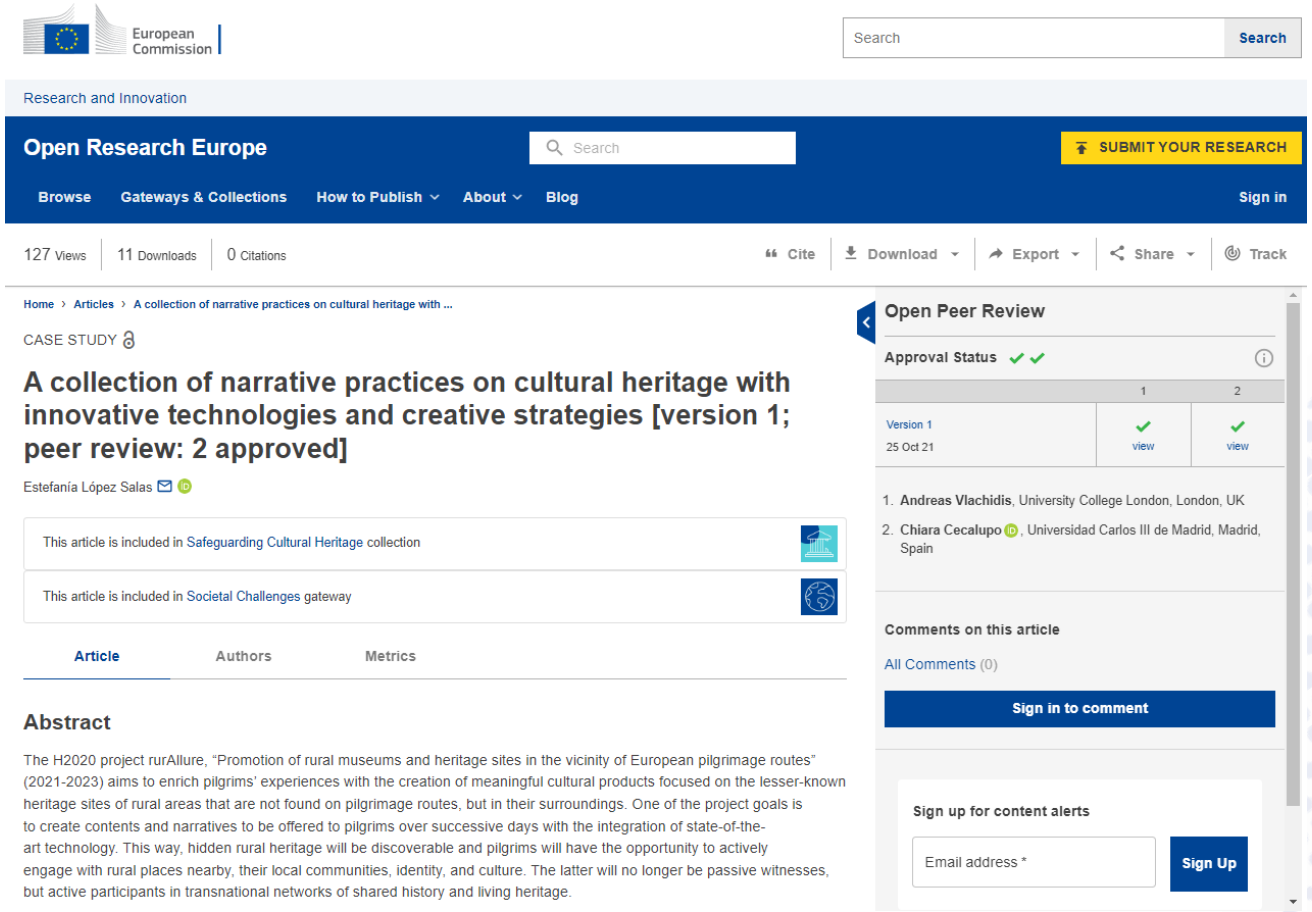
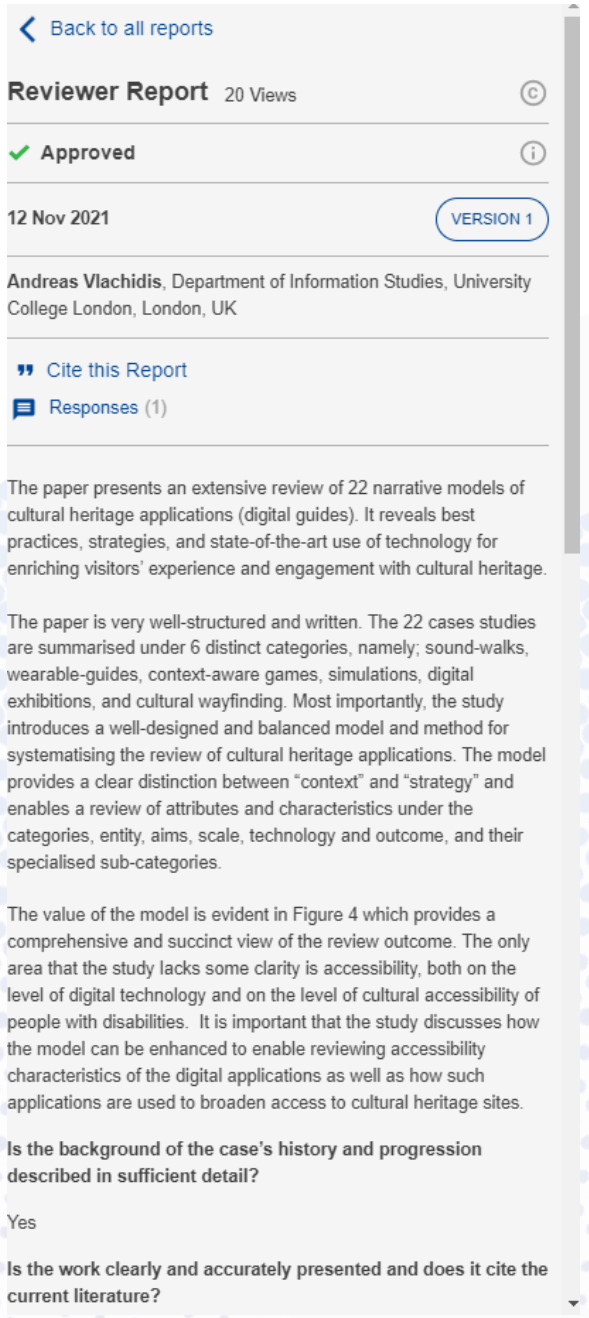
Open Peer Review within ORE

https://open-research-europe.ec.europa.eu/for-referees/incentives/

https://youtu.be/aEMLEZ-FKIc

Published article with reviews





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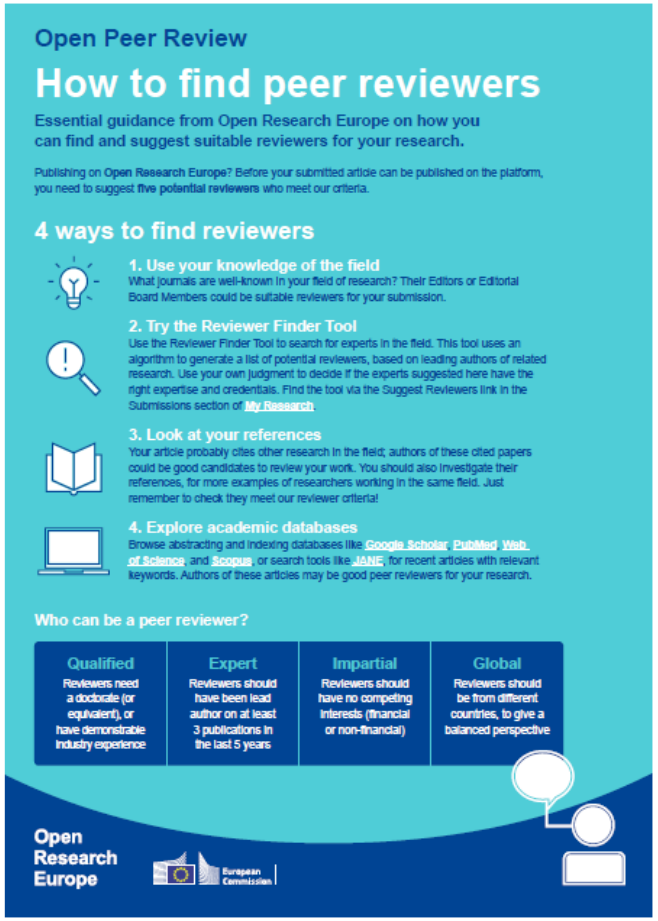
Infographics



How to find peer reviewers

How does peer review work at Open Research Europe?

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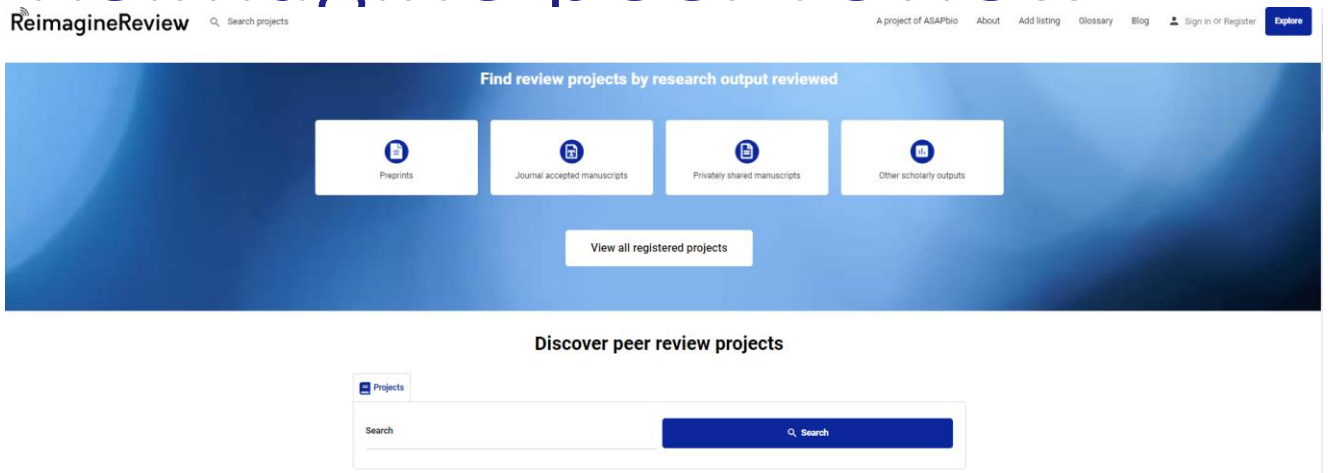
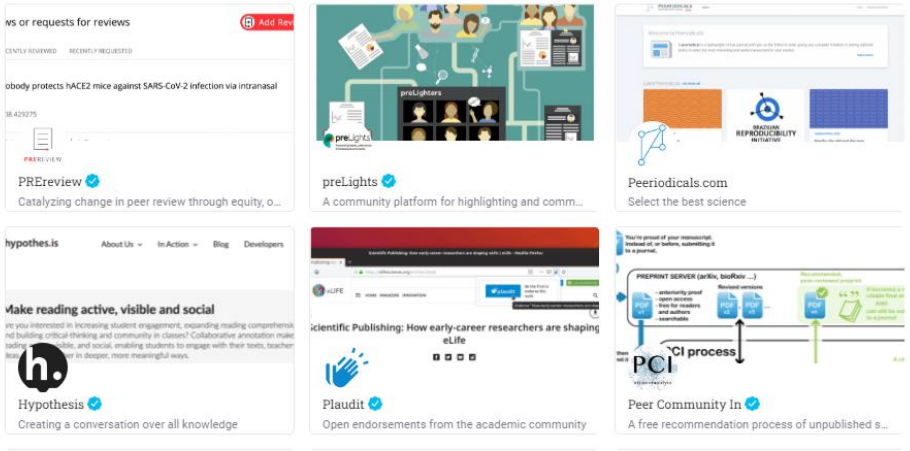
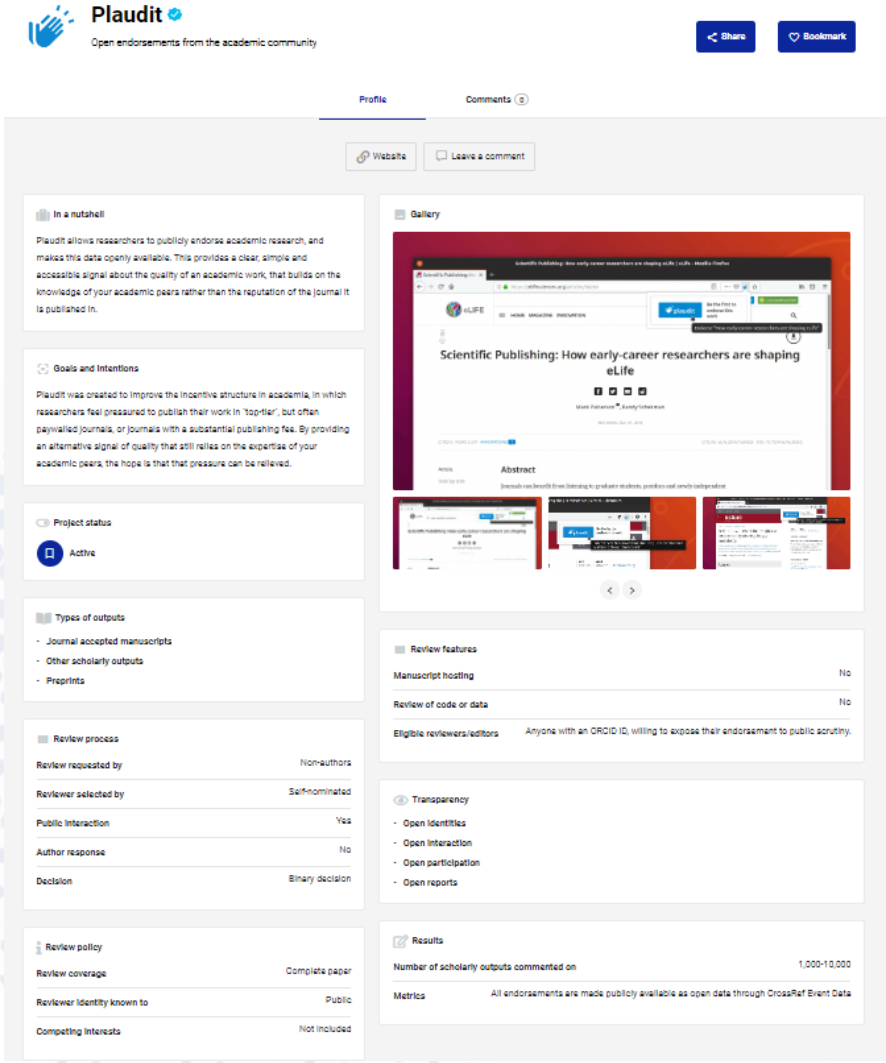
Reimagine peer review



https://reimaginereview.asapbio.org/

Explore preprint review platforms





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Communicating Science to a wider audience

RRI Pillars

ETHICS
Research integrity and ethical acceptability of the R&I outcomes

GENDER EQUALITY
Human resources, decision bodies and research dimension

GOVERNANCE
Structural changes to include all these issues in the R&I system

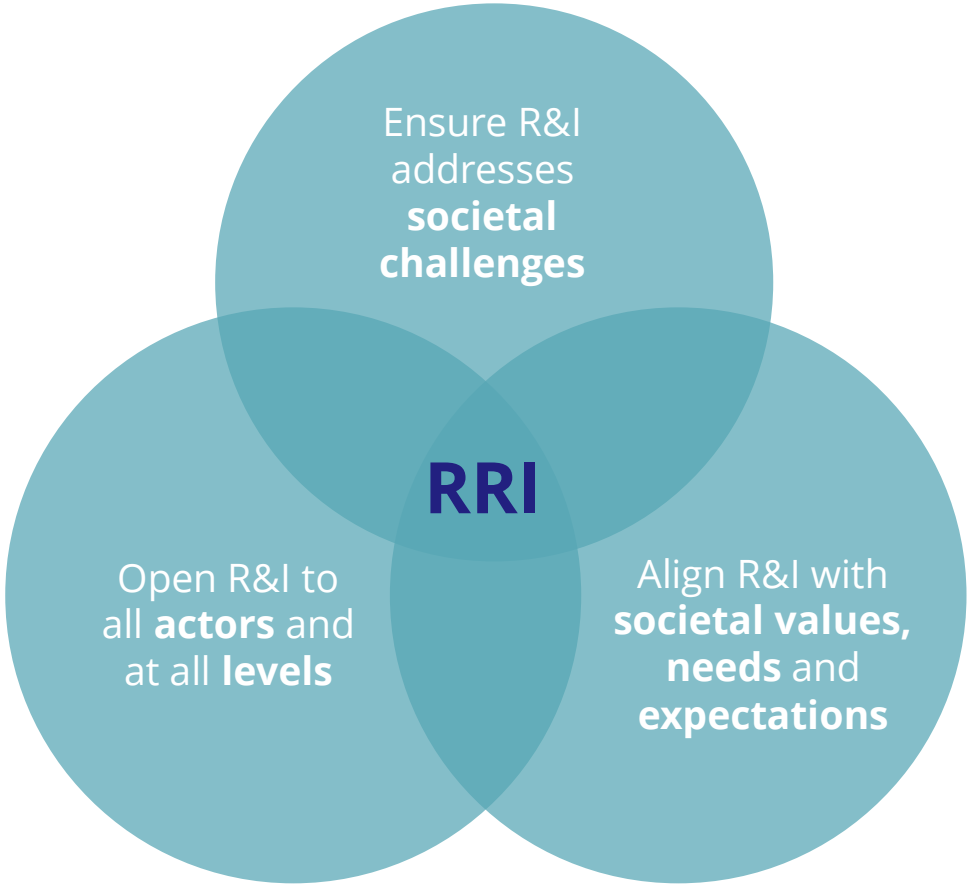
OPEN ACCESS
To results from publicly funded research, privacy issues and even more: open science

PUBLIC ENGAGEMENT
Towards a more open and inclusive R&I

SCIENCE EDUCATION
Provide competences for the responsible citizens society needs

Image from RRI tools

Democracy in science and science in democracy



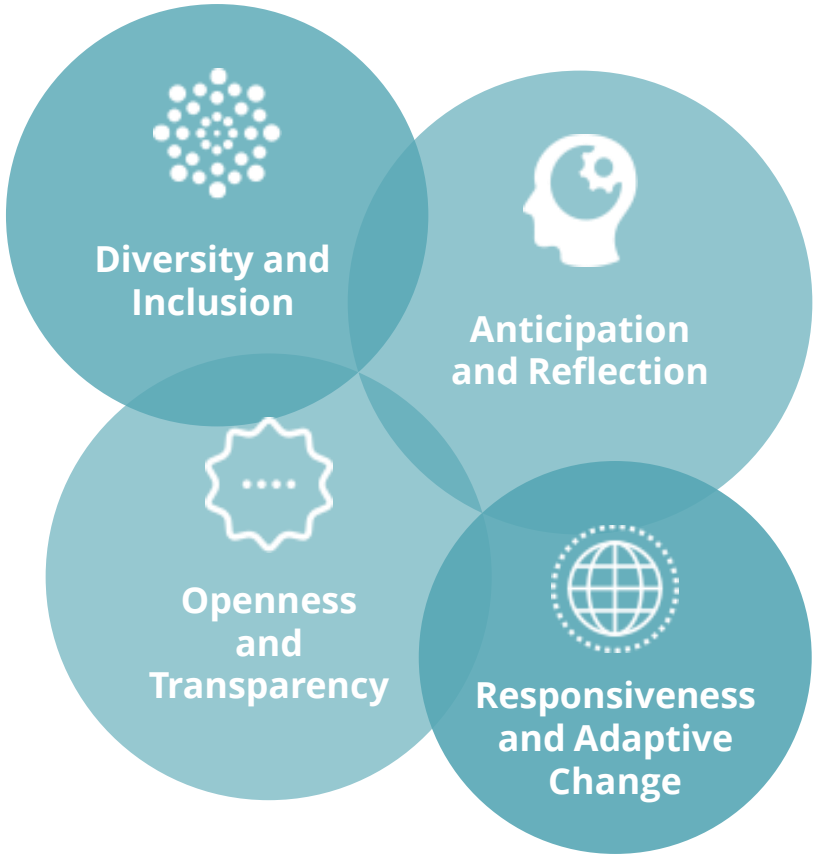
Responsible Research & Innovation is a **new governance and values framework** to build a new path where these requests can blossom

RRI tools

These process dimensions mean

New actors need to be involved and listened to in the early stages of R&I

R&I should be open to society in a meaningful and honest way



R&I should care about how its own dynamic will affect the future

R&I needs values and processes to adapt to emerging knowledge and needs

RRI tools

Public engagement

Engaging the Public in Responsible Research and Innovation

The course will help understand and justify the importance of public engagement as a key dimension of responsible research and innovation and open science. It provides tools to design, implement...

https://www.fosteropenscience.eu/learning/introduction-to-responsible-research-and-innovation

Levels of public engagement

A classification

Not all ways of reaching the public can be considered public engagement – or offer the same level of public "engagedness". Here is a classification you may want to consider to reflect on the range of public engagement in R&I.

+ Information
+ Consultation
+ Involvement
+ Collaboration

Evaluation

Considering the relative novelty of public engagement in RFPOs, evaluation must be seen as integral to public engagement approaches, not something that you can add to the process. Evaluation is crucial for understanding, testing and improving these approaches, setting and promoting best practices, enhancing their transparency, and understanding the contexts of different approaches.

+ Why evaluate?
− What to evaluate?
  - success of engagement (vs. goals)
  - process (did the methods work? was the budget adequate? what to learn for future PE?)
  - impact on the public, on the researchers, elsewhere?
+ When to evaluate?
+ How to evaluate

How to embed public engagement in RFPOs?

There is no one-size-fits-all way of doing public engagement. Successful engagement processes deeply depend on the context of specific RFPOs and on the identities (roles, needs, capacities, expectations) of stakeholders to engage. Nor is this the place to identify and examine in detail how to embed public engagement in RFPOs. Instead, we will highlight three aspects that most public engagement exercise must contemplate for successful implementation: planning, facilitation and evaluation.

Planning

"(...) participation should not be used without respect for participants. The fuel of participation is people's time, and in a time-poor world this resource is in ever-shorter supply. Those designing participation processes cannot take this time for granted and must ensure that everything possible is done to ensure that a participant's time is well spent. This means ensuring that a process has focus and clarity of purpose, that participants' needs are fully aired and considered and that their level of influence in the process – what can be changed as a result of it – is clear from the start." (People & Participation: How to put citizens at the heart of decision-making, Involve)

Careful planning that takes good care of people's time usually includes variations of the following dimensions:

- scope and goals of the engagement process
- the identities and expectations of the stakeholders regarding these goals
- the available resources and its allocation (time, budget, space and materials, personnel and skills, tools).

+ Scope and goals
+ Stakeholder mapping
+ Choosing tools & designing workshops

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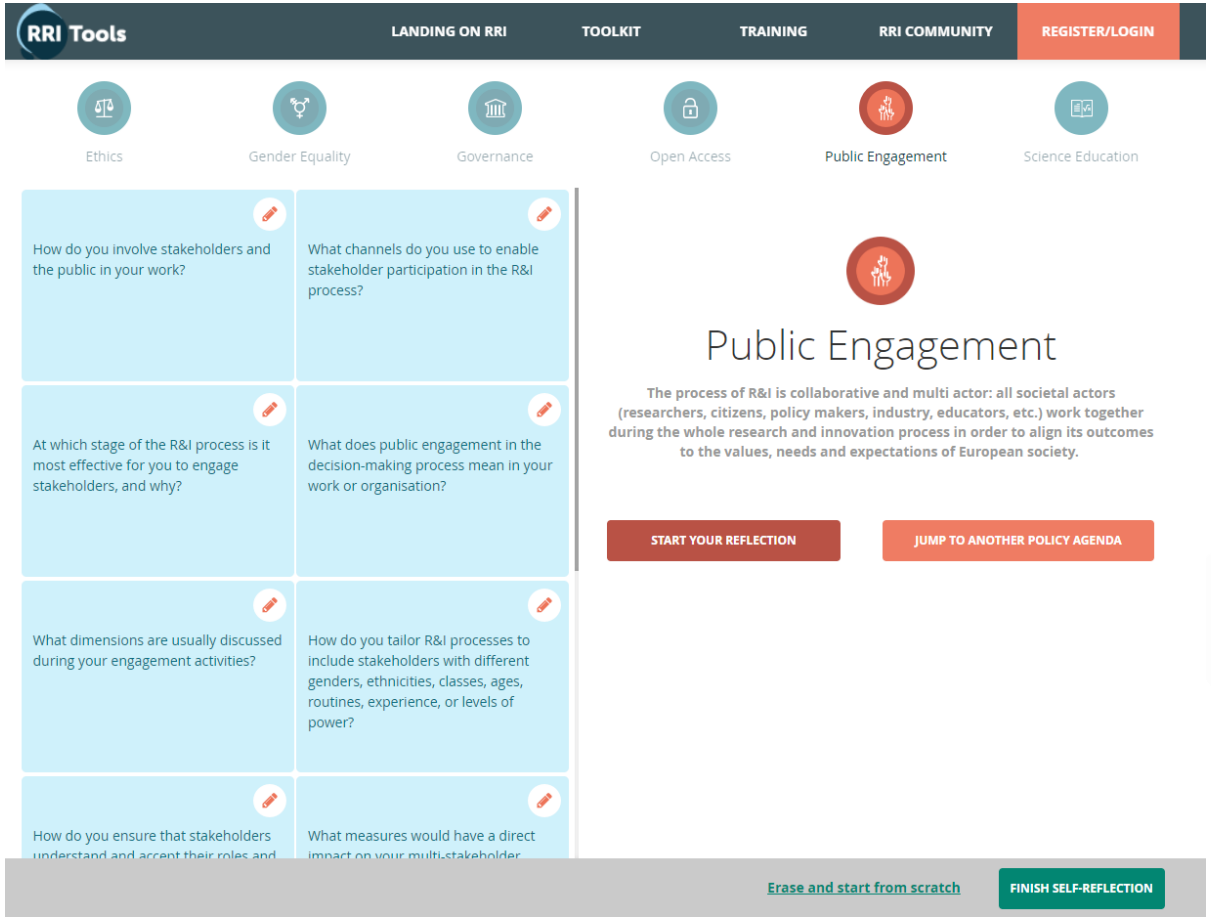
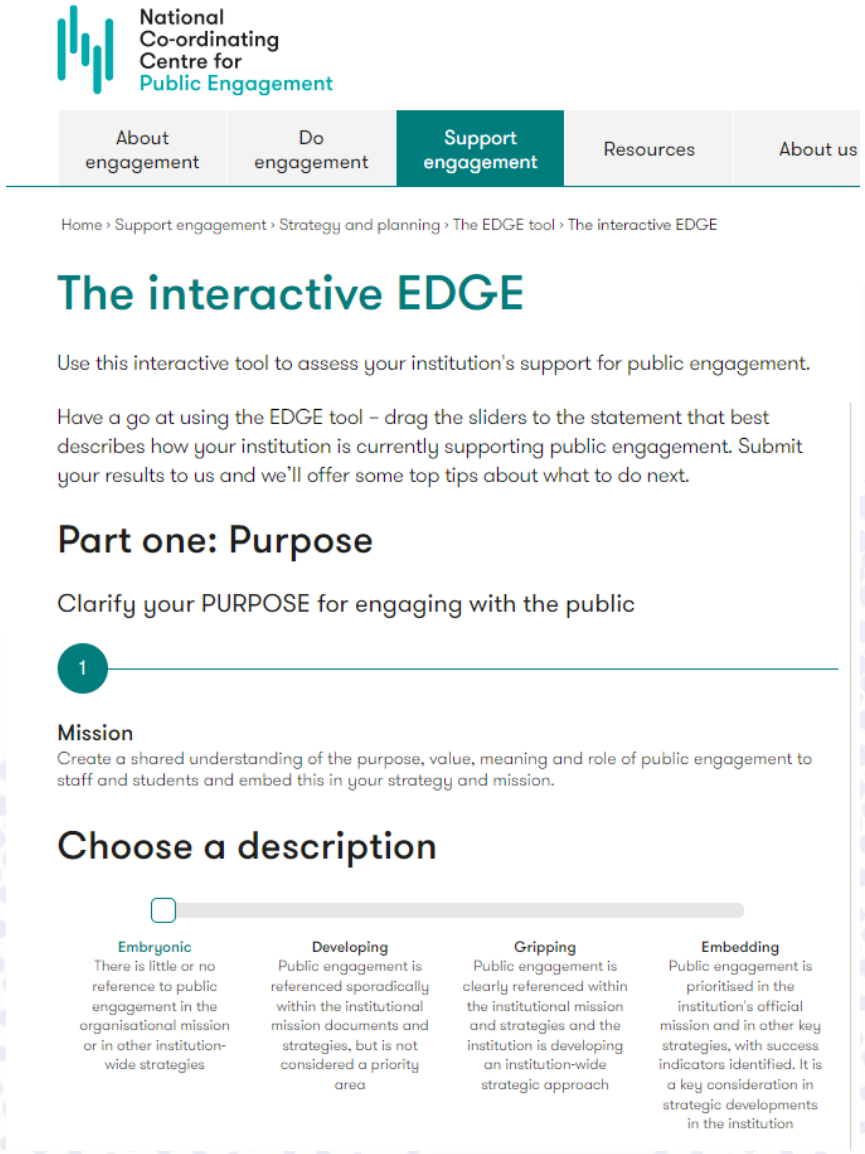
Self-reflection tools



RRI Tools self-reflection tool



EDGE tool

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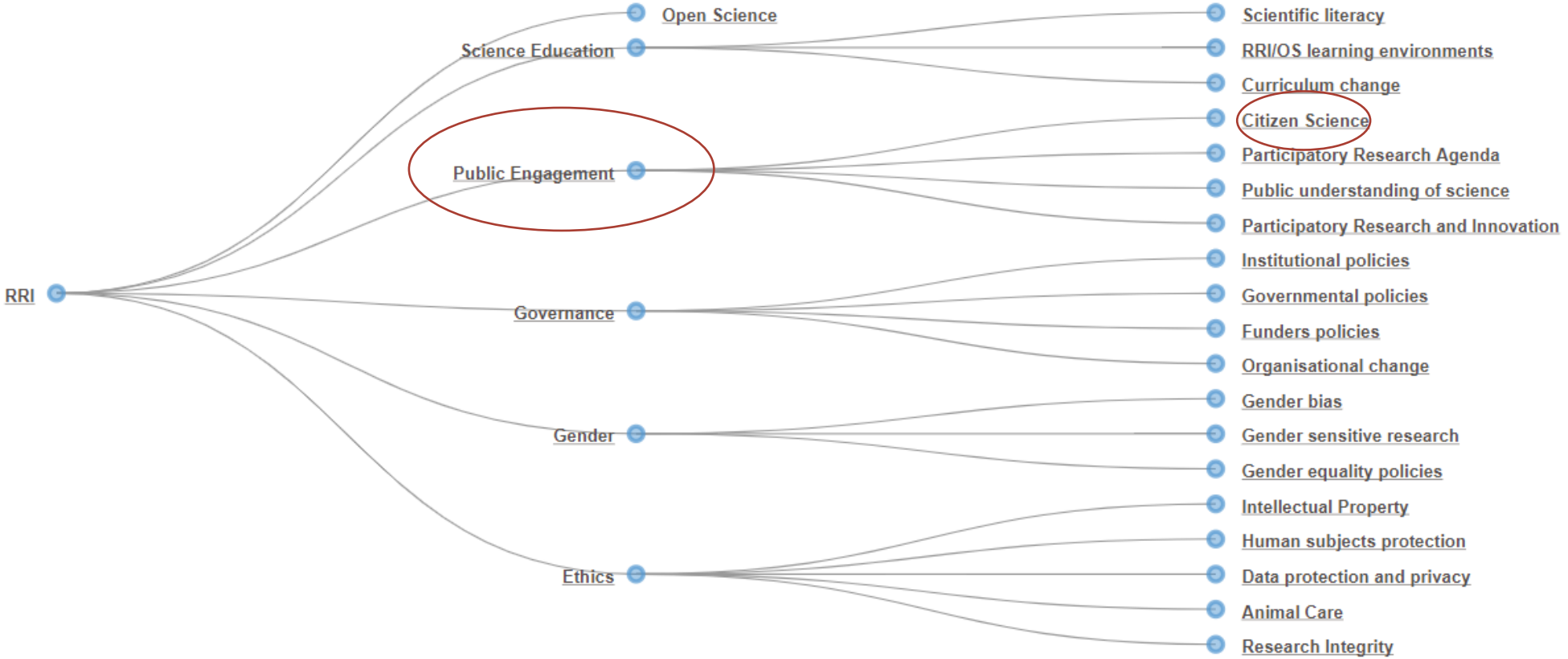
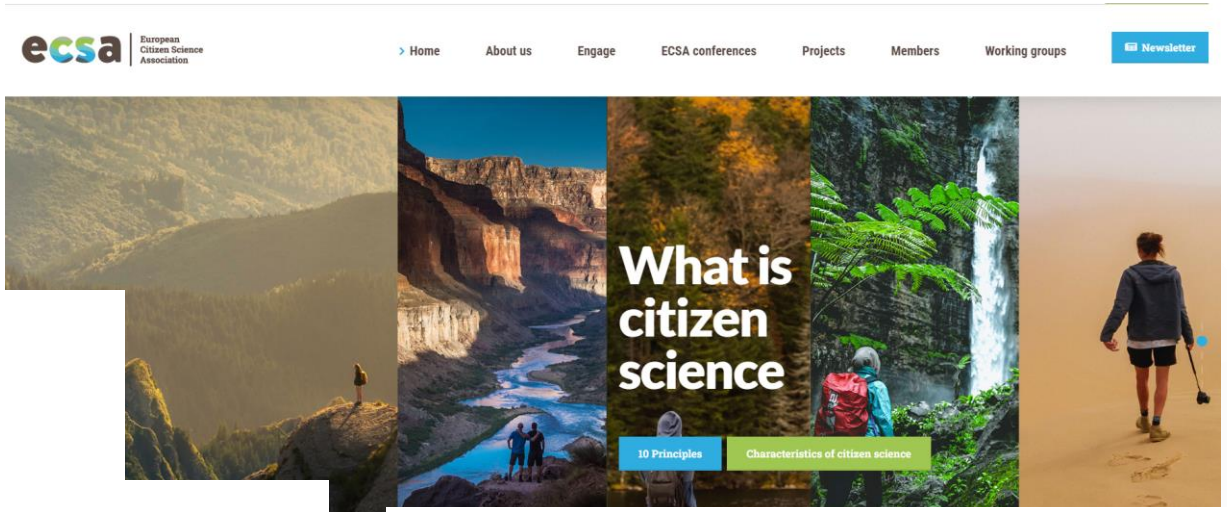
RRI taxonomy



RRI taxonomy

Citizen science



How you can engage with ECSA

Let's join forces to advance citizen science in Europe! If you would like to get involved with ECSA's activities, ther engage.

Involve ECSA in Your Project

Make us part of your citizen science activitie

Propose new Advisory and E members

ECSA members can volunteer or candidate executive board or advisory board.

Current Working Groups

- Air quality
- BioBlitz
- Citizen science and open science
- Citizen science and universities
- Citizen science for health
- Citizen science networks
- Green spaces and citizen science
- Empowerment, inclusiveness and equity
- European Citizen Science Platform
- Agri-food
- Learning and education in citizen science
- Projects, data, tools and technology
- Policy, strategy, governance and partnerships
- Sharing best practice and building capacity
- Storytelling and other arts
- Global Mosquito Alert

Levels of Citizen Science

Level 4 'Extreme'	• Collaborative Science – problem definition, data collection and analysis
Level 3 'Participatory science'	• Participation in problem definition and data collection
Level 2 'Distributed Intelligence'	• Citizens as basic interpreters
Level 1 'Crowdsourcing'	• Citizens as sensors

https://ecsa.citizen-science.net/

Levels of Participation in Citizen Science

https://povesham.wordpress.com/2011/11/27/citizen-science-as-participatory-science/

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ECSA ten principles of Citizen Science

Cite this document as:
ECSA (European Citizen Science Association). 2015. Ten Principles of Citizen Science. Berlin. http://doi.org/10.17605/OSF.IO/XPR2N

ecsa | European Citizen Science Association

Ten principles of citizen science

Citizen science is a flexible concept which can be adapted and applied within diverse situations and disciplines. The statements below were developed by the *'Sharing best practice and building capacity'* working group of the **European Citizen Science Association**, led by the Natural History Museum London with input from many members of the Association, to set out some of the key principles which as a community we believe underlie good practice in citizen science.

1. **Citizen science projects actively involve citizens in scientific endeavour that generates new knowledge or understanding. Citizens may act as contributors, collaborators, or as project leader and have a meaningful role in the project.**
2. **Citizen science projects have a genuine science outcome.** For example, answering a research question or informing conservation action, management decisions or environmental policy.
3. **Both the professional scientists and the citizen scientists benefit from taking part.** Benefits may include the publication of research outputs, learning opportunities, personal enjoyment, social benefits, satisfaction through contributing to scientific evidence e.g. to address local, national and international issues, and through that, the potential to influence policy.
4. **Citizen scientists may, if they wish, participate in multiple stages of the scientific process.** This may include developing the research question, designing the method, gathering and analysing data, and communicating the results.
5. **Citizen scientists receive feedback from the project.** For example, how their data are being used and what the research, policy or societal outcomes are.
6. **Citizen science is considered a research approach like any other, with limitations and biases that should be considered and controlled for.** However unlike traditional research approaches, citizen science provides opportunity for greater public engagement and democratisation of science.
7. **Citizen science project data and meta-data are made publicly available and where possible, results are published in an open access format.** Data sharing may occur during or after the project, unless there are security or privacy concerns that prevent this.
8. **Citizen scientists are acknowledged in project results and publications.**
9. **Citizen science programmes are evaluated for their scientific output, data quality, participant experience and wider societal or policy impact.**
10. **The leaders of citizen science projects take into consideration legal and ethical issues surrounding copyright, intellectual property, data sharing agreements, confidentiality, attribution, and the environmental impact of any activities.**

September 2015, London

https://ecsa.citizen-science.net/documents/#tenprinciples

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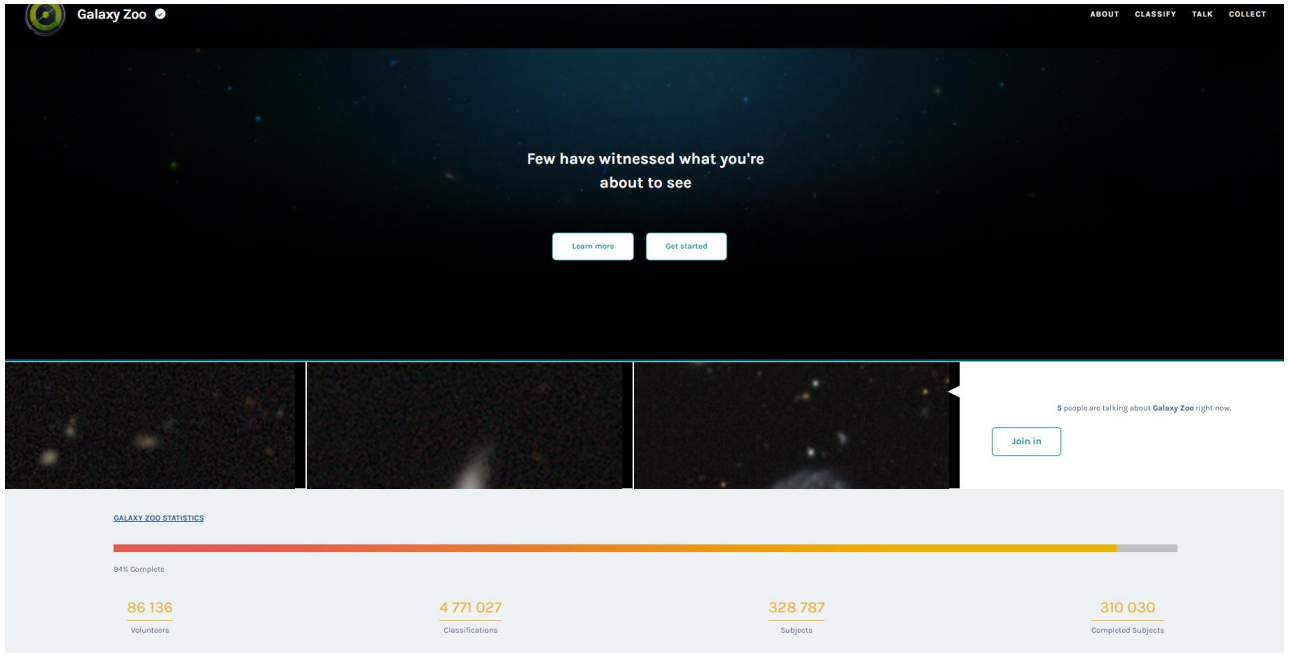
Citizen Science Projects

The first documented Citizen Science project took place in 1900 in the USA, when the National Audubon Society launched the Christmas Bird Count

Galaxy Zoo is probably the most successful Citizen Science project in terms of impact

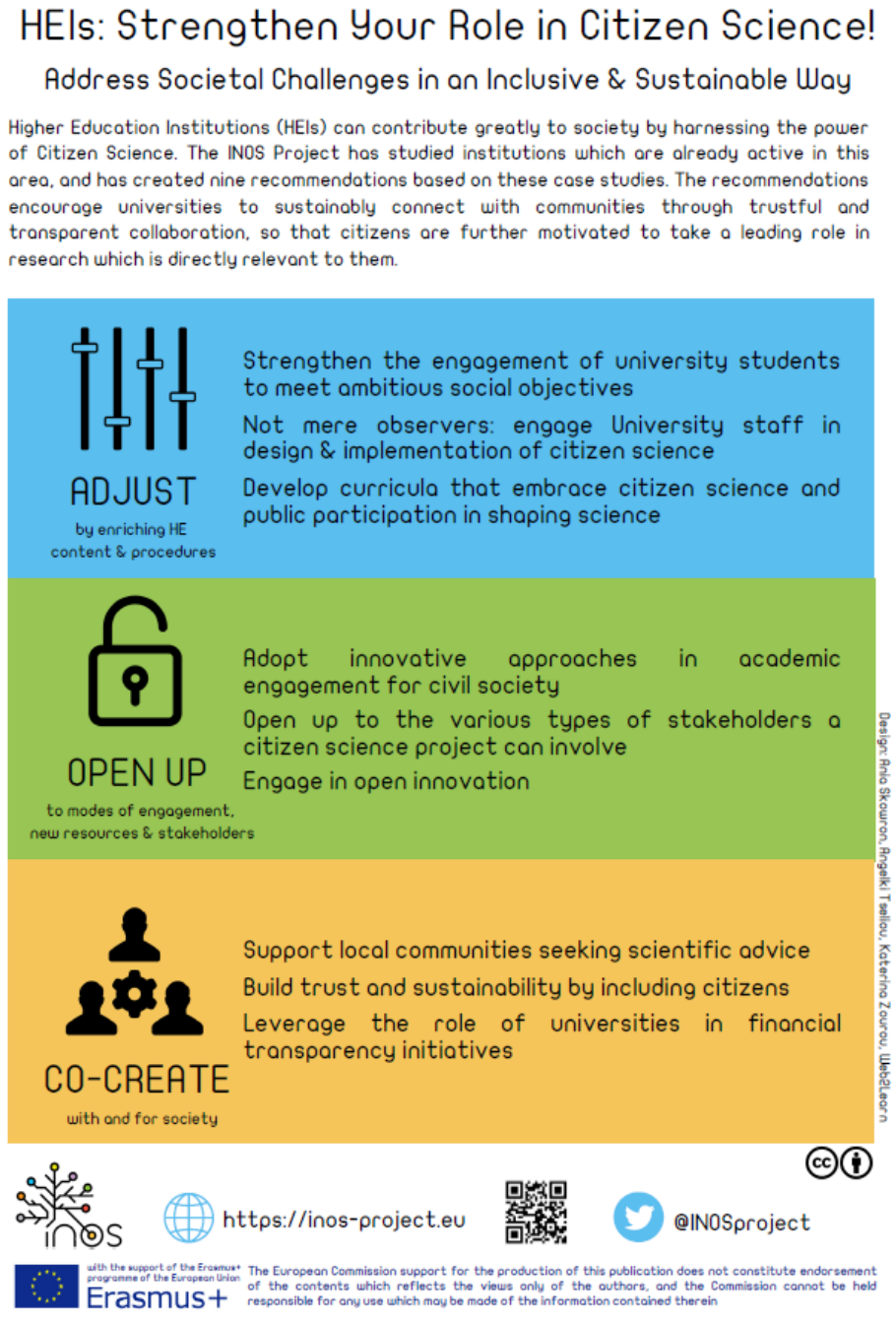


Citizen Science and HEIs

Advantages

- Increase the social impact
- Provide learning opportunities for all
- Stimulate creativity
- Disseminate knowledge among citizen scientists in a pedagogically sound way
- Test active learning pedagogies (problem-based, games, inquiry)
- Maximize the impact of projects
- Reach a wider audience

https://inos-project.eu/wp-content/uploads/2020/03/1-INOS-Infographics.pdf



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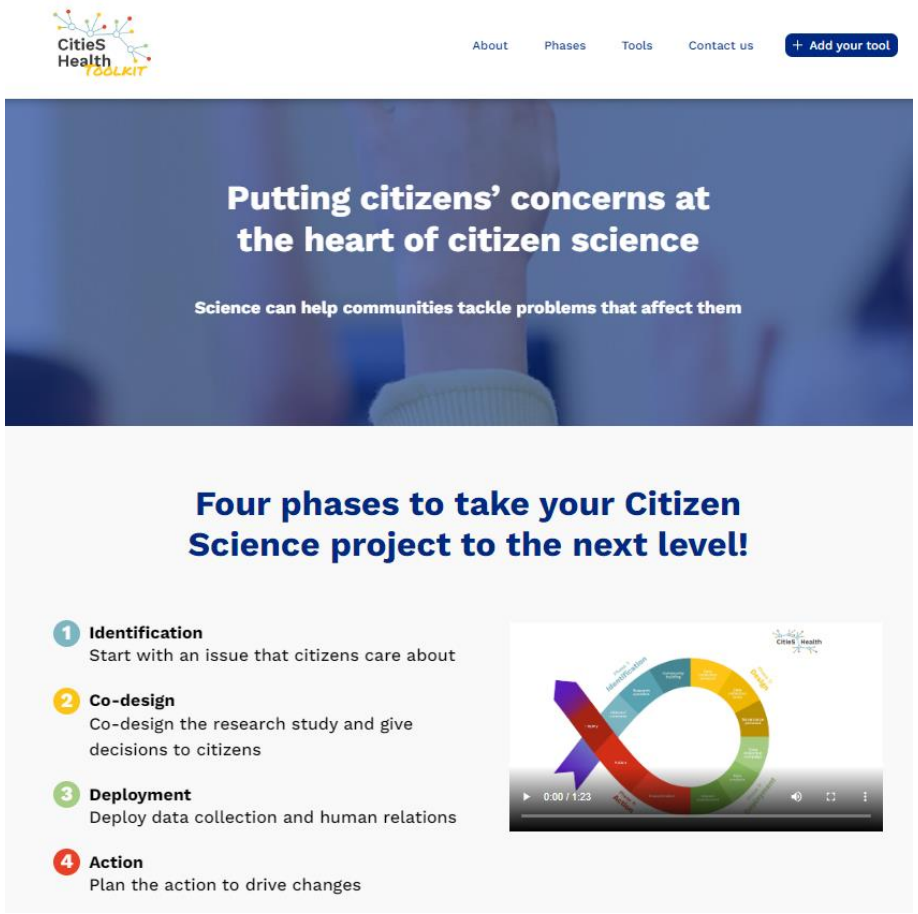
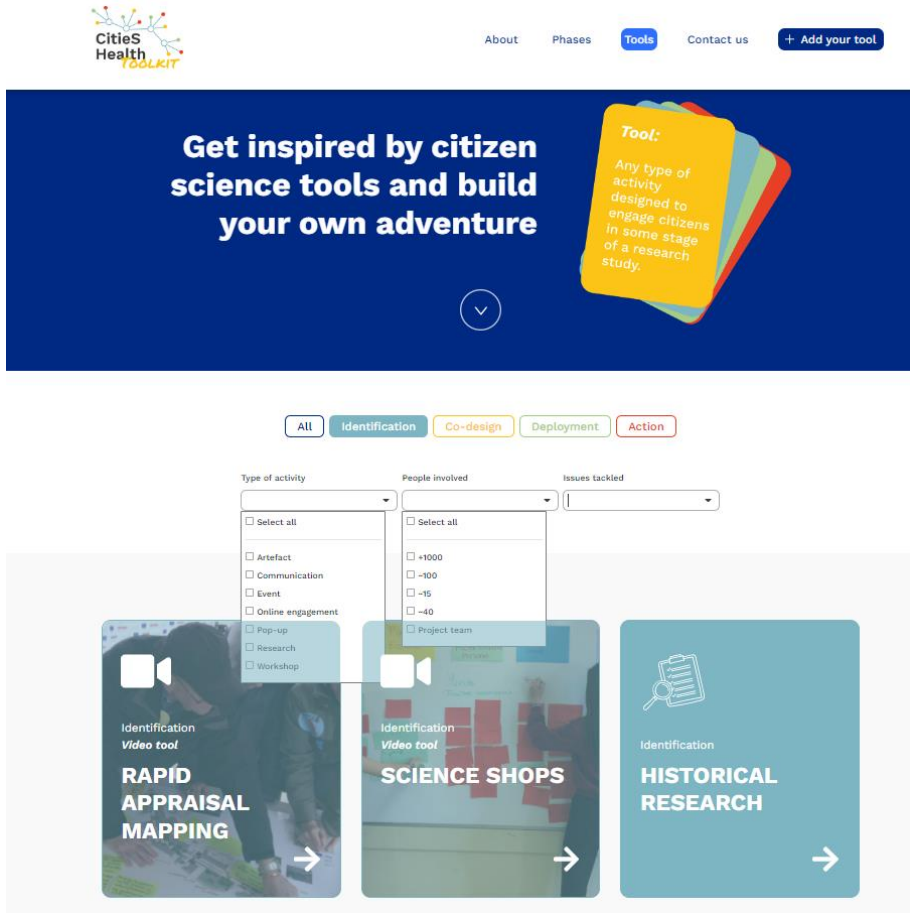
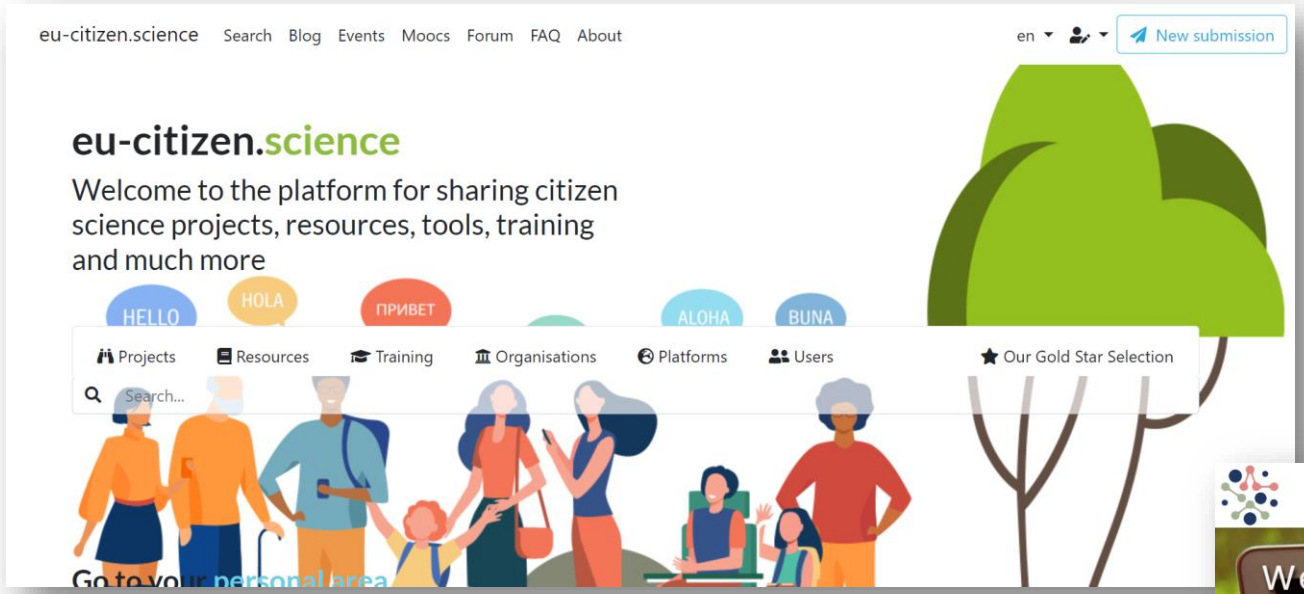
Citizen Science Toolkit



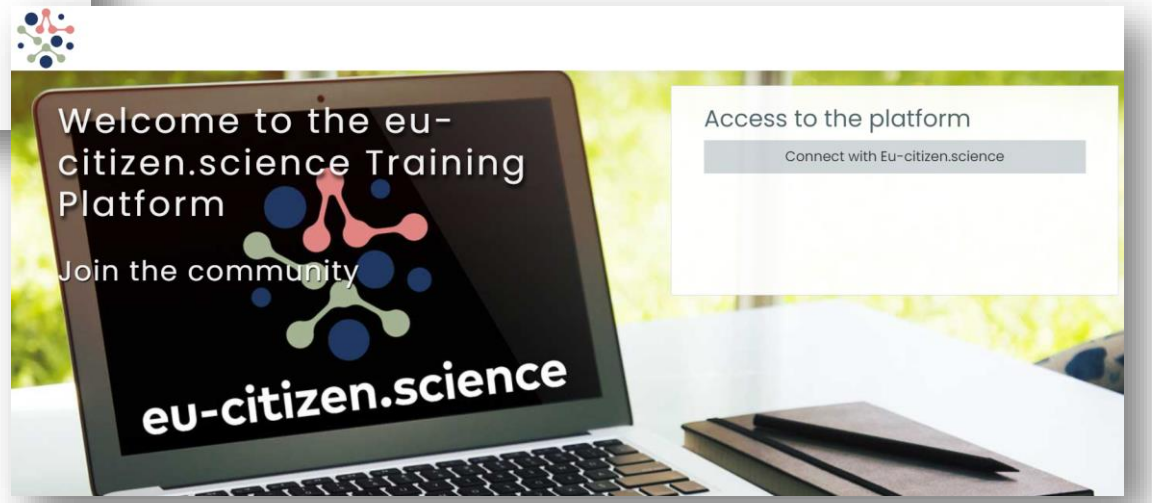


https://citizensciencetoolkit.eu/

Courses



https://eu-citizen.science/



https://moodle.eu-citizen.science/

Thank you

antonia.correia@usdb.uminho.pt