Bibliographic resources and research tools for PHD students in Information Engineering

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What we'll talk about

- Scholarly publishing
- Tips on authors' rights
- Bibliometrics and bibliometric indicators
- Open Access
- Who requires Open Access
- Facilitations for authors
- Repositories + Padua Research Archive (IRIS)
- Research data management + Research Data Unipd
- Unipd Library System services for authors



Rakicevic Nenad from Pexels

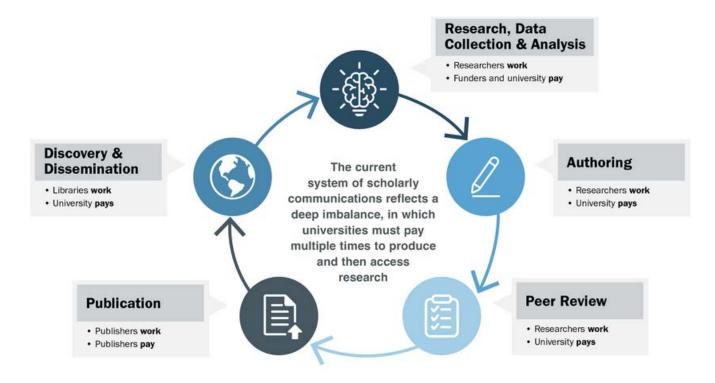
Workshop materials

Workshop slides are available here:

http://biblioingegneriacentrale.cab.unipd.it/usa/laboratori/materiali

Scholarly publishing

Cycle of Scholarly Publishing



https://library.unc.edu/2020/02/scholarly-publishing-at-the-tipping-point/

Versioning

AUTHOR MANUSCRIPT

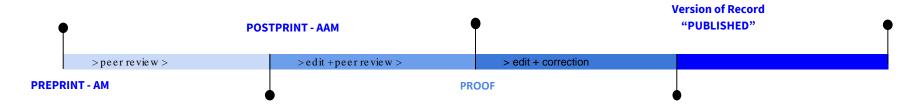
submitted

UNCORRECTED/ CORRECTED PROOF

Version in which changes were applied as a result of peer review and was re-submitted to the publisher.

FINAL published VERSION - Version of Record

The final published version. Online, in print or both.



AUTHOR ACCEPTED MANUSCRIPT

This is the version accepted for publication after it has been peer-reviewed

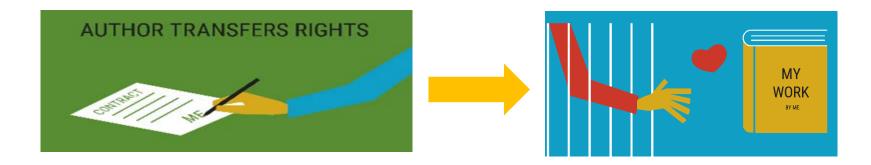
EARLY ACCESS VOR

Editorial version without definitive page numbers, issue or volume. Also known as Epub, Early view, article in press, ...



Authors' rights

Many Scholarly or Academic Journals require authors to sign away their rights to their own articles!





Intellectual property

Intellectual Property (IP) protects different types of intellectual creations. It is usually divided into two parts:

1. Industrial property

- Designs and models protects the new design of an utilitarian object
- Patent law protects new inventions

- **Trademark law** protects **signs** used in commerce to distinguish the origin of goods or services

2. Literary and artistic property

Copyright / author's rights

What is meant by copyright, publishing rights, related rights...

Moral Rights

Author's right allows the author to be the one entitled to dispose of his/her works in an exclusive way.



Economic Rights

authorship
(paternity)

repentance

NON-TRANSFERABLE RIGhts

on unpublished works

to the integrity of the work

publication reproduction transcription public diffusion representation

communication to the public

creation of derivative works

Secondary rights: rental and lending, resale

Amendment to the contract (addendum)

<u>SPARC addendum</u> and <u>Science Commons SCAE</u> are legal tools that authors can use to safeguard their editorial rights by amending standard publisher agreements.

In the guidelines for authors, Sparc illustrates how to use the addendum to the editorial contract to guarantee authors' rights. SPARC addendum is also available in Italian.

For authors participating in EU-funded projects who need to publish in non-Open Access journals, Horizon 2020 has proposed a <u>specific model of publishing agreement</u>.

In the revised editorial agreement, the author agrees with the publisher on the possibility of:

- maintain the right to reproduce, distribute and publicly display the article, not for commercial, but for teaching and research use
- self-archive the article on the personal or institutional website and deposit it in open archives
- prepare works derived from the article: for example, use the contents of the publication to create didactic material.

https://bibliotecadigitale.cab.unipd.it/en/digital-library/about-publishing/while-publishing

Italian law on author's rights



- Civil Code (art. 2575-2583)

- Legge 22 aprile 1941 n. 633, "Protezione del diritto d'autore e di altri diritti connessi al suo esercizio"

Amended by

- Legge 18 agosto 2000 n. 248, "Nuove norme di tutela del diritto di autore"

Copyrights on doctoral thesis



Submission and publication of PhD theses

Regolamento per i corsi di dottorato di ricerca

ART. 32.2: La domanda di ammissione all'esame finale deve essere corredata: a) da un esemplare della tesi in formato digitale per il deposito presso l'archivio dell'Ateneo che ne garantisce la conservazione e la pubblica consultabilità. Lo stesso deposito è funzionale anche ai fini di adempiere all'obbligo di deposito della tesi presso le biblioteche nazionali di Roma e Firenze. In caso di richiesta di revisioni da parte dei valutatori la tesi definitiva deve essere depositata secondo i tempi e le modalità annualmente stabilite dall'Ateneo.

[You should attach to the application to the final exam: a) a digital copy of your thesis to be stored in the Unipd institutional repository, which garanties conservation and public accessibility. The storage meets the requirement to deposit the thesis in the Italian national libraries in Rome and Florence. In case the evaluator requires a revision of the thesis, the revised final version must be stored accordingly to the calendar yearly established by Unipd.]

Check deadlines for submission in Doctoral program webpages

Embargo (consent form)

[temporary embargo]

[permanent embargo]

Richiede che il testo completo della tesi depositata nell'archivio istituzionale <u>Padua Research</u> Archive (IRIS) rimanga chiuso per (selezionare):

- o 12 mesi
- o 18 mesi
- 36 mesi

con la seguente motivazione3 (selezionare):

- Brevetto
- o Motivi editoriali (allegare una copia del contratto sottoscritto con l'editore o altra attestazione)
- Protezione dei diritti economici dell'Ateneo
- Segreto industriale (se è stato firmato un accordo di non divulgazione, allegare una copia dell'accordo)

È possibile chiedere che venga applicata una chiusura permanente nel caso in cui intervenga una delle motivazioni seguenti (selezionare):

- o inserimento nella tesi di testi e/o materiale altrui non autorizzato, in violazione dei diritti di terze parti, d'autore o editoriali, fatta eccezione per l'uso di immagini a bassa risoluzione
- motivi di sicurezza pubblica o nazionale: indicare obbligatoriamente nel campo NOTE tutti i dati necessari per la verifica
- motivi di privacy o presenza di dati sensibili: assicurarsi che il motivo non rientri nell'embargo temporaneo.

In questo caso è necessario selezionare in Uniweb l'opzione di 36 mesi di embargo e successivamente contattare l'Ufficio Dottorato e Post Lauream - Settore Dottorato di Ricerca al seguente indirizzo e-mail phd@unipd.it specificando nell'oggetto della mail: "Richiesta embargo PERMANENTE".

Accesso libero Embargo: 30/05/2024

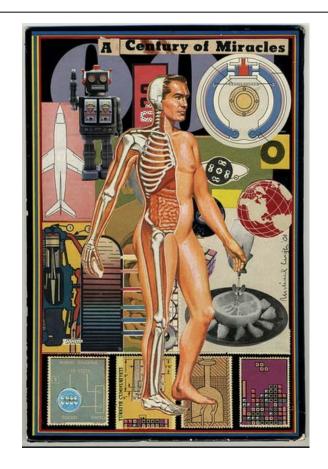
FILES IN THIS ITEM:

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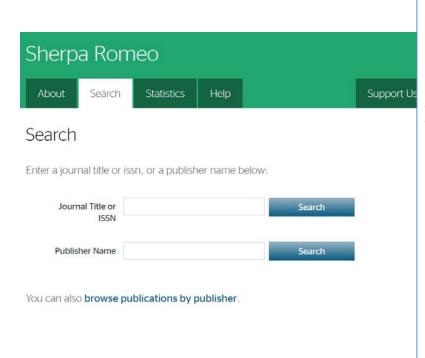
Editorial reasons

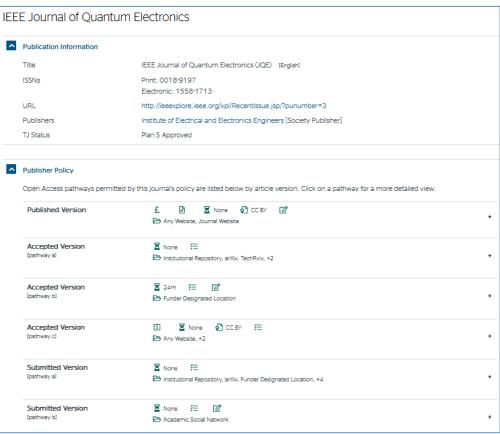
Theses including articles (already published or not)

- pay attention to publishers' policies concerning the use of articles in PhD dissertations
- ask for permission through an Addendum
- choose the pre-print or the Accepted version



Sherpa Romeo





https://www.oa.unito.it/new/cose-utile/leggere-bene-le-indicazioni-di-sherpa-romeo/

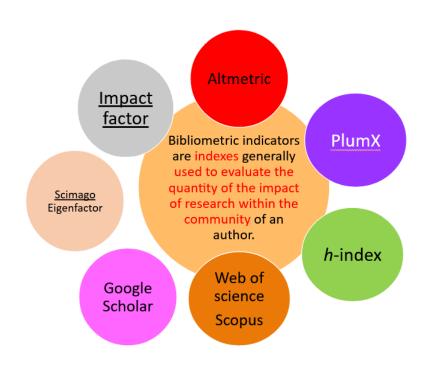
Bibliometrics and bibliometric indicators

Visibility, prestige and citation impact of a journal

Before choosing a publisher or journal to submit a work for publication, it is a good idea to evaluate what opportunities for visibility in the reference scientific community that the journal offers. The more disciplinary and interdisciplinary databases that index the journal, the greater the possibility of disseminating the results of research.

The "Impact of research" section collects information on Web of Science and Scopus, databases that calculate the most popular citation indexes (citation count, Impact Factor, SJR, h-index and others).

It is important to verify the citation impact (Impact Factor) of the journal, as the number of citations that a publication receives is of great importance both for defining the impact potential of the research presented within it, and for the attribution of scores in the publications competitions, and the recurring <u>ANVUR</u> assessment exercises (e.g. VQR).



https://bibliotecadigitale.cab.unipd.it/en/digital-library/about-publishing/while-publishing#autotoc-item-autotoc-5

Bibliometrics and...

BIBLIOMETRICS is a set of mathematical and **statistical methods** used to analyze and measure the quantity and quality of books, articles, and other forms of publications.

These analyses are **used to track researcher output and impact** or to calculate a journal impact factors, which can help you to decide into which journal to publish.

Traditionally, bibliometric analysis has **focused on the number of citations** for a scholarly publication, as evidence of its academic value.

The **transition to e-publishing** and a wider definition of 'research output' has facilitated other forms of data collection, e.g. page views, downloads, social media mentions and more.

Scientific evolution pathways of bibliometric research between 1969 and 2020. (Front. Res. Metr. Anal., 24 September 2021 Sec. Research Policy and Strategic Management https://doi.org/10.3389/frma.2021.742311)

... bibliometric indicators



Bibliometric indicators are based on citation analysis: the incidence of citations and practices in communicating the results differ depending on the communities and research topics, as well as being dependent on the temporal variable.

The impact assessment must therefore be carried out analytically and by comparing the values of a metric in the same disciplinary category and regarding the same time window.

All metrics have limitations, they should not be used as the only source of analysis or classification, but as support tools for qualitative evaluation (informed peer review, panel).

Beware of fake metrics: when using bibliometric indicators in choosing the journal in which to publish, it is necessary to verify the actual calculation in the subscription citation databases. False metrics (or with names similar to the most well-known) are an indication of a journal or publisher is not credible.

Impact Factor

The **impact factor (IF)** is a measure of the frequency with which the average article in a journal has been cited in a particular year.

It is used to measure the importance or rank of a journal by calculating the times its articles are cited.

How Impact Factor is Calculated?

The calculation is based on a two-year period and involves dividing the number of times articles were cited by the number of articles that are citable.

The Impact Factor is used to compare different journals within a specific disciplinary field.

The <u>Journal of Citation Report</u> indexes more than 11,000 science and social science journals.

It is important to note that Impact Factor is a journal metric and should not be used to assess individual researchers or institutions.

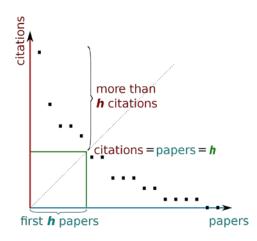


H-Index

The **h-index** quantifies an individual's scientific research output (cit. J.E. Hirsch).

It is a metric referable to the **single author** (or **groups of authors**) and is represented and can be calculated in the author profiles both in **Web of Science** and in **Scopus**.

The two databases index sources that are not completely overlapping, both serial and monographic, are selected using editorial and qualitative criteria (WoS, Scopus), with different methodologies and timing: **the calculation of the H-index may differ depending on the database consulted**, as well as varying over time (it is good practice to quote the date and source of the calculation).



SCImago Journal Ranking

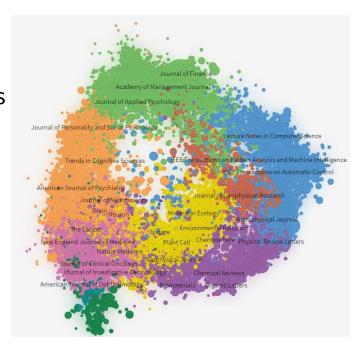
SCImago a database that can be accessed for free online, which allows you to obtain statistics on the citations of articles published in peer-reviewed journals.

Its numeric value represents the average number of weighted citations received during a selected year per document published in the journal during the previous three years

It provides statistics and compares the number of published articles and citations in each country.

Journal ranking

Country rankings



Open Access



Accessible

Without costs for the reader

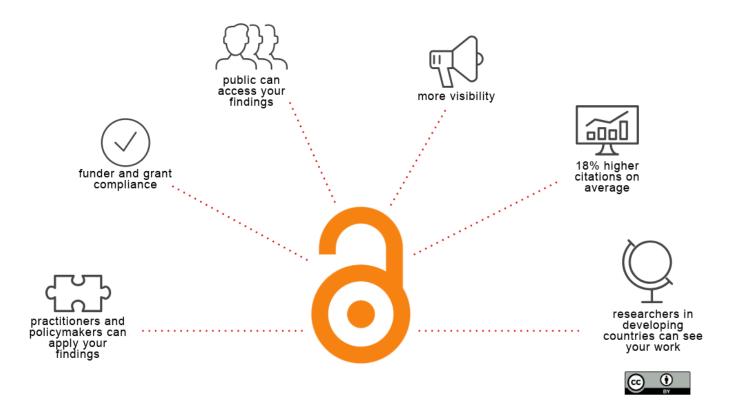
Open access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions

Possibility to reuse

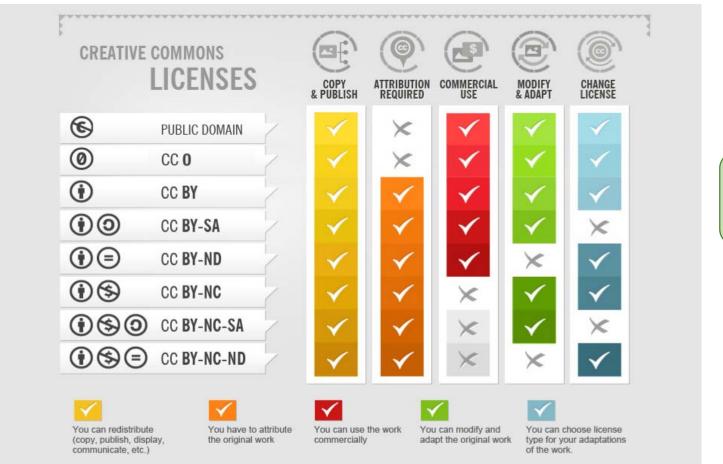
Open Access without barriers and restrictions

to scientific knowledge

Open Access benefits



Open licenses: Creative Commons



Choose the CC

license

for your work

Immagine riadattata da Creative Commons licenses by Foter (CC-BY-SA)

Publishing in OA





6 Ways To Identify Predatory Publishers or vanity Press

- <u>1</u> The journal does not identify a formal editorial/review board.
- 2 The publisher has no policies or practices for digital preservation.
- 3 The publisher begins operations with a large fleet of journals, often using a template to quickly create each journal's home page.



- 4 The publisher provides insufficient information or hides information about author fees, offering to publish an author's paper and later sending a previously-undisclosed invoice.
- <u>5</u> The name of a journal does not adequately reflect its origin.
- 6 The journal falsely claims to have an impact factor, or uses some made up measure (e.g. view factor), feigning international standing.

How to identify a predatory publisher

It is useful to consult the infographic on <u>predatory publishing</u> to evaluate better the publisher with whom to publish.

Think, Check & Submit: a tool to evaluate the publisher and verify its policies.

DOAJ - the Directory of Open Access Journal: it's the best way to find trustworthy information on Open Access journals







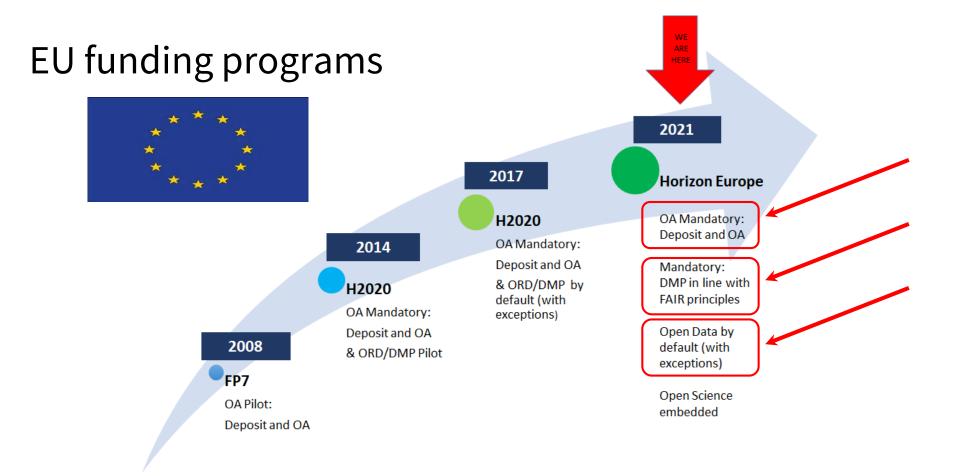








Who requires Open Access?



From OpenAIRE webinar: Horizon 2020 Open Science Policies and beyond, October 22nd, 2019 by Emilie Hermans (Ghent University) https://www.slideshare.net/OpenAIRE_eu/horizon-2020-open-science-policies-and-beyond-with-emilie-hermans-openaire

Funders: OA Mandatory Policies

Projects funded with public funds

- **Italian Law 112/2013:** Publicly funded research (+ 50%) outputs in Scholarly Journals (18-24 month embargo, preprint, AM, VoR)
- Plan S & cOAlition S funders: rights retention via mandatory deposit with CC-BY licence, no embargo, AM o VoR version, Hybrid OA only under *Transformative* Agreement
- EU Horizon Framework (<u>H2020</u> / <u>H Europe</u> MSCA fellowships), see Plan S & Open Res. Europe
- **ERC** [Article 29.2]: mandatory deposit 6-12 M Embargo AM o VoR version. The ERC Scientific Council recommends as disciplinary repos: <u>Europe PubMed Central</u> for publications in the life sciences domain and <u>arXiv</u> for publications in the physical and engineering sciences. Recommended repository for monographs (etc.) is the <u>OAPEN Library</u>.
- MUR (ITA) SIR 2014, PRIN 2015, PRIN 2017, PRIN 2020, see Law 112/2013
- **UniPD Supporting TAlent in ReSearch** STARS Grants 2019, 2020, 2021

Projects funded with private funds

- Bill & Melinda Gates Foundation
- Wikimedia Foundation
- Telethon
- ..



The journey towards Open Science at the University of Padova

UniPD promotes the free and open distribution of the University's research results, as defined in its:

- Statute [Title III, Art. 56, Paragraph 3]
- "Policy sull'Accesso Aperto (Open Access) alla letteratura scientifica"
- "Regolamento per l'Accesso Aperto (Open Access) alla produzione scientifica dell'Università di Padova"

2004
Messina OA declaration

Comparison Statuto, Titolo III, Art. 56, Comma 3

Comparison Statuto, Titolo III, Art. 56, Comma 3

2017

Open Access

Regulation

2018

Policy on Open

data



Facilitations for UniPd authors

Read and Publish contracts aka
Transformative agreements

https://bibliotecadigitale.cab.unipd.it/biblioteca-digitale/per-chi-pubblica/agevolazioni-per-gli-autori

https://bibliotecadigitale.cab.unipd.it/ en/digital-library/aboutpublishing/agreements-withpublishers

Read & Publish contracts main characteristics

- they are commercial contracts and, just like the "classic" subscription contracts, they
 are negotiated between publishers and institutions that in Italy are represented by
 CARE-CRUI;
- in addition to historical contents with closed access, they offer an open access publishing service;
- they mainly apply to **hybrid journals**, but in some cases they also apply to full open access journals (Gold OA).
 - authors no longer pay APCs (paid centrally by the institution);
 - authors retain the rights to their works

How does OA Read & Publish work?

- when submitting the article, the corresponding author follows the instructions given by the publisher, selecting the OA option;
- the corresponding author is identified by the publisher as an affiliate of UniPD through these information:
 - 1. Membership body
 - 2. Institutional address
 - 3. ID (university network or auth-proxy);
- **after the article has been accepted**, the University Library Center is required to verify the correctness of the information provided by the corresponding author and to definitively approve the OA option.

Contracts in progress

- American Chemical Society - ACS (Hybrid OA)
- Annual Reviews (S20)
- Cambridge University
 Press CUP (Hybrid & Gold OA)
- De Gruyter (Hybrid OA)
- Emerald (Hybrid OA)
- IEEE (Hybrid & Gold OA)

- Institute of Physics IOP (Hybrid & Gold OA)
- Lippincott (Hybrid OA)
- Royal Society of Chemistry -RSC (Hybrid OA)
- Springer (Hybrid OA)
- Wiley (Hybrid OA)

Other kinds of facilitations

Discounts on APCs

- Taylor & Francis
- SCOAP3
- MDPI

Publishers Open Access only: no OA fees

- PLOS
- Open Book Publisher

Facilitations for Authors

Thanks to specific agreements stipulated with publishers, Unipd authors who wish to publish their work in Open Access can take advantage of facilitations on the payment of APCs (Article Processing Charge).

Transformative agreements

According to the new type of agreements defined as "transformative", only authors belonging to the institutions adhering to the specific transformation contract can publish without additional costs.

Each article managed under the agreement is defined "token" or "voucher": the vouchers for the free publication of Open Access articles, although available in large numbers for each institution adhering to the consortium contract, are limited at the national level.

Requirements for accessing the facilitations provided for by the Transformative Agreement

The corresponding author must formally belong to the University. Upon submitting the article to the journal, the corresponding author must indicate Padua. Furthermore, the use of the institutional e-mail @unipd.it is preferable.

https://bibliotecadigitale.cab.unipd.it/en/digitallibrary/about-publishing/agreements-with-publishers

Transformative agreements

Requirements for accessing the facilitations provided for by the Transformative Agreements

Publishers who provi Library Helpline

- + American Chemical Society ACS
- + Annual Reviews
- + Cambridge University Press CUP
- + De Gruyter
- + Emerald
- + IEEE
- + Institute of Physics IOP
- + Lippincott
- + Open Book Publisher
- + PLOS
- + Royal Society of Chemistry RSC
- + Springer
- + Wiley

Sci-Hub ideas



knowledge to all

We fight inequality in knowledge access across the world. The scientific knowledge should be available for every person regardless of their income, social status, geographical location and etc.

Our mission is to remove any barrier which impeding the widest possible distribution of knowledge in human society!

no copyright

We advocate for cancellation of **intellectual property**, or copyright laws, for scientific and educational resources.

Copyright laws render the operation of most online libraries illegal. Hence many people are deprived from knowledge, while at the same time allowing rightholders to have a huge benefits from this. The copyright fosters increase of both informational and economical inequality.

open access

The Sci-Hub project supports Open Access movement in science. Research should be published to open access, i.e. be free to read.

The Open Access is a new and dvanced form of scientific communication, which is going to replace outdated subscription models. We stand against unfair gain the publishers collect by creating limits to knowledge distribution.

Unpaywall, Dissemin and Open Access Button

to find Green Open Access contents available in preprint, postprint, institutional / disciplinary servers ... in a legal way!

Repositories

Disciplinary archives

 databases collecting the production of a specific scientific community



https://engrxiv.org/index



https://www.techrxiv.org/

Interdisciplinary archives: Zenodo

For self-archiving of publications and data, open to all researchers in the world.

Managed by CERN for OpenAIRE (EU)



https://zenodo.org/

Search results are stored securely in the same cloud infrastructure as CERN's LHC search data

Possibility of identifying any subsidies, as they are integrated into the reporting lines Assignment of a digital object identifier (DOI)

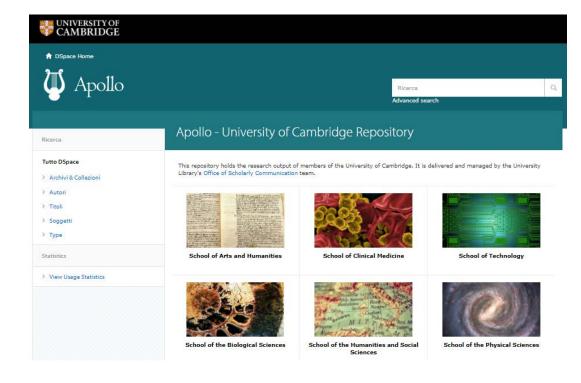
Possibility of assigning flexible guarantees of use, since not everything is under Creative Commons

Institutional archives

= databases that collect the scientific production of an institution

Main types of documents:

- Scholarly articles
 - o Pre print
 - o Post print
 - o Version of record
- Conference papers
- Book chapters



Institutional Repositories vs. Academia.edu or ResearchGate

	Open access repositories	Academia.edu	ResearchGate
Supports export or harvesting	Yes	No	No
Long-term preservation	Yes	No	No
Business model	Nonprofit (usually)	Commercial. Sells job posting, services, sells data.	Commercial. Sells ads, job, posting services, data.
Sends you lots of e- mails (by default)	No	Yes	Yes
Wants your address book	No	Yes	Yes
Fulfills requirements of Unipd's OA policies	Yes	No	No



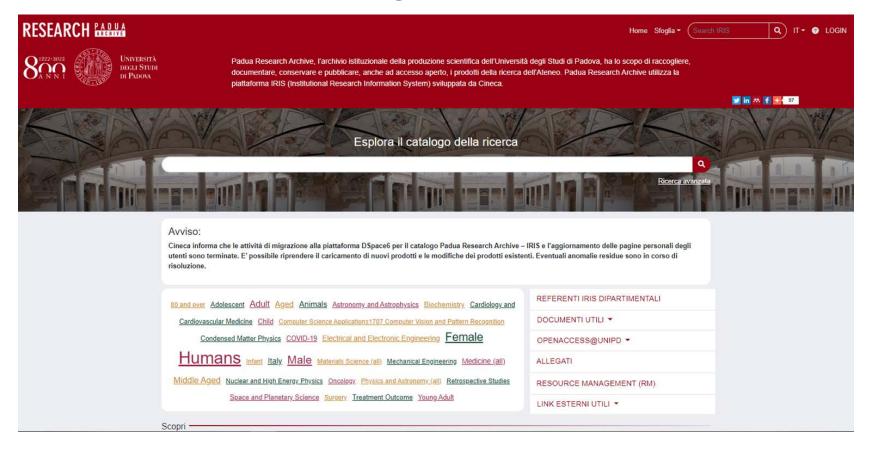
PRA (IRIS) and PhD students

Regolamento per i corsi di dottorato di ricerca

ART. 22.11: È obbligo del dottorando accedere al catalogo delle pubblicazioni di ateneo e inserire i dati relativi alla propria produzione scientifica, se presente.

[It is a necessary condition for the PhD students to access the institutional repository for the outputs of research and enter information relating to their scientific production, if any]

PRA (IRIS): homepage - info and instructions



https://www.research.unipd.it/

PRA (IRIS): a multipurpose archive

- Archive for Unipd outputs of research
- Open Access archive:
 - o pre-print
 - post-print, with embargo if needed
 - editorial version, if it is allowed



Platform for the assessment of research (eg. VQR 2015-2019, ASN, ...):

- if publication rights are transferred to the publisher: the attachment will be visible only to the evaluators
- if documents are already published in OA: the attachment will be visible to everyone (attachments declared completely open access by authors are anyway checked)

IRIS QUICK USER GUIDE

Padua Research Archive (PRA) as an Open Access archive: IRIS beyond Research evaluation

Once you have uploaded your work to IRIS/PRA the research support group:

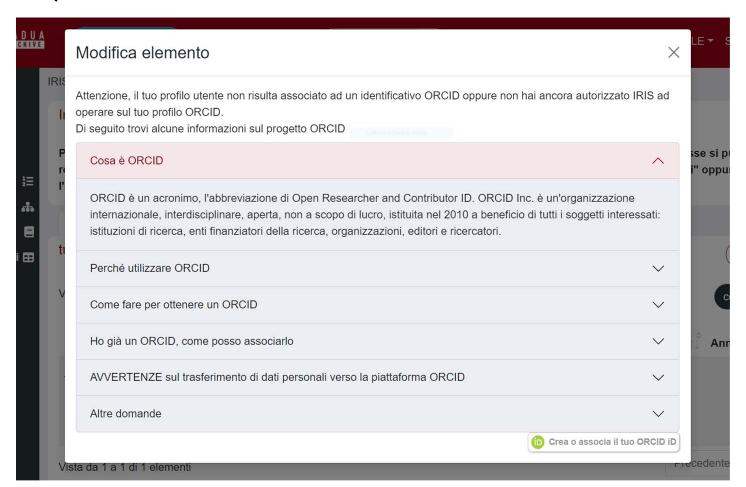
Checks whether the publisher's policies allow you to publish open access

Checks the embargo dates and validates the attachment

Supports authors via SBA Help -Research Support -OA The validation process involves a delay in the publication of the OA content in PRA, but protects the author.

It is possible to report contributions that need to be displayed faster on the public portal.

PRA (IRIS): author's ID



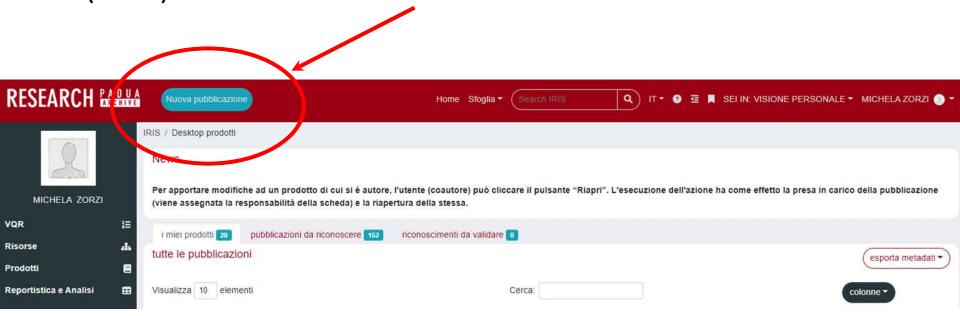
PRA (IRIS): authors' ID



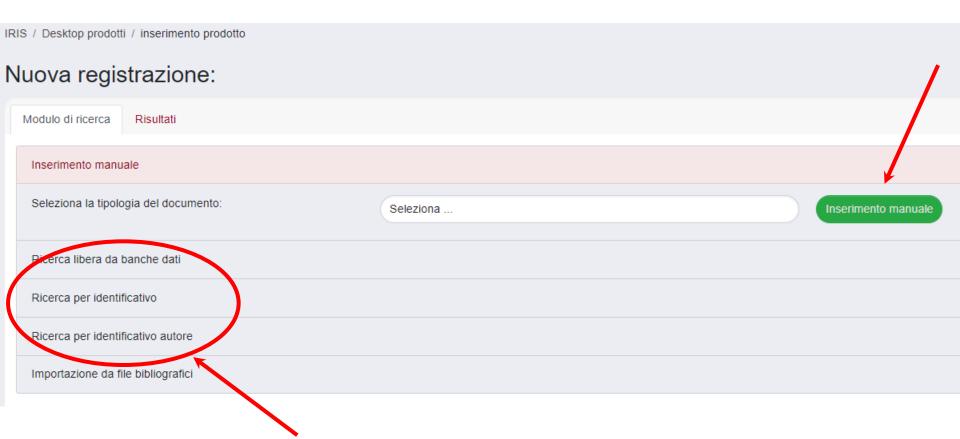
ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized.

https://orcid.org/

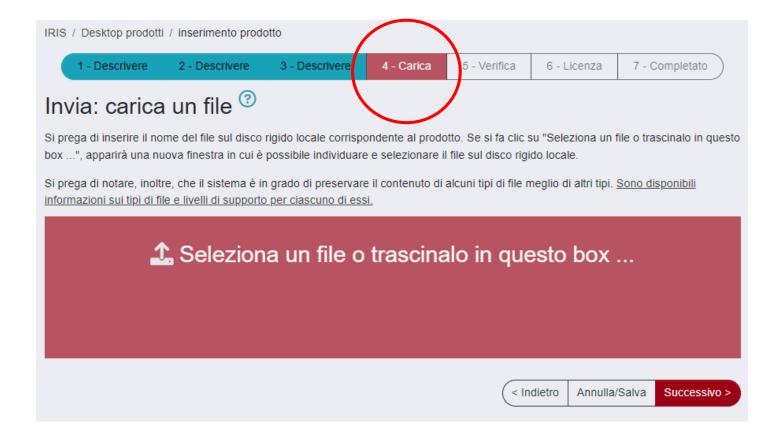
PRA (IRIS): new submission



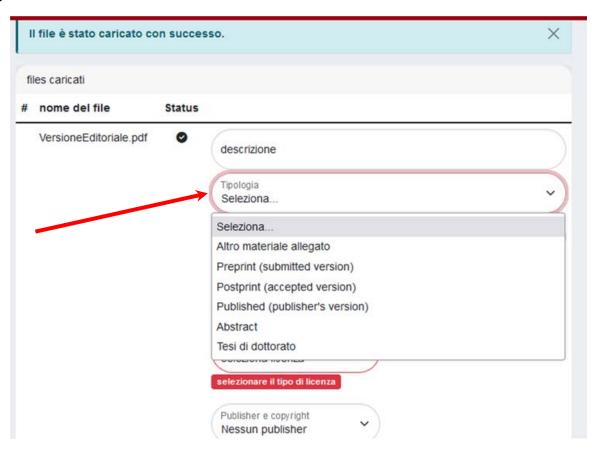
PRA (IRIS): new submission



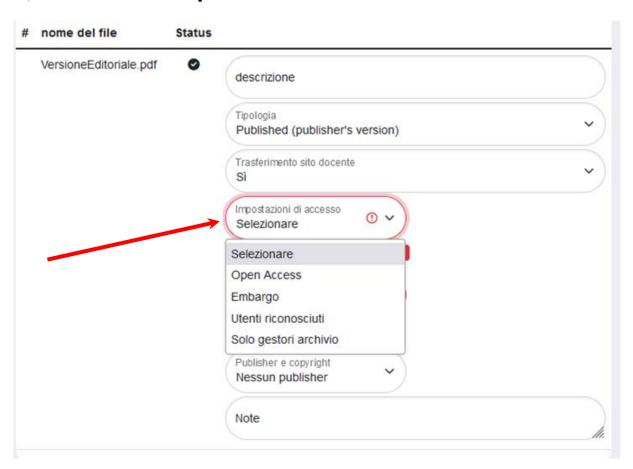
PRA (IRIS): Tab 4, file upload and licenses choice



PRA (IRIS): versions of documents



PRA (IRIS): access options



PRA (IRIS): Sherpa/Romeo to know publishers' policies

SCOPUS

SCOPUS. Policy dell'editore:

All Open Access documents Hybrid Gold Open Access All Green Open Access Green Accepted Open Access

<u>Legenda</u>

UNPAYWALL

UNPAYWALL. Policy dell'editore:

la policy è: OPEN ACCESS

Database di SHERPA/RoMEO per le policy degli editori



riutilizzo dei dati di RoMEO, o per interpretazioni alternative che

derivano da queste informazioni.

Il database SHERPA/RoMEO fornisce i sequenti dati per la rivista che hai inserito.

Rivista: Continental Philosophy Review (ISSN: 1387-2842)

Editore: Springer



Pre-print dell'autore:L'autore può archiviare il pre-print (cioè pre-referaggio)

Post-print dell'autore: Fatte salve le limitazioni di seguito, l'autore può archiviare il post-print (cioè la bozza finale postreferaggio)



Versione dell'editore: Fatte salve le limitazioni di seguito, l'autore può archiviare la versione dell'editore/PDF

Visualizza tutte le policy disponibili su SHERPA ROMeO

⇒ Permessi Pre-print dell'autore

Può essere archiviata in:

Preprint Repository

Condizioni:

Published source must be acknowledged Must link to publisher version with DOI

OA fee: no

Permessi Post-print dell'autore

Può essere archiviata in:

Institutional Repository

Condizioni:

Published source must be acknowledged Must link to publisher version with DOI Post-prints are subject to Springer Nature re-use terms

Licenza: Publisher's Bespoke License

Embargo: 12 months

OA fee: no

Permessi Versione dell'editore

Può essere archiviata in:

Any Website, Institutional Repository

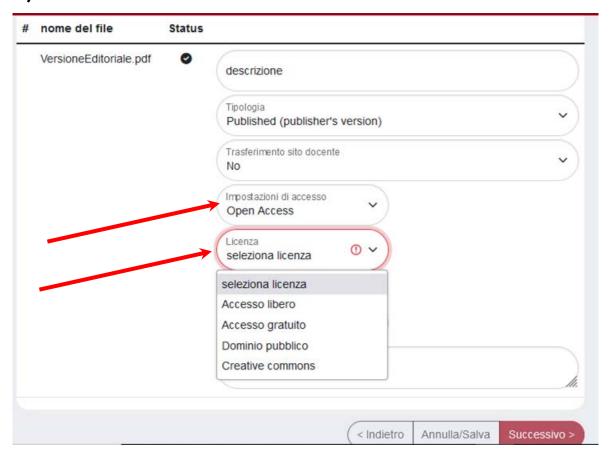
Licenza: CC BY OA fee: yes

Copyright:

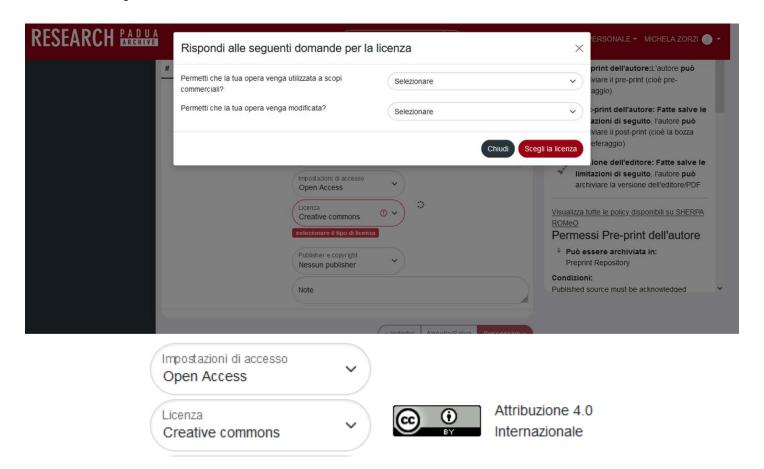
- Self-Archiving Policy
- · Accepted manuscript terms of use

L'editore prevede altre policy che possono consentire l'Open Access. Visualizza tutte le policy disponibili su SHERPA ROMeO per questa rivista.

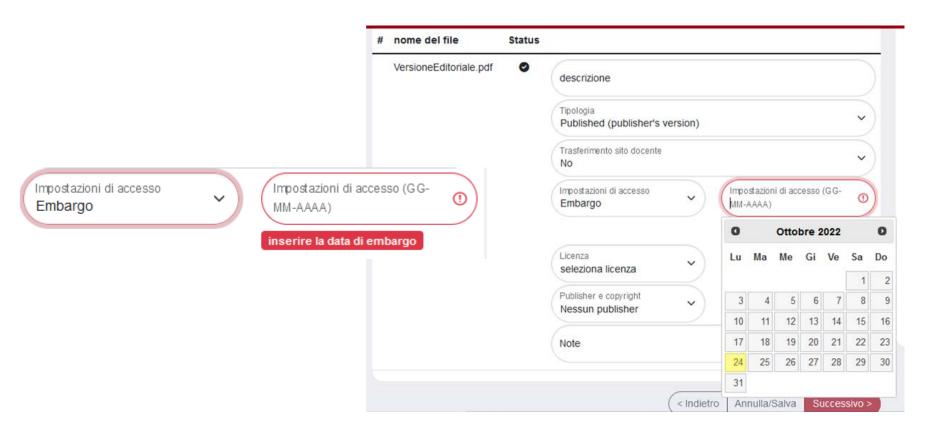
PRA (IRIS): licenses



PRA (IRIS): Open Access - Creative Commons Licenses



PRA (IRIS): Embargo > Deadline



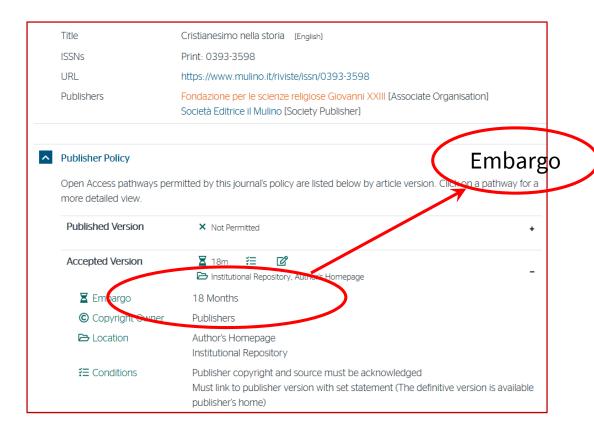
PRA (IRIS): embargo motivations

Motivations to apply an embargo

(From: <u>Regolamento</u> per l'Accesso Aperto alla produzione scientifica dell'Università di Padova, 4.2)

- 1. Refusal of the publisher, as explained in the Sherpa-Romeo database, or attestation made by the publisher
- 1. Documented refusal of one of the co-authors, if not belonging to the University
- 1. Reasons for public or national security
- 1. Reasons for privacy or presence of sensitive data
- 1. Protection of the University's economic rights
- 1. Industrial secret

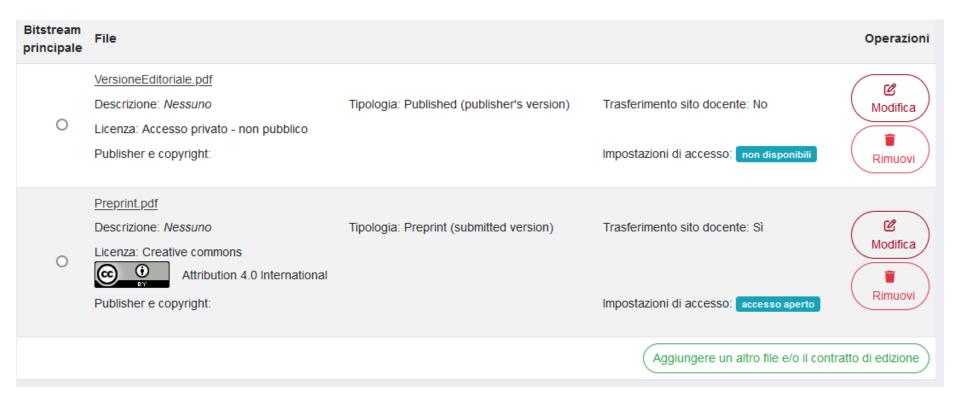
PRA (IRIS): Sherpa/Romeo to know embargoes' deadlines



PRA (IRIS): Adding more files



PRA (IRIS): Adding more files



PRA (IRIS): whom you should contact (and when)

Whom should you contact when uploading your documents in PRA/IRIS?

Whom should you contact for technical problems related to PRA/IRIS?

Whom should you contact when uploading documents in open access?



People charged by departments



Settore supporto informativo valutazione della ricerca e qualità -Ufficio ricerca e Qualità

coda: "Catalogo Padua Research Archive (IRIS)"



<u>Library System</u> Helpline

Tips on the management of research data

What are research data?

Recorded information (regardless of the form or the media in which they may exist) necessary to support or validate a research project's observations, findings or outputs











Digital texts or digital copies of text





BUT ALSO...

- Computer Aided Design (CAD)
- Waveforms
- Computer codes
- Statistics (SPSS, SAS)
- File Matlab
- Artistics products
- Web files
- ...







Databases

Data Types

Data Type	Value	Example
Observational data captured around the time of the event	Usually irreplaceable	Sensor readings, telemetry, survey results, neuro-images
Experimental data from lab equipment	Often reproducible but can be expensive	Gene sequence, chromatograms, toroid magnetic field readings
Simulation data generated from test models	Model and metadata (inputs) more important than output data. Large modules can take a lot of computer time to reproduce	Climate models, economic models
Derived or compiled data	Reproducible (but very expensive)	Text and data mining, compiled databases, 3D models

Data Costs



Data management costing tool

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Guides for Researchers

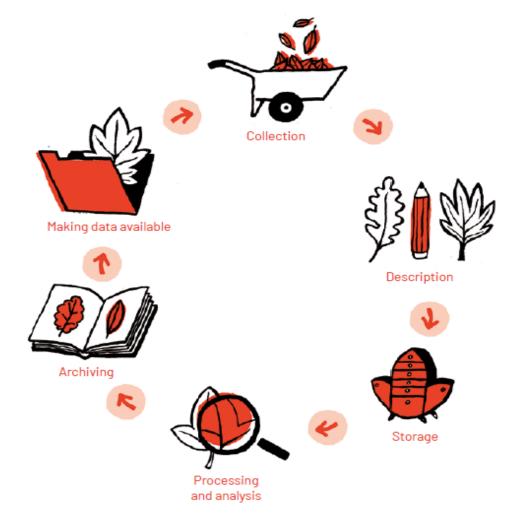
How to identify and assess Research Data Management (RDM) costs

Unless otherwise indicated, all materials created by OpenAIRE are licenced under CC ATTRIBUTION 4.0 INTERNATIONAL LICENSE

Research data lifecycle

From: Passport for Open Science – A
Practical Guide for PhD Students
Licensed under a CC BY-SA licence





Open Data

Open Data are online, free of cost, accessible data that can be used, reused and distributed, provided that the data source is attributed.

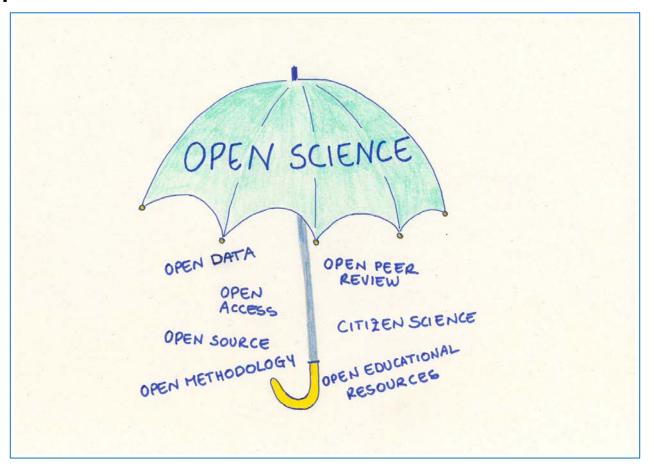


It is the philosophy of Open Access applied to data Data are open when **anyone can access, use and share**

Anyone means: academics, politicians, private citizens, economic stakeholders

Introduction to Open Science

"Open science is the movement to make scientific research, data and dissemination accessible to all levels of an inquiring society" FOSTER consortium



Funding programs requiring OA: European Union

COMMISSION RECOMMENDATION (EU)
2018/790 of 25 April 2018 on access to and preservation of scientific information

DIRECTIVE (EU) 2019/1024 OF THE
EUROPEAN PARLIAMENT AND OF THE
COUNCIL of 20 June 2019 on open data and
the re-use of public sector information

Horizon Europe Programme Guide

Managing research data: 7 steps



1. Collect research data



2. Name data rationally



3. Structure data in hierarchical systems





4. Annotate data trough metadata



5. Pay attention to file formats



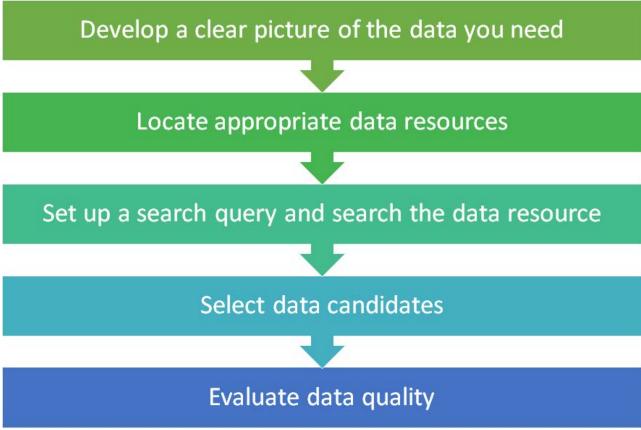
6. Organize dataset versions



7. Storage and preservation

First step: collect research data





Second step: file name strategy

A file name is a principal identifier of a file

- File name should help to identify the content of the file.
- Good file names provide useful clues to the status and version of a file, uniquely identify a file and help in classifying and sorting files

File naming strategy should be consistent in time and among different people

• In both quantitative and qualitative research file naming should be systematic and consistent across all files in the study

A group of cooperating researchers should follow the same file naming strategy.

Modello_Autodichiarazione.pdf

Modello_AutodichiarazioneDEF.pdf

Modello_AutodichiarazioneDEFfinale.pdf

Modello_AutodichiarazioneDEFfinaleULTIMO.pdf

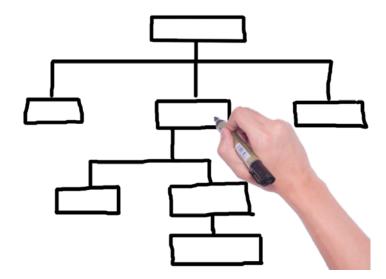
Modello AutodichiarazioneDEFfinaleULTIMO2.pdf

Modello AutodichiarazioneDEFfinaleULTIMO2DEF.pdf

Third step: structure research data

Structuring your data files in folders is important for making it easier to locate and organize files and versions.

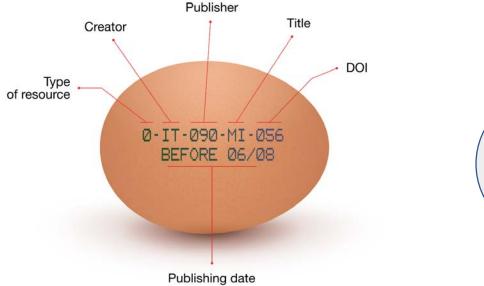
The decision on how to organize your data files depends on the plan and organization of the study. All material relevant to the data should be entered into the data folders, including detailed information on the data collection and data processing procedures.



Fourth step: annotate using metadata

Metadata means "data about data".

It is defined as the data providing information about one or more aspects of the data and it is used to summarize basic information about data, which can make easier to track and work with specific data.



Examples of metadata standards

Fifth step: file formats

When preparing to collect research data, you should chose **open**, **well-documented** and **non-proprietary formats** wherever possible.

The choice of format will vary depending on how you plan to analyze, store and share your data.

It is advisable to store your data for use in future, which means to convert them from a current data format to a long-term preservation format. Most software applications offer export or exchange formats that allow a text-formatted file to be created for importing into another program.



Open data: a five-stars rating system

OL (On Line) open license

OF (Open Format)
URL (Uniform Resource Identifier)
LD (Linked Data)

- available on the web + distributed with an RE (Readable)
- • machine-readable structured data
 - ••• encoded with non-proprietary software
- •••• identified by an URL
 - ••••• linked to other data sets

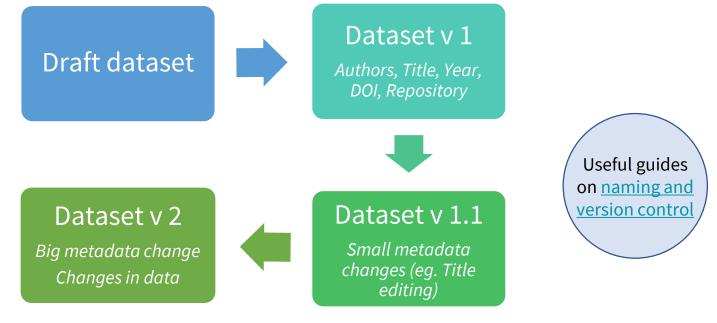
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Sixth step: organize data in dataset versions

Versioning is important for long-term research data management where metadata and/or files are updated over time.

It is used to track any metadata or file changes (e.g., by uploading a new file, changing files structure, adding or editing file metadata...) once a dataset has been published.

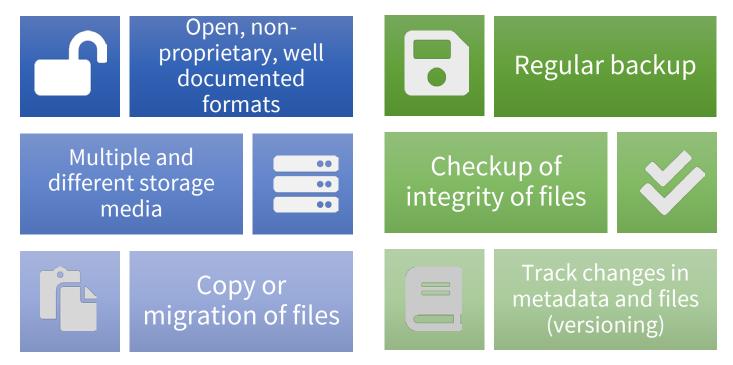


http://guides.dataverse.org/en/latest/user/dataset-management.html

Seventh step: storage and preservation

Data storage in safe archives adhering to relevant standards.

Preservation actions should ensure that data remains authentic, reliable and usable while maintaining its integrity



Checklist for <u>storage</u> and <u>preservation</u>

General Data Protection Regulation

Since 25 May 2018, the <u>General Data Protection Regulation</u> (GDPR, European Union, 2016) applies to any EU researcher who collects <u>personal data of living persons</u>.

So, when processing personal data, researchers should adhere to the following six principles:

I. Process lawfully, fair and transparent

II. Keep to the original purpose

III. Minimise data size

IV. Personal data should be accurate and, where necessary kept up to date

V. Remove data which are not used

VI. Ensure data integrity and confidentiality

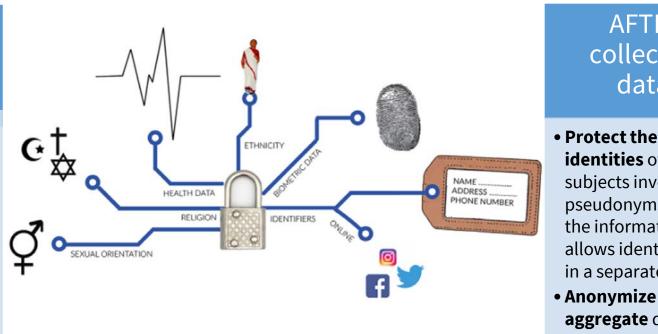
The so-called "research exemption" means that principles 2 and 5 are less stringent when applied to data collected for research projects, public interest, statistical purposes

Privacy and personal data

Works containing sensitive data relating to identifiable persons must not be disseminated in Open Access!

BEFORE collecting data:

- Carry out a risk assessment
- Choose which data to collect + follow the minimization principle
- Prepare an informed consent document (information about the research, the subjects involved, the way data is going to be shared and stored)



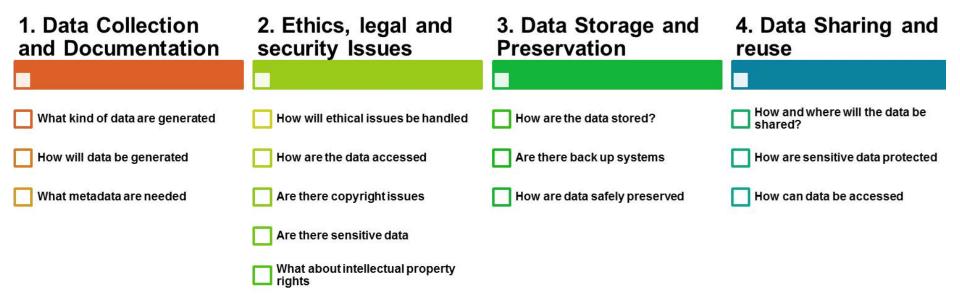
GDPR (General Data Protection Regulation)

Information on research integrity and research ethics

AFTER collecting data:

- identities of the subjects involved (e.g. pseudonyms; keeping the information that allows identification in a separate archive)
- Anonymize + aggregate data
- Regulate access

DMP = Data Management Plan

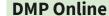


DMP: Guidelines & tools



DCC = Digital Curation Centre

• https://www.dcc.ac.uk/dmponline



DMP templates according to funders' specific requirements

 https://dmponline.dcc.ac.uk/public _templates





Data Stewardship Wizard

DMP which can be exported using selected template and format, including machine-actionable ones

https://ds-wizard.org/

Science Europe

Research Data Management Guidance and Templates for DMPs

 https://scienceeurope.org/ourpriorities/research-data/researchdata-management





Horizon Europe

Funding & tender opportunities > Project reporting templates > Data management plan (HE)

 https://ec.europa.eu/info/fundingtenders/opportunities/portal/screen/h ow-to-participate/referencedocuments:programCode=HORIZON

Tools for researchers

UniPD Ufficio Ricerca Internazionale: strumenti per la progettazione e il proposal writing (with SSO)

 https://elearning.unipd.it/ufficiserv iziapplicazioni/course/view.php?id =112



DMP: two examples

CESSDA (Consortium of **European Social Science** Data Archives)

Link to pdf version here

Link to editable version in this page

DCC (Data Curation Centre) Link to DMP Checklist here

Organising and documenting your data

Data collection

- now will the data be conected?
 Is specific software or hardware or staff required? 15 specific sortware or nargware or staff require
 Who will be responsible for the data collection? Who will be responsible for the data collection:
 During which period will the data be collected?
- Where will the data be collected?

 How will you organise your data?
 Will the data be organised in simple files or more complex databases?

 Wall the data be organised in simple files or more complex databases? Le use winders, text, photos), is it possible

- How will the data quality d
- If data consists of many d structure the data in a log

- Data type and size What type(s) of data will • What is the scope, qua
- After the project: What

Versioning

If applicable:

. What is your strategy concerning versioning your data files (and scripts) during the

Processing your data

- Will you create and/or follow a convention for versioning your data?
- Who will be responsible for securing that a "Masterfile" will be maintained, documen and versioned according to the project guidelines?
- How can different versions of a data file be distinguished?

File format

- In what format will) Does the format cha Will your (final) data

Folder structure . How will you struc

File structure ar

· How will you stri

Documentation What document

- . How will data quality I · What data quality con Metadata
- How will metadata for each

Data Quality

- Is there any program that can be uses • Can metadata be added directly into th-
- program or document?

Metadata standard (if applicable) • What metadata standard(s) will you use?

Interoperability

 Will you make use of establ and hardware you use relate

· Will you make use of est vocabularies) in the pro-

Which coding is used (if how does your coding r

and hardware? If not, how does the softw

Storing your data and metadata Storage

How and where will the (meta)data be stored during the project? • For how long will the (meta)data be stored?

- How, where and at what intervals will the (meta)data be backed-up? How will data be recovered in the case of a (meta)data loss incident?

- How will sensitive (meta)data be protected? (if applicable)

Research Data Unipd

Trustworthy Digital Repositories (TDRs)

Principle	Guidance for repositories	
Transparency	To be transparent about specific repository services and data holdings that are verifiable by publicly accessible evidence.	
Responsibility	To be responsible for ensuring the authenticity and integrity of data holdings and for the reliability and persistence of its service.	
U ser Focus	To ensure that the data management norms and expectations of target user communities are met.	
S ustainability	To sustain services and preserve data holdings for the long-term.	
T echnology	To provide infrastructure and capabilities to support secure, persistent, and reliable services.	

in: Lin, D., Crabtree, J., Dillo, I. *et al.* The TRUST Principles for digital repositories. *Sci Data* 7, 144 (2020). https://doi.org/10.1038/s41597-020-0486-7

see also: https://www.coar-repositories.org/coar-community-framework-for-good-practices-in-repositories/

and:

https://eua.eu/downloads/publications/2021%20oa%20checklist%20final.pdf



HOME **BROWSE**

HOWTO

ABOUT

≜ LOG IN

Search.

SEARCH

Research Data Unipd is a research data archive. The service aims to facilitate data discovery, data sharing, and reuse as required by funding institutions (e.g. European Commission).

Anyone has access to data. The deposit of datasets is reserved to institutional users: they can log in with their Single Sign-On (SSO) credentials.

The University of Padua recognises the importance of data management for maintaining the quality of scientific research and is committed to applying the highest standards for their collection, archiving and preservation, as stated in the University of Padua Policy on the Management of Research Data.

For more information on Research Data Management and Repositories, please refer to the Open Research Data section on the University Library System website, or contact the Library Helpline.

Search.

Latest Additions >

View items added to the repository in the past 90 days.

Browse Repository >

Browse the items in the repository by Year, Subject, Department and Author.

Search Repository >

Search the repository using a full range of fields. Use the search field at the top of the page for a quick search.

Research Data Unipd supports OAI 2.0 with a base URL of https://researchdata.cab.unipd.it/cgi/oai2

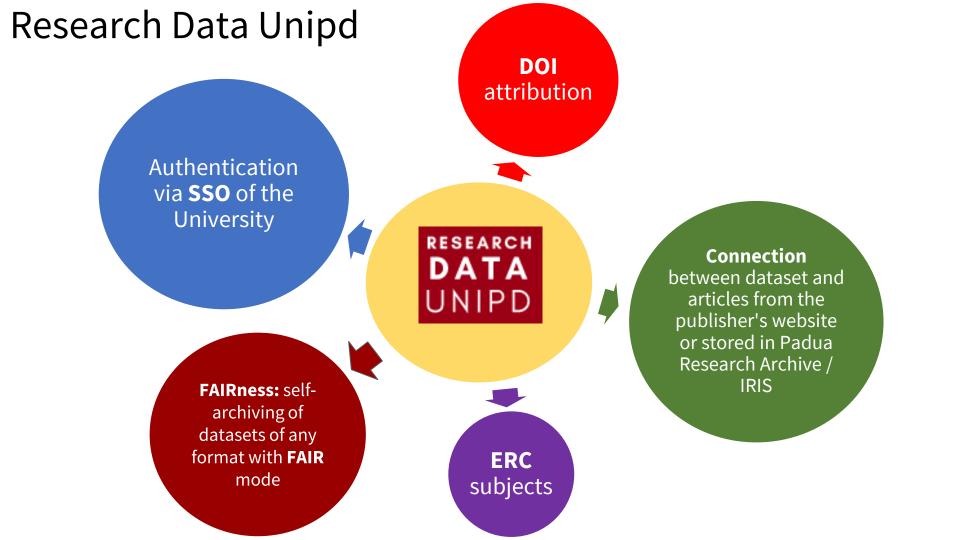




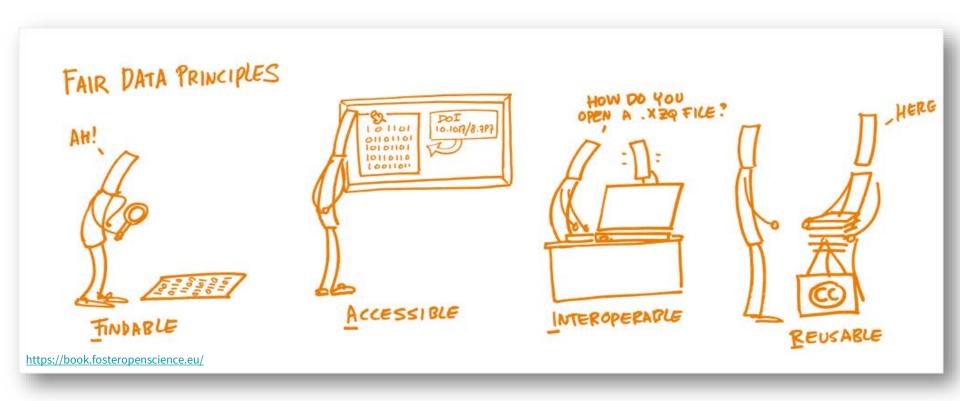


openDOAR





FAIR principles



FAIR principles

Findable

Rich metadata Persistent identifiers

Reusable

Usage licenses Info on provenance

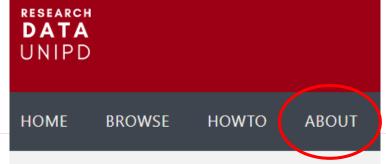
Accessible

Metadata always available Open, standard protocols Documented formats

Interoperable

Standard vocabularies Linked metadata

https://www.fairsfair.eu/



About the Repository

Research Data Unipd supports research produced by members of the University of Padua. The service aims to facilitate data discovery, data sharing, and reuse as required by funding institutions (e.g. European Commission).

According to the <u>University of Padua Policy on the Management of Research Data</u>, data must be stored in a correct, complete and reliable way, respecting their integrity. They must also be accessible, identifiable, traceable, interoperable and, where possible, available for subsequent use as stated in the <u>FAIR principles</u>.

Quality

Datasets published in the Archive have a set of metadata that ensure that data are described and discoverable. Before publication, dataset records are checked by Editors for the presence of appropriate metadata.

Metadata Policy

All published metadata are released under a <u>CCO licence</u>.

Re-using data

We encourage researchers to use licences on their datasets to promote the reuse of the research data. The licence to be preferred is <u>Creative Commons Attribution 4.0</u>, but several others are used. Any re-use must acknowledge the Creators in an appropriate manner, ideally through a citation similar to that provided with the record.

Recommended formats and data files

Formats and data files

Submission policy

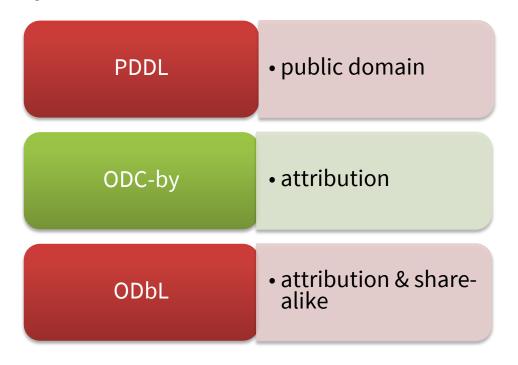
Submission policy concerning depositors, quality & copyright

Data deposit agreement

Agreement to terms and conditions

Licenses on Data

Open Data Commons Licenses



https://opendatacommons.org/index.html

Data deposit agreement

When you deposit data in the Research Data Unipd Archive, you must agree to the conditions below. This is done by clicking the "Deposit" button in the archive, before depositing the item.

This agreement confirms that you, the depositor, have the right to submit the dataset to the repository.

This agreement ensures that the archive administrators have the right to carry out activities necessary to facilitate the long-term preservation and sharing of datasets.

By submitting your dataset for a deposit, you grant a non-exclusive licence to the University of Padua to archive, publish and disseminate any material within the dataset. The licence is non-exclusive and therefore does not prevent you from exercising any rights you might have to publish and distribute any of the datasets, in its present or future versions, elsewhere.

Retractions

Retraction of articles due to lack of data, citations and methodologies are increasing.

The inability to access to data and methods prevents from reproducing experiments and validate results.

Scientific publications of affiliated authors in Italy retracted due to fraud. Review and analysis 🛮

Gonzalo Marco-Cuenca, José Antonio Salvador-Oliván, Rosario Arquero-Avilés, Chiara Faggiolani, Brenda Siso-Calvo

Abstract

The purpose of this study is to review the publications retracted due to fraud written by authors with affiliation in Italy in the period 2000-2020. For the identification of retracted publications, Retraction Watch Database has been used and Web of Science and Pubmed databases have been used for their verification and review. A total of 112 retractions were obtained due to fraud related the criteria defined in the methodology. The results obtained establish that the main cause of retraction due to scientific misconduct has been

Author asks to retract nearly 20year old paper over figure questions, lack of data

The last author of a 1999 paper has asked the journal to retract it less than one month after a user raised questions about images on PubPeer.

Yesterday, last author Jim Woodgett posted a note on the site saying the author who generated the figures in question could not find the original data, and since he agreed the images appeared "suspicious," he had contacted the journal to retract the paper.

Here's the note from Woodgett, based at Lunenfeld-Tanenbaum Research Institute at Mount Sinai Hospital in Toronto:

...the person who generated the original data cannot source it and, as a consequence, a request to retract this paper based on the discrepancies in figure 5B and C has been submitted and approved.

The PubPeer exchange is over a pair of figures in the 1999 paper, "Regulation of the protein kinase activity of Shaggy(Zeste-white3) by components of the wingless pathway in Drosophila cells and embryos," which has been cited 77 times, according to Thomson Reuters Web of Science. ients 77.68% of the retractions reviewed. 20.54% of retractions are associated with data and L79% with both causes. There is an average of 5.6 articles retracted per year in the period analyzed. The tracted works are research articles in the area of Life Sciences and Biomedicine. It is noteworthy that 37% of be cited after their retraction.



JLIS: https://www.jlis.it/article/view/12711

Rete Italiana Open Science: https://www.facebook.com/groups/172297443522463/



Steps dominate gas evasion from a mountain headwater stream

Botter, Gianluca and Carozzani, Anna and Peruzzo, Paolo and Durighetto, Nicola (2022) Steps dominate gas evasion from a mountain headwater stream. [Data Collection]

- Related publications
- https://doi.org/10.21203/rs.3.rs-1558447... (Organisation)
- cations https://www.nature.com/articles/s41467-0... (Publisher)

Data & article reported findings

nature communications



Article

https://doi.org/10.1038/s41467-022-35552-3

Steps dominate gas evasion from a mountain headwater stream

Received: 14 April 2022

Gianluca Botter [®] ¹ □, Anna Carozzani¹, Paolo Peruzzo [®] ¹ & Nicola Durighetto ¹

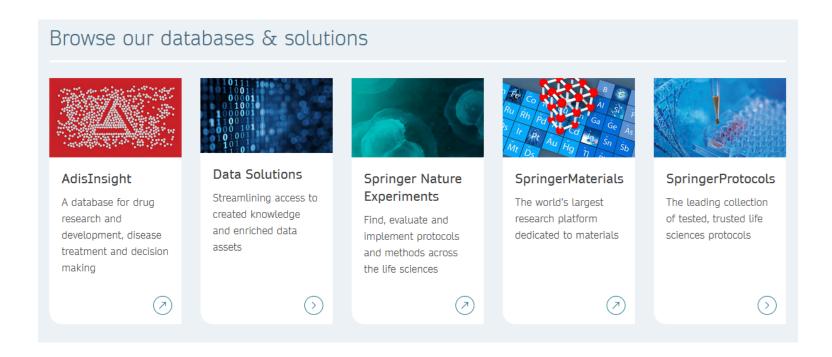
Accepted: 9 December 2022
Published online: 17 December 2022

Steps are dominant morphologic traits of high-energy streams, where climatically and biogeochemically relevant gases are processed transported to

Data availability

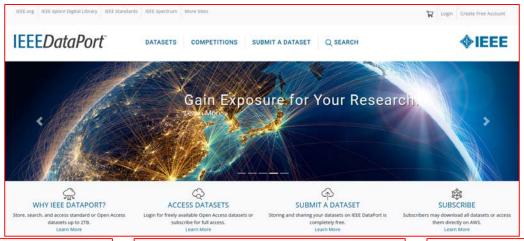
The data that support the findings of this study are openly available in Botter et al. 2022⁶¹ at http://researchdata.cab.unipd.it/id/eprint/619, reference number 619.

Additional services offered by publishers

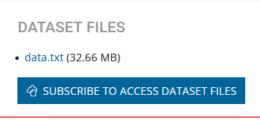


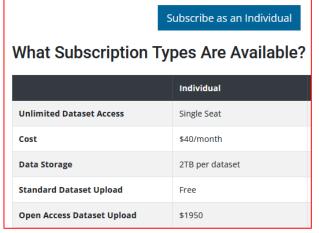
Databases & research solutions > Data Solutions > <u>Text and Data Mining at Springer</u>
Nature

Additional services offered by publishers (at a cost!)









Open methodology

= the use of open methodologies throughout the entire research cycle, making it open and available to everyone online at the very moment the research is conducted.

Open Notebooks

- https://openlabnotebooks.org
- https://theopennotebook.com/
- OpenLab/Notebook % Foster
- Code Ocean
- Protocols.io



Foto di Ann H da Pexels

To sum up ... why is it important to manage research data [properly] and make them **OPEN**?



To allow the continuity of research through the use of secondary data



To increase the efficiency of research

To ensure compliance with the requirements set by funders



To support the contents of a paper and improve the peer-review





To guarantee the integrity of research and the validation of the results



To ensure greater dissemination and greater impact

Supporting authors

Science research data: manuals & tools



<u>The Open Access Scholarly Publishers Association (OASPA)</u> is a non-profit trade association representing the interests of open access journal publishers globally in all scientific, technical and scholarly disciplines.

"S-LÉGAMI!"

<u>"S-légami! Open Access – Manuale d'uso per ricercatori"</u> is a freely available manual that was born in the <u>APRE</u> Working Group dedicated to Open Science and contains the answers to the most frequent questions and concerns of researchers on open access and open data.



<u>OpenAIRE</u> is a pan-European research information system, which provides services for finding, storing, linking and analysing research results from all disciplines. Its mission is to move academic communication towards openness and transparency and to facilitate innovative ways to communicate and monitor research.

Library System support services



About publishing



In the section "About publishing" of the Library System web portal, researchers will find information on Open Access, on publishing, and on the management of data.

Library System support services

Authors can submit specific requests using the Library System Help Service, choosing the address:

- Supporto alla pubblicazione accademica
- Consulenza tematiche diritto d'autore
- Supporto Open Science (Open Access, Open Data)

Engineering libraries contacts:

biblio.inge@unipd.it





Engineering Libraries OA Support Group of the UniPd Library System



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