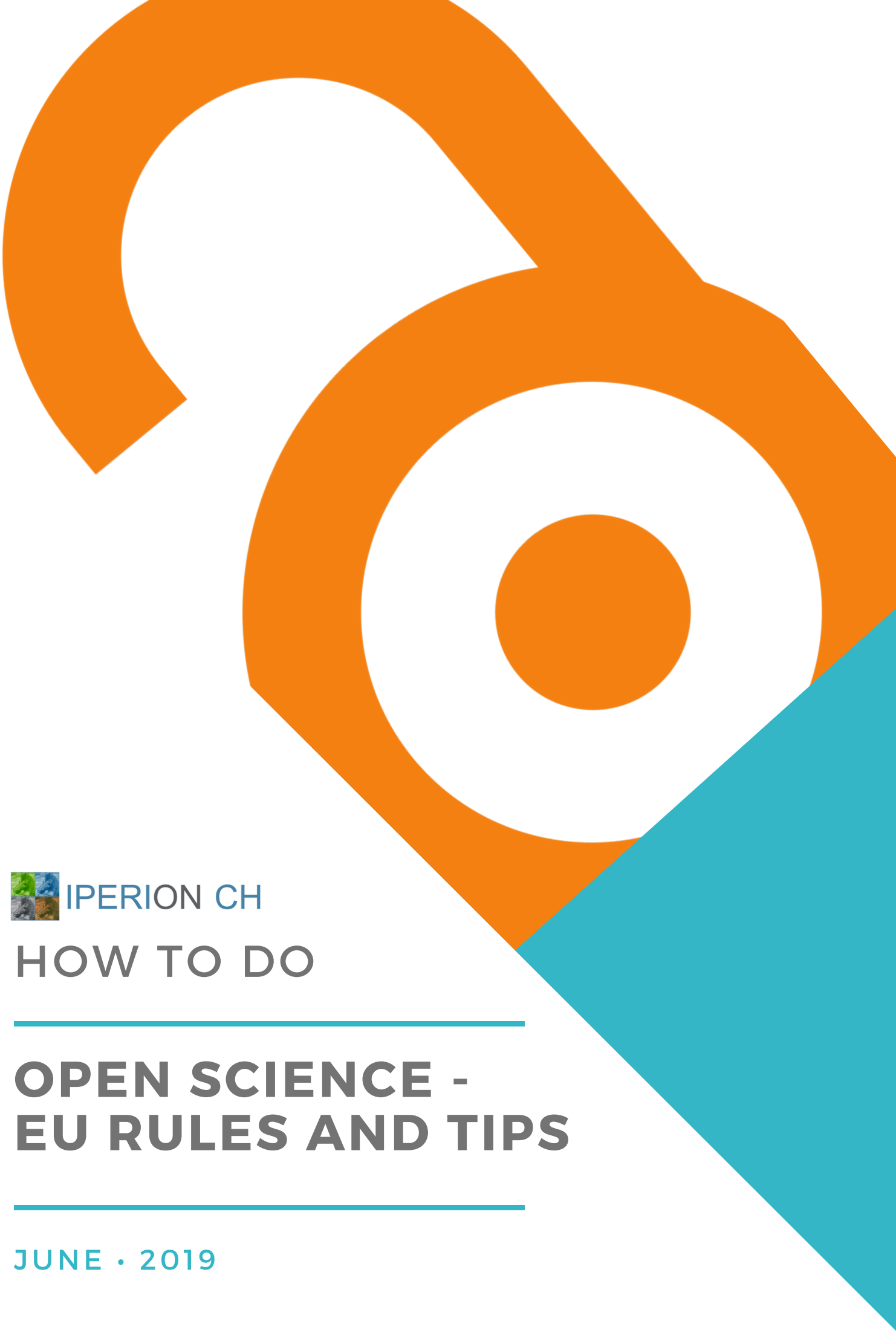

IPERION CH

HOW TO DO

OPEN SCIENCE - EU RULES AND TIPS

JUNE • 2019

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1

Open Access

THE NECESSARY DEFINITIONS

Abbreviations

APC - Article Processing Charge

AM (Accepted Manuscript) or Post-print – A post-print is a document that has been through the peer review process and incorporated reviewers' comments. It is the final version of the paper before it is sent off the journal for publication. It may be missing a final copyedit and won't be formatted to look like the journal. It still looks like the double spaced.doc file.

Copyright – means that all the rights are reserved.

Creative Commons Licence (CC) – means that some rights are reserved. The authors decides which use can be done with the data.

DOI – Digital Object identifier is a unique alphanumeric string assigned by a registration agency (the International DOI Foundation) to identify content and provide a persistent link to its location on the Internet.

Pre-print – A pre-print is the original version of the manuscript as it is submitted to a journal. While the authors may have sought help from their colleagues in selecting data analysis techniques, improving manuscript clarity, and correcting grammar, the pre-print has not been through a process of peer review. It typically looks like a term paper - a double spaced .doc file with minimal formatting. Theses and dissertations are considered to be preprints.

ORCID - ORCID provides a persistent digital identifier that distinguishes you from every other researcher

Post-print – see AM

Publisher's version/PDF – see VoR

Repository - An Open Access repository is a database or a virtual archive established to collect, disseminate and preserve scientific output like scientific articles and datasets and make them freely available. The action of depositing material in a repository is (self)archiving.

SMUR (Submitted Manuscript Under Review) – The version of the article that is under formal review for inclusion in the journal.

VoR (Version of Record) or Publisher's version – The version that is formally published. This includes any First View article that is formally identified as being published online before the compilation of a journal issue. The VoR includes any post-publication corrections.

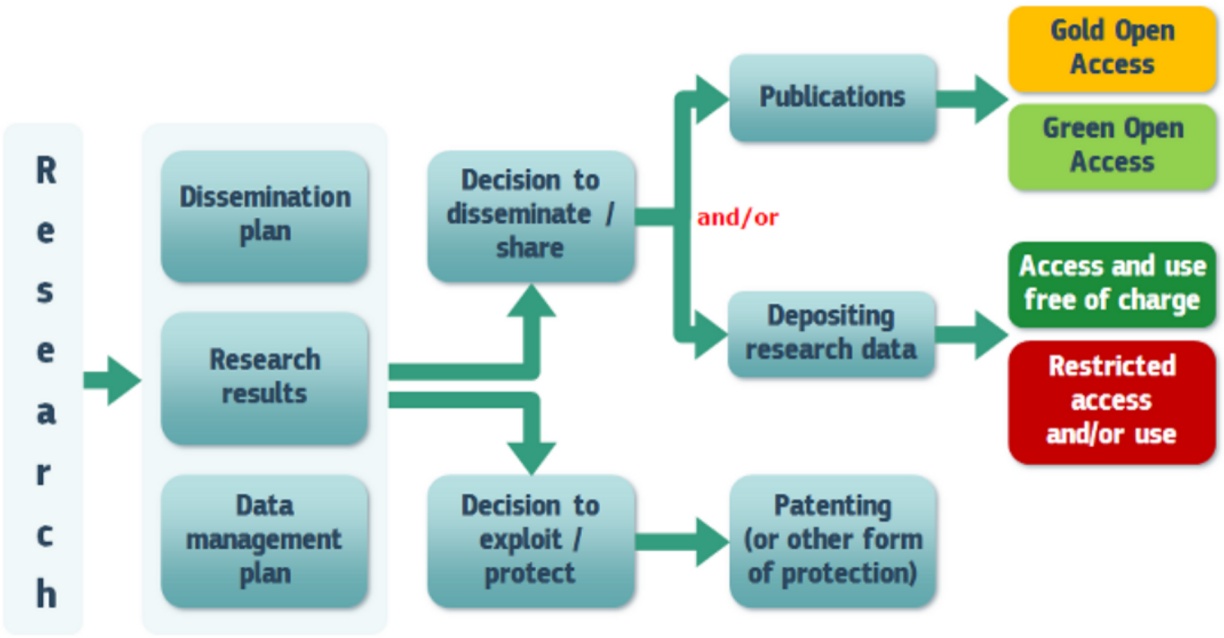
Open Access: definition

Open Access (OA) refers to the practice of providing online access to scientific information that is free of charge to the end-user and reusable. Scientific information means:

1. Publications that are Peer-reviewed scientific research articles (published in scholarly journals)

or

2. Research data (data underlying publications, curated data and/or row data).



Scheme on Open Access
(EU online Guidelines on Open Access)

1. Publication

'Access' includes not only basic elements - the right to read, download and print – but also the right to copy, distribute, search, link, crawl and mine.

Two routes to the open access are:

a. **Self-archiving / green open access**
The author archives the published article or the final peer-reviewed manuscript in an online repository before or after publication. Some publishers request that open access is granted only after an embargo period has elapsed.

b. **Open access publishing / gold open access**
An article is immediately published in open access mode. In this model, the payment of publication costs is shifted away from subscribing readers.
The most common business model is based on one-off payments by authors (APC).
The decision to publish is entirely up to the grant beneficiaries. Open access becomes an issue only if publication is chosen as a means of dissemination. Moreover, open access does not affect the decision to exploit research results commercially, e.g. through patenting.

2. Research Data

Open access to research data refers to the right to access and reuse digital research data under the terms and conditions set out in the Grant Agreement.
Research data refers to information, in particular facts or numbers, collected to be examined and considered as a basis for reasoning, discussion, or calculation.

2

Open Access

EU OBLIGATIONS

AS OPEN AS POSSIBLE, AS CLOSED AS NECESSARY

(FROM: EU GUIDELINES ON OPEN ACCESS)

EU Obligations - H2020 Grant Agreement art. 29.2

Art 29.2 - Each beneficiary must **ensure open access to all peer-reviewed scientific publications relating to its results**. These publications must be read online, downloaded and printed.
If possible, authors should make efforts to make the right to copy, distribute, search, link, crawl and mine possible.
Beneficiaries are encouraged to provide open access to: journal articles, monographs, books, conference proceedings, grey literature (informally published written materials not controlled by scientific publishers, e.g. reports).
Art 29.2 asks to **deposit also research data needed to validate the results** presented in the deposited scientific publications ('underlying data'), ideally in a data repository. This requirement is not related to the openness of the data but to data management.

2 steps:
1. Depositing publications in repository
2. Providing open access to them.

step 1. depositing publications in repository

Beneficiaries have to deposit publications in repository **even where open access publishing (gold open access) is chosen.**
Publications must be machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a standard format.
In some cases, the final version can be deposited before publication, when the article is accepted by the journal. The latest acceptable time to deposit a publication is the date of publication.
A **repository** is a online archive: institutional, subject-based and centralized repositories are all accepted choices.

OpenAIRE is the recommended entry point for researchers to determine what repository to choose.

step 2. Providing open access to publications

There are 2 ways:

1. Self-archiving (green OA)
Beneficiaries can deposit the final peer-reviewed manuscript in a repository of their choice. They must ensure open access to the publication within at most 6 months (12 months for publications in the social sciences and humanities).
To provide support concerning compliance with Horizon 2020 embargo periods the Commission offers a model amendment to publishing agreements, which are often signed between authors and publishers. This model is not mandatory but reflects the obligations for the beneficiary under the H2020 grant agreements.

2. **Open access publishing ('gold' OA)**
Researchers can also publish in open access journals, or in hybrid journals that both sell subscriptions and offer the option of making individual articles openly accessible.
'**Article processing charges**' (APC) are **eligible** for reimbursement during the duration of the project (as other costs). The costs of 'gold' open access publications incurred once a project is completed cannot be refunded from that project's budget.

Other requirements related to art.29.2

Beneficiaries must also provide open access, through the repository, to the bibliographic metadata that identify the deposited publication. These must be in a standard format and must include the following:

["European Union (EU)" & "Horizon 2020"]
INFRAIA-2014-2015, IPERION CH GA n.654028
publication date, the length of the embargo period (if applicable) and a persistent identifier (e.g. DOI).

To monitor any embargo periods, the publication date and embargo period must be provided. The embargo starts from the date of publication online.

The persistent identifier (for example a **DOI - Digital Object Identifier**) identifies the publication. It enables a link to be provided to an authoritative version of the publication.

In all cases, the Commission encourages authors to retain their copyright and grant adequate licences to publishers. **Creative Commons** offers useful licensing solutions. This type of licence is a good legal tool for providing open access in its broadest sense.

Where possible, contributors should also be uniquely identifiable, and data uniquely attributable, through identifiers which are persistent, non-proprietary, open and interoperable (e.g. through leveraging existing sustainable initiatives such as **ORCID** for contributor identifiers and DataCite for data identifiers).

Creative Commons License: How to choose

A license is a statement from the copyright holder explaining what users may and may not do with a given work.
For open access, it is necessary to use CC (Creative Commons) licences, preferibly CC-0 or CC-BY. Only some rights are reserved.

To choose the right CC License, use the tool:

https://ufal.github.io/public-license-selector/

EU Obligations - H2020 Grant Agreement art.29.3

The beneficiaries must:

1. **deposit research data in a research data repository** and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:
(i) the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible;
(ii) other data, including associated metadata, as specified and within the deadline laid down in the “data management plan”.

2. **Provide information (via the repository) about tools and instruments** at the disposal of the beneficiaries and necessary for validating the results.
One straightforward and effective way of doing this is to attach **Creative Commons Licences** (CC BY or CC0) to the data deposited. The EUDAT B2SHARE tool includes a built-in license wizard that facilitates the selection of an adequate license for research data.
https://ufal.github.io/public-license-selector/

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.
As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data under Point (a)(i) and (iii), if the achievement of the action’s main objective (as described in Annex 1) would be jeopardised by making those specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access.

At any stage, beneficiaries can opt out for research data, but they have to explain the reasons.

Which data?

The types of data covered are:

1. the 'underlying data' (the data needed to validate the results presented in scientific publications), including the associated metadata (i.e. metadata describing the research data deposited), as soon as possible;

2. any other data (for instance curated data not directly attributable to a publication, or raw data), including the associated metadata, as specified and within the deadlines laid down in the DMP – that is, according to the individual judgement by each project/grantee.

Some repositories like **Zenodo** (an OpenAIRE and CERN collaboration), allows researchers to deposit both publications and data, while providing tools to link them. Zenodo and some other repositories as well as many academic publishers also facilitate linking publications and underlying data through persistent identifiers and data citations.

Costs related to open access are eligible as part of the grant, if they fulfil the general eligibility conditions specified in the Grant Agreement.

Please pay attention to insert all metadata necessary:

- don't shorten the title;
- insert all the authors;
- associate publications and data to the project!

POSSIBLY, BE PRECISE!

3

IPERION CH final report

OPEN ACCESS - WHAT TO DO

Final report: Open Access in few steps

Under Horizon 2020, each beneficiary must ensure open access to all peer-reviewed scientific publications relating to its results.
Beneficiaries are requested to upload publications and related research data even if they have published in golden open access.

1. Verify in OPENAIRE EXPLORE

Verify if your publications are present in OPENAIRE EXPLORE and verify if the publications are linked to the IPERION CH project.

If it is not the case...

2. Verify the policy of the editor

Please verify the policy of the publisher using the tool: **sherpa romeo**. In case your journal is not present, please check the policy directly in the website of the publisher.

2. What you have to upload and where

Upload publications and research data (related to the publication) in an online repository, even if you have published in golden open access.
You can use your institutional repository (only if it is compliant with EU obligations - verify through the tool: **re3data.org**) or in the IPERION CH repository in Zenodo (**IPERION CH community: https://zenodo.org/communities/iperionch/?page=1&size=20**)
EC accepts only postprints, accepted manuscripts and publisher's version/pdf.

POST PRINT or AM (Accepted Manuscript) – A post-print is a document that has been through the peer review process and incorporated reviewers' comments. It is the final version of the paper before it is sent off the journal for publication. It may be missing a final copyedit and won't be formatted to look like the journal. It still looks like the double spaced.doc file.

EC requirements allow an embargo period: 6 months for publication in the field of STEM and 12 months for those in SSH. Zenodo allows you to set the embargo period.
When you upload publications and data, don't forget the acknowledgment:
["European Union (EU)" & "Horizon 2020"]
INFRAIA-2014-2015, IPERION CH GA n.654028
publication date, the length of the embargo period (if applicable) and a persistent identifier (e.g. DOI).
Use ORCID and DOI to permanently identify you and your publication and data.

3. Verify the Participant Portal

Enter in the Participant Portal in "continuous reporting", verify your publications and check if all data are present, complete and / or correct.

in case of need, write to:
CO@IPERIONCH.EU

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TOOLS AND TIPS ALONG THE WAY

Uselful tool

Verifying the quality of a journal	https://doaj.org/	Directory of Open Access Journals (DOAJ) is a community-curated online directory that indexes and provides access to high quality, open access, peer-reviewed journals. To verify the quality of open access journals.
Verifying the reputation of a journal	ThinkCheckSubmit.org	Think. Check. Submit. helps researchers identify trusted journals for their research.
Verifying publisher's policy	http://sherpa.ac.uk/romeo/index.php	Use this site to find a summary of permissions that are normally given as part of each publisher's copyright transfer agreement. If don't find your journal, check directly in the website of the editor.
Finding a repository	Re3data.org	To find a repository (by institute, by discipline)
OPENAIRE - search for	https://explore.openaire.eu/	Search for publications, datasets, software and other research products and their links.
Collaborative tools for writing, annotating webpages, preprints, etc…	https://www.authorea.com/	Authorea is the leading collaborative platform to read, write, and publish research.
	https://www.overleaf.com/	The easy to use, online, collaborative LaTeX editor
	https://web.hypothes.is/	Annotate the web, with anyone, anywhere
	https://pandas.pydata.org/	Pandas is an open source, BSD-licensed library providing high-performance, easy-to-use data structures and data analysis tools for the Python programming language.

Uselful tool

Collaborative tools for writing, annotating webpages, preprints, etc…	https://www.theopennotebook.com/	The Open Notebook is a non-profit organization that provides tools and resources to help science, environmental, and health journalists at all experience levels sharpen their skills.
	https://jupyter.org/	The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. Uses include: data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more.
Visual Cluster of Research results	https://openknowledgemaps.org/index	It is a visual cluster of the research results. It is a visual interface that dramatically increases the visibility of research findings for science and society alike.
Registries for data and other	https://osf.io/registries/	The open registries network. It is useful to link your experiment or preprints or meetings to a precise date or initial hypothesis.
	Aspredicted.org	It is a standardized pre-registration that requires only what's necessary to separate exploratory from confirmatory analyses. You will easily generate a pre-registration document that takes less effort to evaluate than it takes to evaluate the published study itself.

Uselful tool

Platforms for preprints, trials, grant proposals	https://www.researchprotocols.org/	Services for Researchers to discover new research, work & collaborate smarter, publish faster & without barriers
	https://f1000.com/	
	https://openjournalsystems.com/	Open Journal Systems is an open-source software for the management of peer-reviewed academic journals.
	https://riojournal.com/	The Research Ideas and Outcomes (RIO) journal publishes all outputs of the research cycle, including: project proposals, data, methods, workflows, software, project reports and research articles together on a single collaborative platform, with the most transparent, open and public peer-review process. RIO's scope encompasses all areas of academic research, including science, technology, humanities and the social sciences.
How to license research data	http://www.dcc.ac.uk/resources/how-guides/license-research-data	
	https://ufal.github.io/public-license-selector/	
Creating links	https://www.ncbi.nlm.nih.gov/projects/linkout/	It is a service that allows you to link directly from PubMed and other NCBI databases to a wide range of information and services beyond the NCBI systems. LinkOut aims to facilitate access to relevant online resources in order to extend, clarify, and supplement information found in NCBI databases. Examples of LinkOut Resources include full-text publications, biological databases, consumer health information, research tools, and more.

Uselful tool

Tools for Data Management	http://www.dcc.ac.uk/	Digital Curation Center – many tools for data management
	https://www.ands.org.au/	Data centre – many tools for data management
	dans.knaw.nl/en	Tools for data management
	http://www.curationexchange.org/	Costing tool to plan costs for data management (for administrators). Data management and sharing activities need to be costed into research, in terms of the time and resources needed. By planning early, costs can be significantly reduced.
	https://www.ukdataservice.ac.uk/manage-data/plan/costing	Costing tool to plan costs for data management (for administrators).
Creating a Online DMP	https://dmponline.dcc.ac.uk/	Online tool to easily create a data management plan.
Legal issue	https://www.openaire.eu/d3-2-toolkit-for-researchers-on-legal-issues	Toolkit on legal issues related to research (copyright, etc.)
Tool- FAIR Principles	https://www.go-fair.org/ https://www.go-fair.org/resources/rdm-starter-kit/	It is a bottom up international approach for the practical implementation of the European Open Science Cloud (EOSC) as part of a global Internet of FAIR Data & Services
Tool- FAIR Principles	https://www.rd-alliance.org/groups/fair-data-maturity-model-wg	It is a tool in a beta version. It is a test to evaluate if your data are fair.
Citation	https://www.force11.org/datacitationprinciples	It describes the principles to cite data in scientific communication through the Joint Declaration of Data Citation Principles
Permanent Identifier	https://orcid.org/	For authors
	https://www.doi.org/	For digital objects
Verifying the global impact of an article	https://www.altmetric.com/audience/researchers/	It is a tool to track and demonstrate the impact of an article to key stakeholders.

5

REFERENCES

References

Berlin Declaration - https://openaccess.mpg.de/67605/berlin_declaration_engl.pdf

EU documents

Guidelines to the Rules on Open Access to scientific publications and open access - http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf)

Evaluation of research careers fully acknowledging Open Science Practices (July 2017) - https://ec.europa.eu/research/openscience/pdf/os_rewards_wgreport_final.pdf

Providing researchers with the skills and competencies they need to practice Open Science - https://ec.europa.eu/research/openscience/pdf/os_skills_wgreport_final.pdf

Open Science Policy Platform (Integrated advice of the open science policy platform on 8 prioritised open science ambitions) - https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform

EU Open Access online manual - http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm

Useful documents

H*ow do I know if my research data is protected* - https://www.openaire.eu/how-do-i-know-if-my-research-data-is-protected : Openaire

Information guide – introduction to ownership of rights in Research data. CREATe, University of Glasgow, 2018 - http://eprints.gla.ac.uk/171314/

Data versioning – https://www2.le.ac.uk/services/research-data/organise-data/version-control

MANTRA, a free online course for those who manage digital data as part of their research project.– https://mantra.edina.ac.uk/

FOSTER EU project on management and sharing data e anche data protection and ethics – https://www.fosteropenscience.eu/about

Turning FAIR into reality - https://ec.europa.eu/info/sites/info/files/turning_fair_into_reality_1.pdf

These guidelines are drafted by Laura Benassi for internal use of IPERION CH consortium.
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