



Open Research Europe (ORE)

The open access publishing platform of the EC

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European Commission
Directorate-General for Research & Innovation
Unit 'Open Science'

CY-EL OpenAIRE webinar
29 June 2023
online

What is ORE? (1/2)

- **Peer-reviewed publishing platform** for Horizon 2020/Europe grantees
 - For **original research** funded at least partially by the EC
 - Publishes in **all disciplines**
- **Optional** service, at **no cost to researchers** to publish during and **after end of their projects**
- **Innovative publishing model**
 - **Post-publication open peer-review**: first publication and then open review (both reviewer names and reviews open)
 - All articles and reviews **open access under CC BY licenses**
- **High scientific standards**, rigorous policies/guidelines steered by **Scientific Advisory Board**
- Supports **variety of article types**, enabling publishing throughout research process
- **Transparent** and rigorous publishing process for transparent and reproducible research

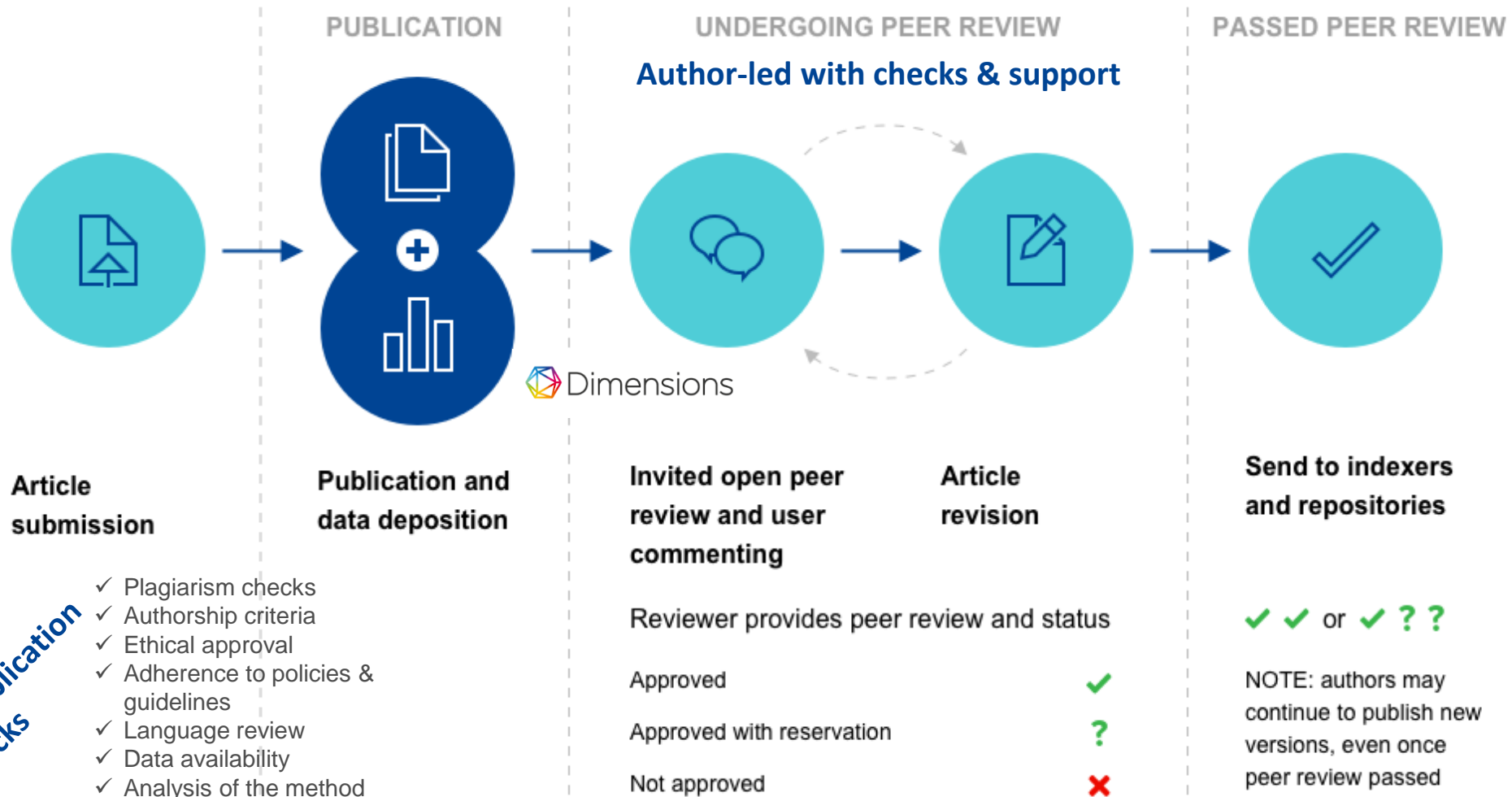
What is ORE? (2/2)

- Launched in March 2021: **~400 publications** in all fields
- Researcher-led **community gateways and collections** in particular fields (ca. 120 gateway/collections advisors; over 30 gateways, over 90 collections)
- Indexed in Scopus, ERIH+, Inspec and gradually other important indexers & national lists (**no JIF!**)
- Operated through a public procurement (currently serviced by **F1000 Research Ltd**).
- The platform will continue serving only the EC and operate through procurement until approximately mid-2026. Plans for **expanding collaboration with other funders** thereafter

ORE in line with policy and programme strategy

- **EC leads by example** in operationalising open science practices within scientific publishing in line with policy priorities
- Supports **Horizon Europe strategy and compliance** with contractual obligations
- Supports **institutional not-for-profit open access publishing** for the public good
- Supports **transparency and cost-efficiency** in publishing
- It is **part of the European Research Area** and the Commission is committed to it.

An innovative model



Scopus®

PubMed

IET Inspec

OpenAlex

ERIH PLUS
 EUROPEAN REFERENCE INDEX FOR THE HUMANITIES AND SOCIAL SCIENCES

Dimensions

TOP FACTOR

DOAJ
 DIRECTORY OF OPEN ACCESS JOURNALS

Reaxys®

Google Scholar

zenodo

European Commission

The pre-publication checks

Submissions are rigorously checked by the in-house editorial team before being published.



Benefits for the authors 1/2

Open Research Europe in Action



Efficient

- Rigorous open peer review
- Rapid and transparent
- International scientific advisory board



Impactful

- Immediate open access
- Article-level metrics
- Open data for reproducibility and reuse



Stress-free

- Optional service*
- No administrative burden
- No author fees
- Automatic compliance with open access requirements

* Service available also after grant has ended

Open
Research
Europe

Benefits for the authors, 2/2



Greater opportunities
for collaboration



Higher citation rates

Greater efficiencies (and value
for money) as research does
not need to be repeated



Compliance with funder mandates
that support open research

Benefits of Open Science



Greater transparency
in the research process

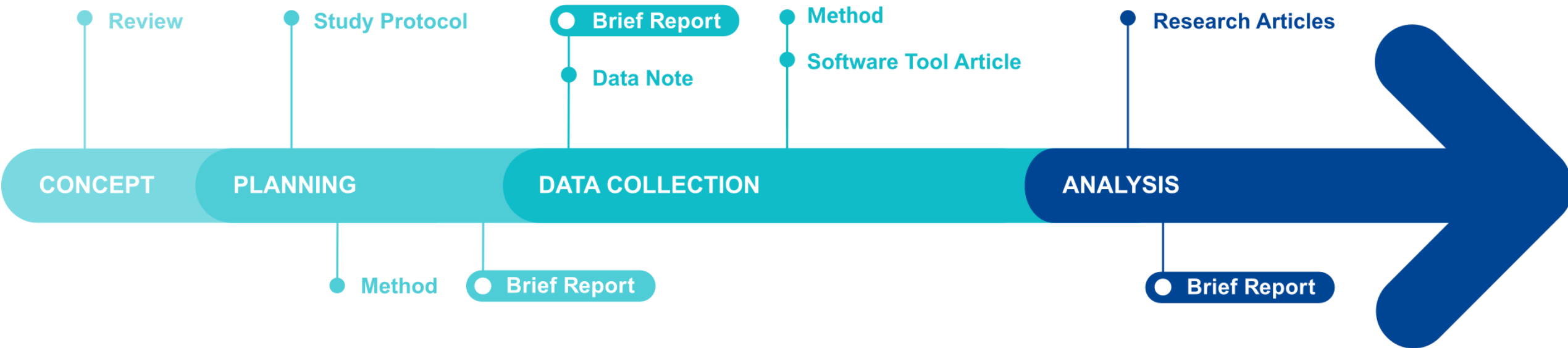


Increased
visibility for researchers



Greater potential impact
of your research

Publishing throughout the research process



An example of an article

111 Views | 19 Downloads | 2 Citations

Cite | Download | Export | Share | Track

Home > Articles > Towards an integrated automatic design process for robot swarms

RESEARCH ARTICLE

REVISED Towards an integrated automatic design process for robot swarms [version 2; peer review: 3 approved]

Darko Bozhinoski, Mauro Birattari

This article is included in Excellent Science gateway

This article is included in Robotics collection

Article

Authors

Metrics

Abstract

Background: The specification of missions to be accomplished by a robot swarm has been rarely discussed in the literature: designers do not follow any standardized processes or use any tool to precisely define a mission that must be accomplished.

Methods: In this paper, we introduce a fully integrated design process that starts with the specification of a mission to be accomplished and terminates with the deployment of the robots in the target environment. We introduce Swarm Mission Language (SML), a textual language that allows swarm designers to specify missions. Using model-driven engineering techniques, we define a process that automatically transforms a mission specified in SML into a configuration setup for an optimization-based design method. Upon completion, the output of the optimization-based design method is an instance of control software that is eventually deployed on real robots.

Results: We demonstrate the fully integrated process we propose on three different missions.

Conclusions: We aim to show that in order to create reliable, maintainable and verifiable robot swarms, swarm designers may benefit from following standardised automatic design processes that will facilitate the design of control software in all stages of the development.

Open Peer Review

Approval Status ✓✓✓

	1	2	3
Version 2 (Revision) 04 Nov 22			✓ view
Version 1 27 Sep 21	✓ view	✓ view	↑ ✓ view

1. Adam Schroeder, University of Toledo, Toledo, OH, USA
2. Alan Millard, University of York, York, UK
3. Edmund Hunt, University of Bristol, Bristol, UK
James Ward, University of Bristol, Bristol, UK; University of Bristol, Bristol, UK

Comments on this article

All Comments (0)

Sign in to comment

Sign up for content alerts

Email address *

Sign Up



European Commission

An example of a review

Reviewer Report 10 Views

✓ Approved

07 Jun 2022

VERSION 1

Edmund Hunt , University of Bristol, Bristol, UK

James Ward, University of Bristol, Bristol, UK; University of Bristol, Bristol, UK

🗨️ Cite this Report

💬 Responses (1)

This paper presents work on a textual language ('SML') for specification of swarm robot missions, and an engine to transform this SML into a form that can be used by the previously published 'AutoMoDe-Chocolate' automatic controller designer. The pipeline from mission specification to deployment is demonstrated in three example missions.

The ambitious goal to show a 'fully integrated design process' for swarm deployment, using off-line optimization methods, is met with an initial proof concept. Obviously, much work remains to be done on showing that this approach will be successful in 'real world' environments, both in relation to mission success (relative to alternative approaches, e.g. hand-design of controllers) and usability for non-expert users. But it is a useful step in that direction, and the paper therefore is a meaningful contribution to the field.

Specific points arising:

- Given the focus on swarms and emergent behaviour – e.g. the Introduction "Hence, the collective behavior of a robot swarm is a result of the local interactions between the individual robot and its neighbors and its environment" – the three missions tested do not especially rely on neighbour interactions/emergence, and could equally be tested on a single robot? And so the real-world validation is arguably on the boundary of what could properly be called swarm robotics, and I look forward to the promised future work on e.g. collective decision-making missions.
- In the Abstract, I would contest the claim that 'swarm designers need to follow standardised automatic design processes...' I suggest 'may benefit from following' rather than 'need to'.

Responses (1)

AUTHOR RESPONSE 4 NOVEMBER 2022

Darko Bozhinoski

We are glad that the reviewer appreciated the work we have performed. In the following, we address his comments point by point.

- Concerning the idea of creating a graphical interface to facilitate the usage of SML, we extended the Conclusions by adding this research direction as a future contribution.
- Concerning the large design budget of 200k simulation runs, we would like to stress that the decision of adopting such a large design budget is outside of the specific scope of the contribution we are making with this paper. We decided to adopt a large design budget, so that the design process has sufficient resources to obtain a controller that performs well. The focus here is on the specification of the mission and on the automatic process that transforms specifications into the input to be fed to Chocolate.
- Concerning the fact that the automatic design method Chocolate operates on only six low-level behaviours and 6 conditions, we would like to stress that the focus in this paper is not Chocolate per se, but rather how to define a fully automatic design process (from specifications to the actual execution of the mission). As we already mentioned in answer to the other reviewers, this work is only a first step towards an integrated automatic design process for robot swarms: a proof of concept implementation. Extending the framework from a lab-based environment to a real-world environment is definitely an important issue that will be addressed in future research work. In the Behaviour-Data Relations Modelling Language (BDRML) [1] approach, the authors propose a methodology to represent robot behaviours, data, and a set of conditional relations between the different primitives. In contrast, the main focus in our work is on establishing an end-to-end automatic approach where from a mission specification in natural language, swarm control software can be obtained without focusing on the specificities of data structures and behaviours.
- Concerning the idea of testing the approach on missions where the simulation environment does not fully match the deployment environment, we would like to point out that our current approach already provides support for it. Many environmental features can be described in a probabilistic manner, meaning that the automatic design process generates control software that is trained on a representative set of environments that are different from the one into which the swarm is eventually deployed. We refer to a class of missions (environments) and we only make the working hypothesis that all the environments experienced in simulation and the real one into which the swarm is deployed are part of the same mission class.



The peer review process

- Reviewers are suggested by article **authors**, with the **editorial team** ensuring they meet necessary criteria (incl. conflicts of interest) or suggesting additional expertise
- An **extensive list of questions**, which must be answered, guides the review process, appropriate for different domains; there is also a **reviewer code of conduct** to be followed
- Once all necessary reviews performed, the **editorial team** checks for process, content, language and correct status, and completes the publishing process

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Open peer review: a win-win situation

Open Peer Review

Open Research Europe



Open Peer Review

Open Research Europe

Open Peer Review for Reviewers

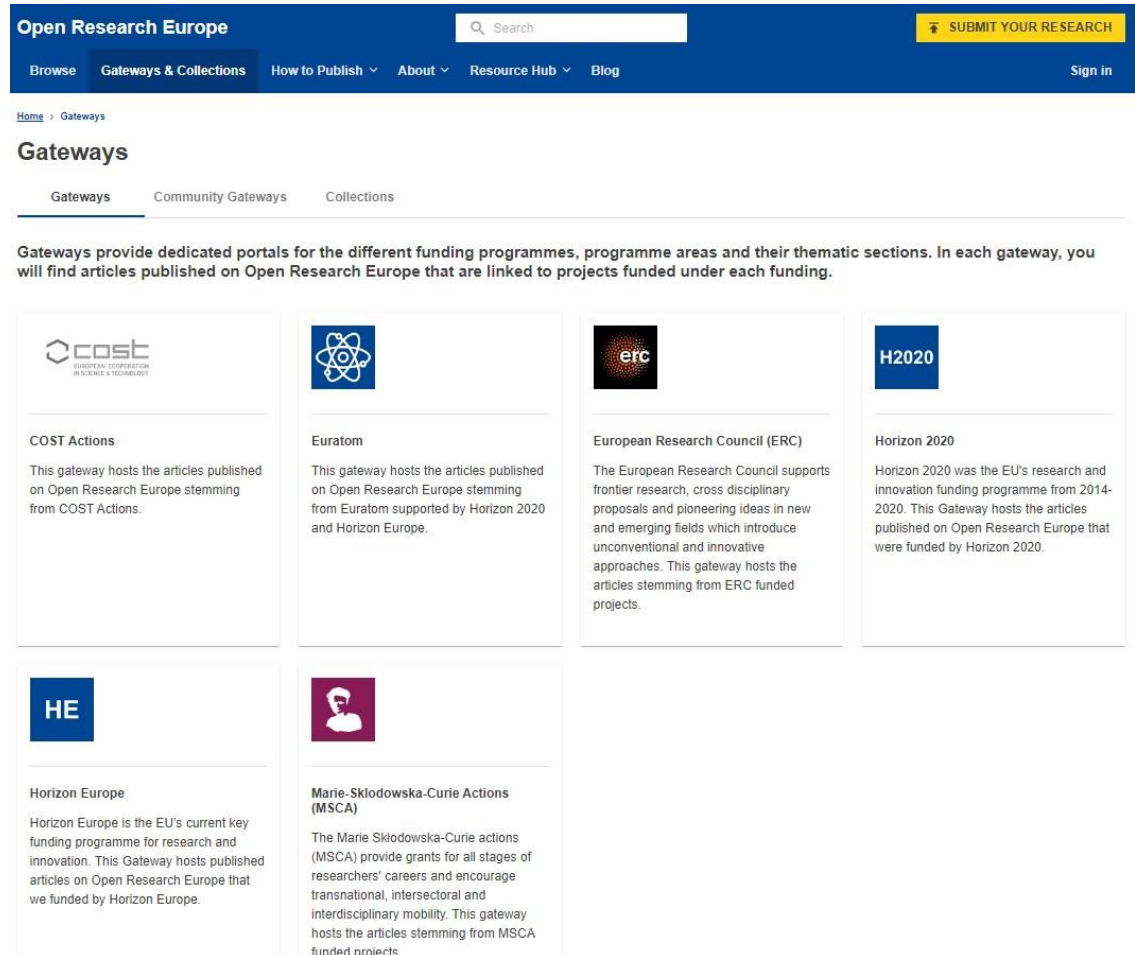


Research supported across all disciplines

	Natural sciences	Engineering and technology	Medical and health sciences	Agricultural and veterinary sciences	Social sciences	Humanities and the arts
Case Study	•	•	•	•	•	•
Research Article	•	•	•	•	•	•
Brief Report	•	•	•	•	•	•
Data Note	•	•	•	•	•	•
Method Article	•	•	•	•	•	•
Open Letter	•	•	•	•	•	•
Software Tool Article	•	•	•	•	•	•
Review	•	•	•	•	•	•
Case Report	•	•	•	•		
Registered Report	•	•	•	•	•	
Clinical Practice Article	•	•	•	•		
Study Protocol	•	•	•	•	•	
Systematic Review	•	•	•	•	•	
Essay					•	•

Three different ways to organize your research in ORE

By funding programme



The screenshot shows the Open Research Europe website interface. At the top, there is a dark blue header with the site name, a search bar, and a 'SUBMIT YOUR RESEARCH' button. Below the header is a navigation menu with links for 'Browse', 'Gateways & Collections', 'How to Publish', 'About', 'Resource Hub', and 'Blog'. The main content area is titled 'Gateways' and includes a sub-menu with 'Gateways', 'Community Gateways', and 'Collections'. A descriptive paragraph explains that gateways provide dedicated portals for different funding programmes. Below this, there are six gateway cards, each with a logo, a title, and a brief description of the funding programme it represents.

Open Research Europe [SUBMIT YOUR RESEARCH](#)


[Browse](#) [Gateways & Collections](#) [How to Publish](#) [About](#) [Resource Hub](#) [Blog](#) [Sign in](#)

[Home](#) > [Gateways](#)

Gateways


[Gateways](#) [Community Gateways](#) [Collections](#)

Gateways provide dedicated portals for the different funding programmes, programme areas and their thematic sections. In each gateway, you will find articles published on Open Research Europe that are linked to projects funded under each funding.




COST Actions

This gateway hosts the articles published on Open Research Europe stemming from COST Actions.




Euratom

This gateway hosts the articles published on Open Research Europe stemming from Euratom supported by Horizon 2020 and Horizon Europe.




European Research Council (ERC)

The European Research Council supports frontier research, cross disciplinary proposals and pioneering ideas in new and emerging fields which introduce unconventional and innovative approaches. This gateway hosts the articles stemming from ERC funded projects.




Horizon 2020

Horizon 2020 was the EU's research and innovation funding programme from 2014-2020. This Gateway hosts the articles published on Open Research Europe that were funded by Horizon 2020.



Horizon Europe

Horizon Europe is the EU's current key funding programme for research and innovation. This Gateway hosts published articles on Open Research Europe that were funded by Horizon Europe.



Marie-Sklodowska-Curie Actions (MSCA)

The Marie Skłodowska-Curie actions (MSCA) provide grants for all stages of researchers' careers and encourage transnational, intersectoral and interdisciplinary mobility. This gateway hosts the articles stemming from MSCA funded projects.

By specific area of research

The screenshot displays the Open Research Europe website interface. At the top, there is a dark blue navigation bar with the text "Open Research Europe" on the left, a search bar in the center, and a yellow button labeled "SUBMIT YOUR RESEARCH" on the right. Below the navigation bar, there are several menu items: "Browse", "Gateways & Collections", "How to Publish", "About", "Resource Hub", and "Blog". A "Sign in" link is located on the far right of the navigation bar. Below the navigation bar, the breadcrumb "Home > Community Gateways" is visible. The main heading is "Community Gateways". Underneath, there are three tabs: "Gateways", "Community Gateways" (which is selected), and "Collections". A descriptive paragraph states: "Community Gateways are dedicated hubs within Open Research Europe to bring together all content related to a specific area of research. They can be tracked to trigger email alerts whenever there is new research published within the Community Gateways of interest." Below this text is a grid of eight gateway cards, each with an icon, a title, and a brief description. The "Arts" gateway card is highlighted with a green arrow pointing to it from a separate box on the right.

Open Research Europe Search [SUBMIT YOUR RESEARCH](#)

[Browse](#) [Gateways & Collections](#) [How to Publish](#) [About](#) [Resource Hub](#) [Blog](#) [Sign in](#)

Home > Community Gateways

Community Gateways

[Gateways](#) [Community Gateways](#) [Collections](#)

Community Gateways are dedicated hubs within Open Research Europe to bring together all content related to a specific area of research. They can be tracked to trigger email alerts whenever there is new research published within the Community Gateways of interest.

Agriculture, Land and Farm Management

The Agricultural, Land and Farm Management Community Gateway is the home for research ensuring the correct use and management of land for agricultural functions and interests, and is led by [Dr. Olivier Le Gall](#).

Analytical Chemistry

Analytical chemistry involves the separation, identification and quantification of the composition and structure of matter in both natural and artificial substances. This Community Gateway is led by [Dr. Imad El Haddad](#).

Animal and Dairy Science

The Animal and Dairy Science community gateway is focused on publishing both industry- and lab-based research relating to animal and dairy produce, and is led by [Dr. Emer Kennedy](#).

Arts

This multidisciplinary gateway showcases research on all aspects of the Arts, a field encompassing an immense variety of human practices with creative expression and imagination at their core. This Community Gateway is led by [Dr. Ruth Sargent Noyes](#).

Astronomy, Astrophysics & Cosmology

Astronomy, astrophysics & cosmology contribute to our knowledge of the Universe through observations, precision studies and theory development. This Community Gateway is led by [Prof. Jackson Said](#).

Cell, Molecular and Structural Biology

Cell Biology studies the structure, function and behaviour of cells, considering them the fundamental units of life. Potential topics include but are not limited to: Cell Signalling, Cell Metabolism, Cell Polarity, Cell Cycle, Membrane-trafficking, non-membrane-

Chemical Engineering

Chemical Engineering is a multi-disciplinary branch of engineering research that combines natural and experimental sciences with life sciences, mathematics, and economics to design, develop, produce, transform, transport, operate and manage the industrial

Civil Engineering

Civil Engineering brings together advanced knowledge of the physical and natural sciences, mathematics, computational methods, and economics to facilitate the development of vital projects for the benefit of society. This Community Gateway is led by [Dr.](#)

Gateway Advisor

Ruth Sargent Noyes
National Museum of Denmark, Denmark



By community, project or conference

Open Research Europe Search [] SUBMIT YOUR RESEARCH

Browse Gateways & Collections How to Publish About Resource Hub Blog Sign in

Home > Collections

Collections

Gateways Community Gateways Collections

Collections are compilations of content relating to a specific Horizon 2020 or Horizon Europe-funded community, project or conference.

<p>Active Living as a Lifestyle</p> <p>Being habitually active is regarded as a healthy lifestyle, leading to healthy ageing and longevity. Ensuring all society members are able to lead an active lifestyle is paramount for reducing costs to health services. This collection is a dedicated area for research on activity prescription, promotion and monitoring, with a particular focus on inclusivity.</p>	<p>Adaptation to Climate Change</p> <p>This collection draws on the interdisciplinary nature of climate research in the Horizon funding programmes, looking at both current climatic conditions as well as the lessons that can be learned from climatic changes in the past. It is led by Dr. Jana Vojříšková.</p>	<p>Additive Manufacturing</p> <p>Additive Manufacturing refers to technologies that produce three-dimensional objects one superfine layer at a time. It has many applications across Engineering. Examples include the creation of weight-saving, complex geometric designs for Aerospace Engineering, the rapid prototyping in Automotive Engineering, and creating custom on-demand surgical implants in Medical Engineering.</p>	<p>Advances in Optics</p> <p>Optics is concerned with studying and understanding the behavior and properties of light, specifically in relation to its interaction with different media. This collection focuses on the latest developments within this field of physical sciences.</p>
<p>Advances in Photonics</p> <p>Photonics is the science of light waves, specifically relating to the generation, detection and manipulation of light. The field focuses on the creation and</p>	<p>Agricultural Chemistry</p> <p>Chemistry is involved with agriculture in two core ways: it can be used to understand the underlying reactions that govern plant growth & behavior and it can</p>	<p>Amines</p> <p>Amines are versatile organic compounds that form the basis of several naturally occurring & chemically synthesized products. This collection aims to bring</p>	<p>Analytical Techniques</p> <p>Quantitative study & result validation is a common practice spanning across multiple disciplines in science and this can be achieved by using different</p>

Collection Advisor



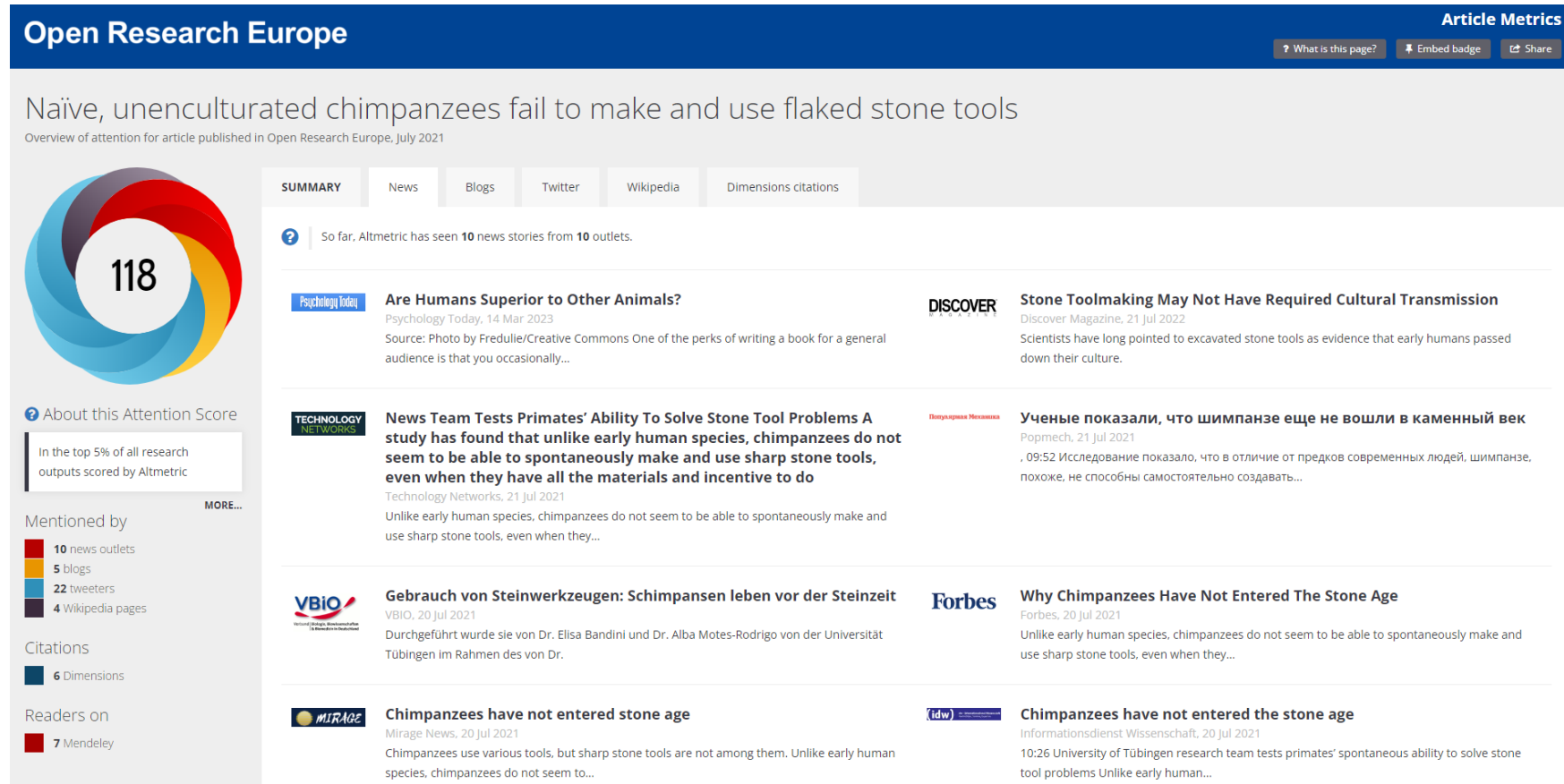
Toma Susi

University of Vienna, Austria



European
Commission

Interest and influence: altmetric indicators



ORE as a collectively funded
non-profit publishing service
(2026 onwards)

A vision for ORE beyond 2026

- A top-quality, trusted collective **OA publishing service for the public good**
- **Collectively driven, owned and supported** by research funders and research institutions, as a service for **researchers**, with **no author fees**
- Supported by an **open source infrastructure**
- Ambition for a **publishing service without eligibility criteria**
- Keep it **optional yet attractive to answer researchers' needs**

Policy support

- 2022 Council Conclusions on '**Research assessment and implementation of open science**' (FR)
- 2023 (upcoming in May) Council Conclusions on '**High-quality, transparent, open, trustworthy and equitable scholarly publishing**' (SE)
- Both invite MS and funders to support and participate in ORE

Establishing a shared vision for the future of ORE

Taking into consideration:

- **‘Future of Scholarly Publishing and Scholarly Communication’**
2019 report of expert group to the EC
- International Science Council **Fundamental Principles for Scientific Publishing**
- 2021 **UNESCO Open Science Recommendation**
- Relevant work by other groups, e.g. **cOAlition S, Open Research Central**
- Work relevant to the Reform of Research Assessment, e.g. In the content of the Coalition for the Advancement of Research Assessment ([COARA](#))
- Relevant work in the area of Diamond Open Access, e.g. 2022 **‘Action Plan for Diamond Open Access’**, EC-funded **project results and infrastructures**

Focus of work

- **Discussing** with national funders and stakeholders and....
- **Scoping report:** vision, financial and operational model, roadmap
 - Costing model, funding scheme
 - Operating model, governance
 - Timeline
- **Indication of funder support**
 - unofficial, e.g. letter of intent/support
- **Options for organisation** to operate ORE
 - legal & organisational preparation: hosting, statute, bylaws ...
- 2024 and 2025 preparations. **Mid 2026 new configuration of ORE**

Ten Principles for ORE

- Ensuring **High-Quality Research** and its **Integrity**
- Maximizing **Accessibility and Usability**
- Supporting an **Expanding Range of Contributions**
- A Distributed, **Open Infrastructure**
- **Equity, Diversity & Inclusivity**
- **Community Building**
- Facilitating the **Evaluation of Research**
- Promoting **Flexibility & Innovation**
- **Cost-Effectiveness**
- **Accountability** to the Research Community & the Public

ORE resources

- <https://open-research-europe.ec.europa.eu/>
 - <https://open-research-europe.ec.europa.eu/about>
 - <https://open-research-europe.ec.europa.eu/faqs>
- [Open Research Europe infographic](#)
- [Open Research Europe playlist in DG R& I Youtube channel](#)
- [@OpenResearch_EU](#) Twitter account

Thank you



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