



# Bibliometrics and academic publishing

PhD Course in Statistics  
Library Labs: Module III  
December 10 2020



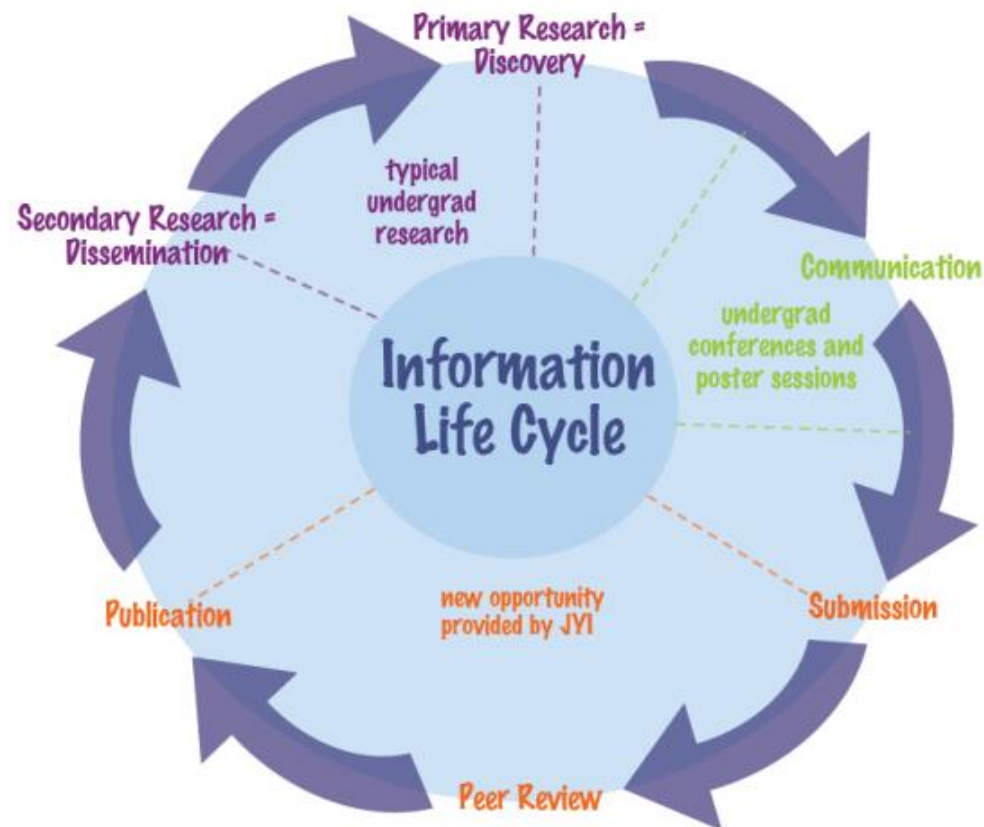


## What we will see today:

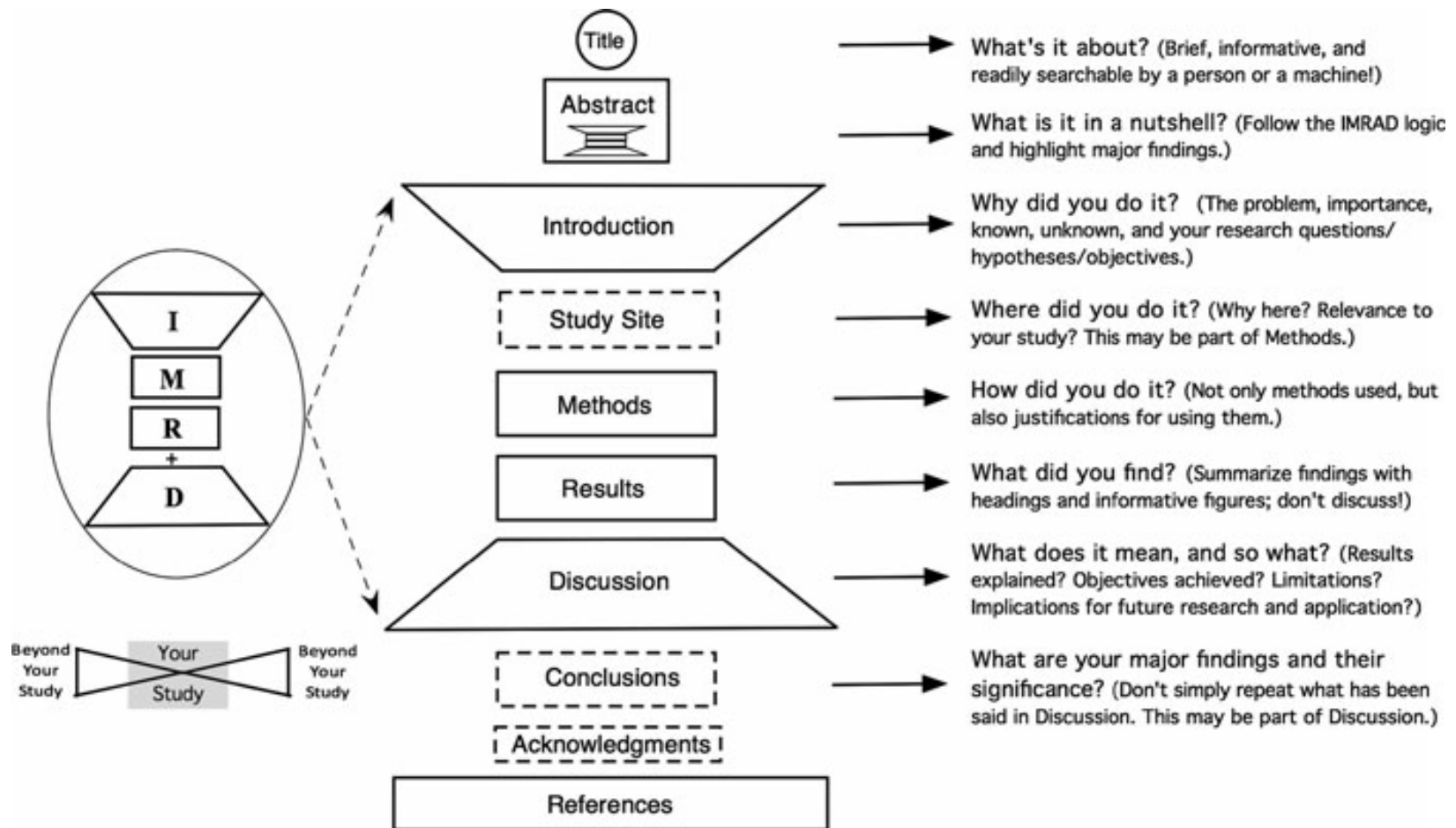
- **Scholarly Communication:** traditional academic publishing and Open Access
- **Bibliometrics:** traditional and innovative tools for scientific evaluation

# Scientific communication

» the process of publication and dissemination of research findings



# Scientific writing: structure of a scientific paper





# Scientific journals

## STM (Scientific, Technical and Medical) Journals

### Journal or Serial

=

publication that appears in intervals of time longer than 24 hours

- Addressed to the scientific community (expert audience)
- With selected contents
- Referee system

In STM field it is imperative to publish research as soon as possible, so journals are the main way to **quickly disseminate information**

# The Traditional Academic publishing model

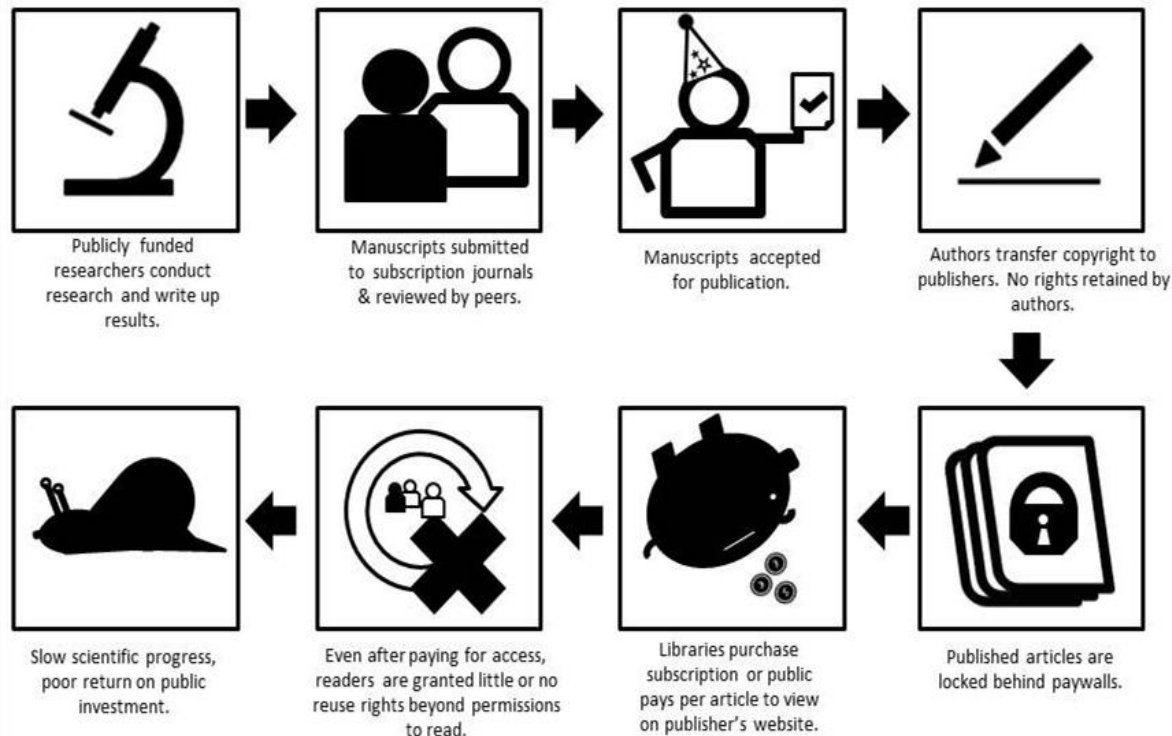


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*limited dissemination, economic efficiency & social impact*



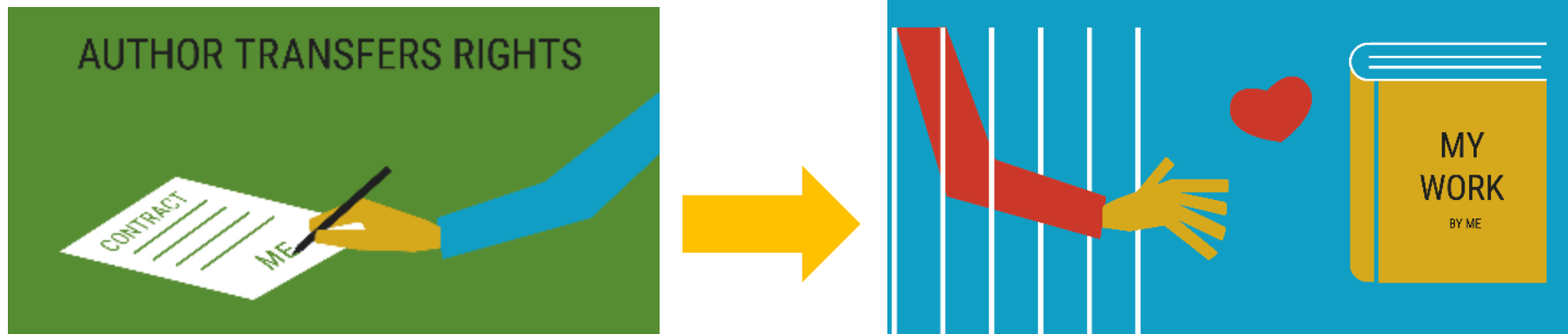
Model and text adapted from Timothy Vollmer and Teresa Sempere García "Research article cycles"  
[http://wiki.creativecommons.org/File:Research\\_article\\_cycles.jpg](http://wiki.creativecommons.org/File:Research_article_cycles.jpg)



Paula Callan & Sarah Brown, QUT 2014 CC-BY 4.0

**The traditional business model of academic publishers is to archive and disseminate works** whose authors have transferred **exclusive publication rights to the publisher**.  
The revenue of publishers is based upon providing **paid access** to the papers.

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  
comprises ...

- **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  
comprises mainly  
...

**Copyright  
/ author's  
rights**



# Italian context into the European law framework



- 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"

# Italian context into the European law framework



## International Conventions

- Berne Convention for the Protection of Literary and Artistic Works
- TRIPS Agreement
- [Directive \(EU\) 2019/520 of 19 March 2019](#) (Copyright in the Digital Single Market)  
Member States shall transpose the Directive by 24 months.

# Authorship VS Ownership



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~~NON-TRANSFERABLE~~

Moral  
Rights

**Authorship** is a moral right  
(paternity):  
it can't be transferred, bought or  
sold.

**Exploitation** is an economic  
right:  
it can be transferred, bought or  
sold.

~~TRANSFERABLE~~

Economic  
Rights



# Focus on...

## Copyrights on doctoral thesis



**Be careful: your PhD thesis is public!**



# "Digital" editorial model

The Web allows new kinds of documents, technologies and editorial policies: e-books, e-journals, databases, full text, Open Access ...

## THAT MEANS

- for authors: self-publishing and cooperative text sharing, more dynamic revision process, self-archiving (especially in OA)
- for publishers: reduction of printing and distribution costs
- for readers: easily available documents, interoperability and content reuse

# OPEN ACCESS

Without costs  
for the reader

Accessible

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



It is a type of (open) access to digital contents

Any type of digital content can be openly accessible

OA particularly refers to academic, technical and scientific content

It is NOT a business model, a type of license or content!

There are several [editorial models](#) and licenses compatible with OA, in constant evolution

# Copyright and Creative Commons

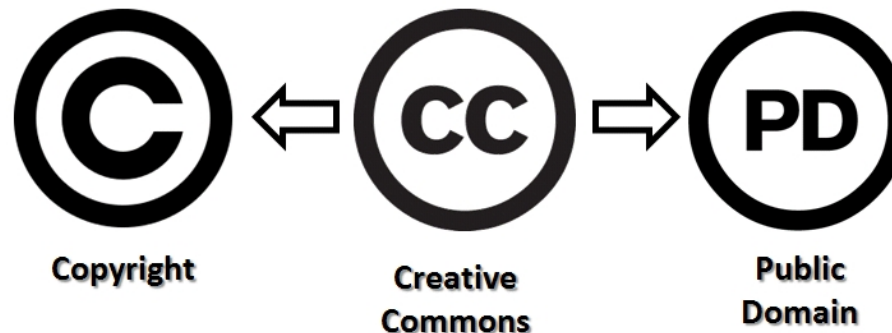


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For researchers and authors a wide variety of publishing models are emerging that do not follow the traditional academic pattern of outright assignment of copyright to publishers or data owner...





## CREATIVE COMMONS LICENSES

		COPY & PUBLISH	ATTRIBUTION REQUIRED	COMMERCIAL USE	MODIFY & ADAPT	CHANGE LICENSE
PUBLIC DOMAIN		✓	✗	✓	✓	✓
CC BY		✓	✓	✓	✓	✓
CC BY-SA		✓	✓	✓	✓	✗
CC BY-ND		✓	✓	✓	✗	✓
CC BY-NC		✓	✓	✗	✓	✓
CC BY-NC-SA		✓	✓	✗	✓	✗
CC BY-NC-ND		✓	✓	✗	✗	✓



You can redistribute  
(copy, publish, display,  
communicate, etc.)



You have to attribute  
the original work



You can use the work  
commercially



You can modify and  
adapt the original work



You can choose license  
type for your adaptations  
of the work.



## Which are the benefits?

Nowadays, it is widely recognized that **making research results more accessible contributes to better and more efficient science, and to innovation in the public and private sectors.**

*European Commission, Horizon2020*

<https://ec.europa.eu/programmes/horizon2020/en/h2020-section/open-science-open-access>

# Which are the benefits?



# European recommendations



- [COMMISSION RECOMMENDATION of 17 July 2012 on access to and preservation of scientific information \(2012/417/EN\)](#)



- [Towards better access to scientific information: Boosting the benefits of public investments in research](#)



- [COMMISSION RECOMMENDATION \(EU\) 2018/790 of 25 April 2018 on access to and preservation of scientific information](#)

# When publishing in Open Access is mandatory



- projects funded with public funds (Horizon 2020, Marie Curie, ERC)
- projects funded by private foundations or entities (e.g. Bill & Melinda Gates Foundation or Wikimedia Foundation)
- projects funded by institutions or research networks that adhere to [Plan S](#)

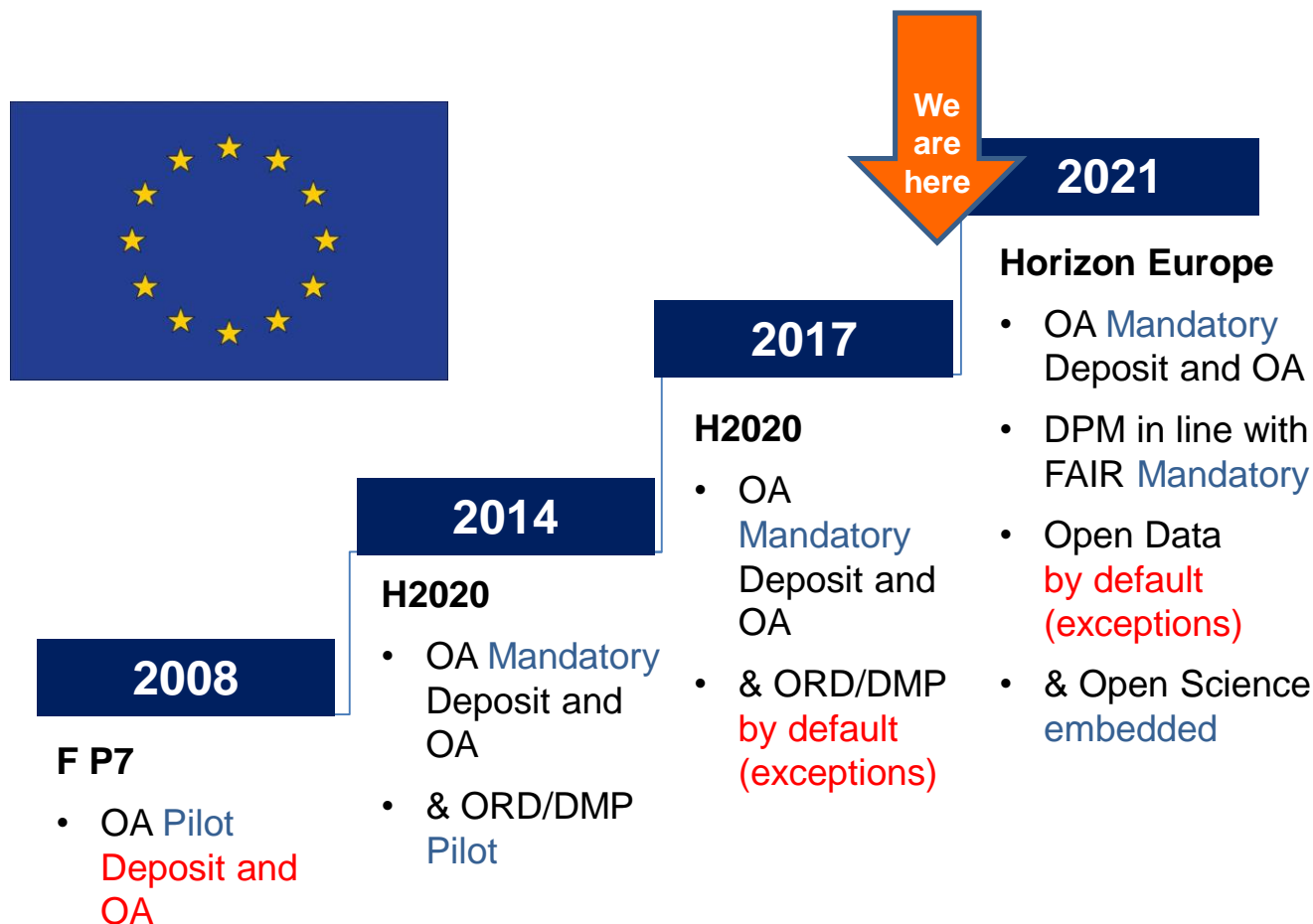
# Funding programs



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# Plan S



## Plan S

Access to research publications that are generated through funded grants must be fully and immediately open

The plan is structured in ten principles:

<https://www.coalition-s.org/10-principles>

- immediate publication, without embargo, in Open Access journals / archives;
- authors retain copyright;
- publication fees aren't covered by individual researchers;
- commitment to create OA journals and platforms;
- limit to APC costs;
- no financing for publication in journals with double dipping.



Plan S

Making full and immediate Open Access a reality

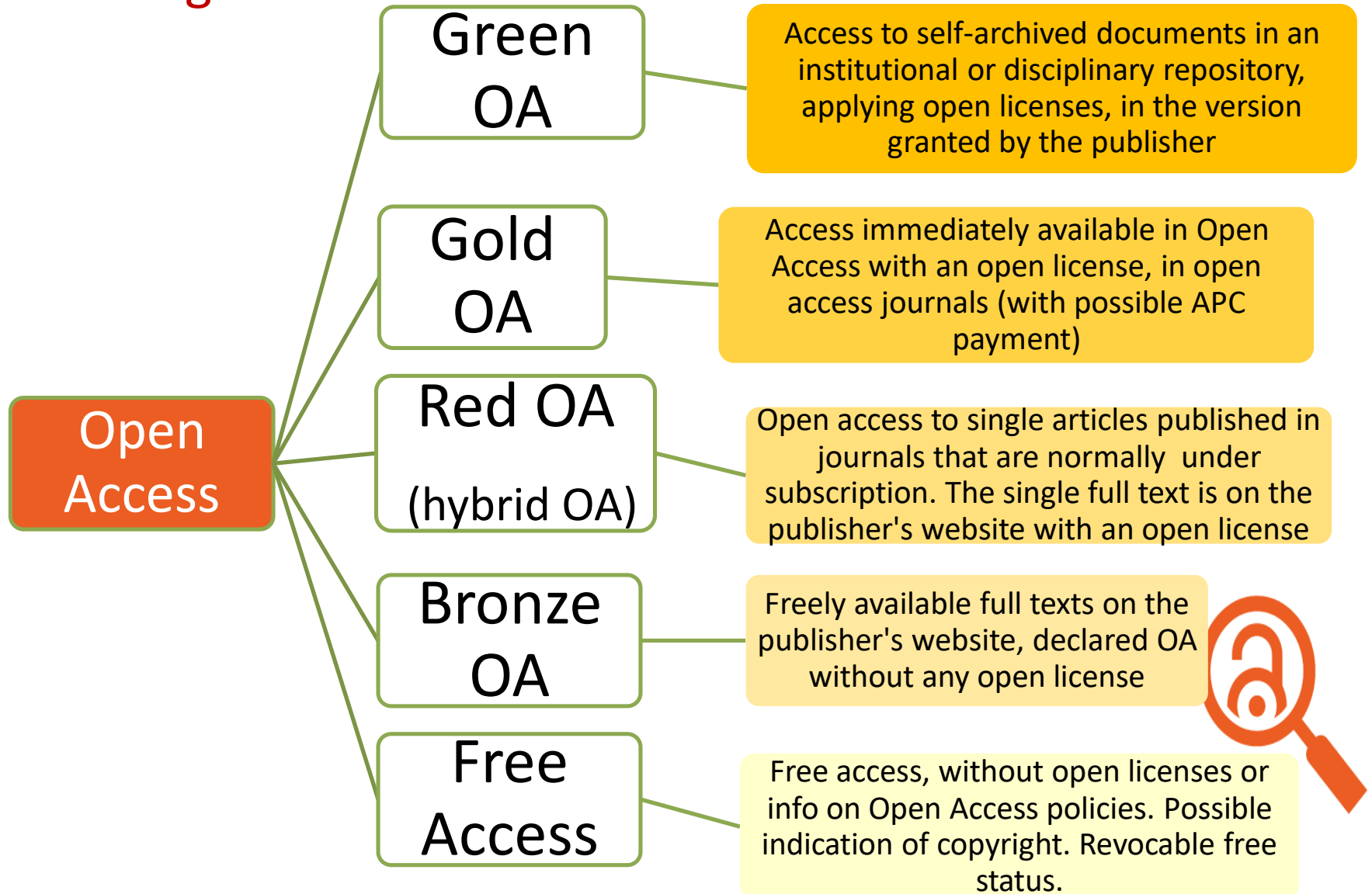
# Open Access and academic publishing models



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# Process of publication of a scientific paper

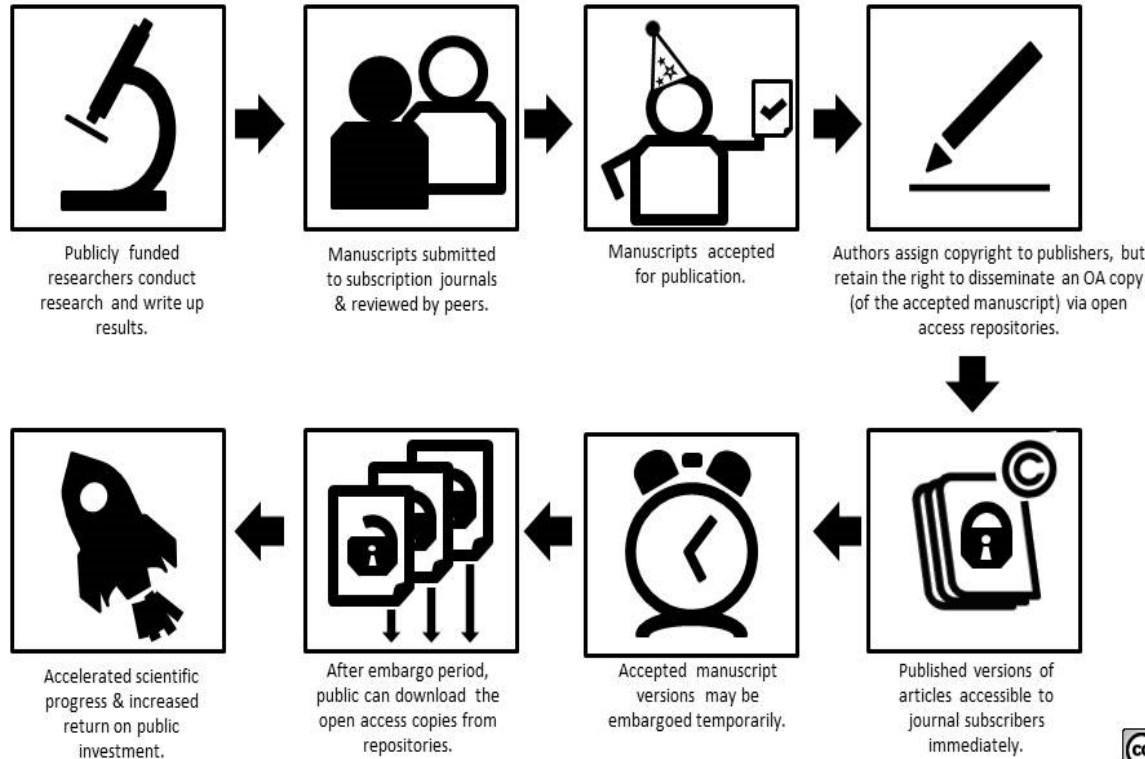


<https://aoasg.files.wordpress.com/2013/12/hefce-publishing.jpg>

# The green road

## GREEN OPEN ACCESS

*increased dissemination, economic efficiency & social impact*



Model and text adapted from Timothy Vollmer and Teresa Sempere Garcia "Research article cycles"  
[http://wiki.creativecommons.org/File:Research\\_article\\_cycles.jpg](http://wiki.creativecommons.org/File:Research_article_cycles.jpg)



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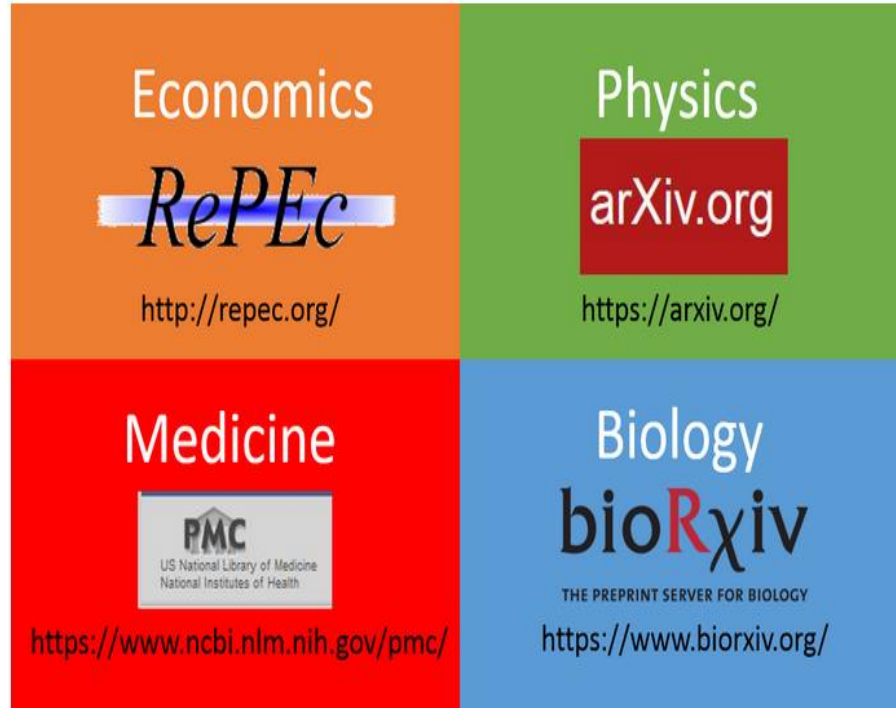
**SELF-  
ARCHIVING**

**IN**

**OPEN  
INSTITUTIONAL OR  
DISCIPLINARY  
ARCHIVES**

# Open archives

## disciplinary repositories



## interdisciplinary repositories



# Institutional Repositories vs. Academia.edu or ResearchGate



[A social networking site is not an open access repository](#)

Often researchers submit their products in Social Networks of  
Research without taking care of publishers' policies:

are they really aware of the medium they are using and the rights  
related to published outputs?

# Institutional Repositories vs. Academia.edu or ResearchGate



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R<sup>G</sup>

A

	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



<http://creativecommons.org/licenses/by/4.0/> University of California OSC

<http://osc.universityofcalifornia.edu/2015/12/a-social-networking-site-is-not-an-open-access-repository>

# The gold road



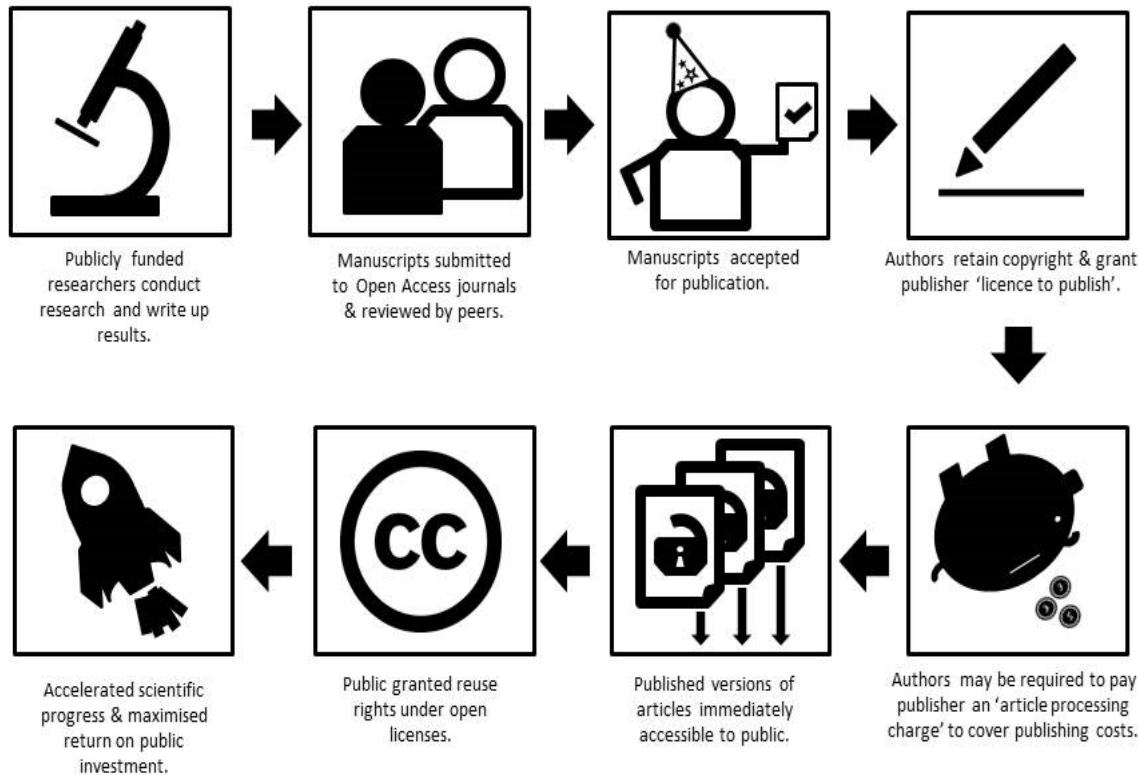
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## GOLD OPEN ACCESS

*maximised dissemination, economic efficiency & social impact*



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[http://wiki.creativecommons.org/File:Research\\_articles\\_cycles.jpg](http://wiki.creativecommons.org/File:Research_articles_cycles.jpg)



Paula Callan & Sarah Brown, QUT 2014 CC-BY 4.0

**PUBLISHING IN OA  
JOURNALS**

**POSSIBLE ARTICLE  
PROCESSING  
CHARGES (APC)**



# The publishing models of Open Access: green and gold

## WILEY

<https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/index.html>

**Springer**

Search

Home Subjects Services Springer Shop About us

Author & reviewer tutorials

**Open Access**

- » What is Open Access?
- » Benefits of Gold Open Access
- » Article Processing Charges
- » Copyright and license
- » Mandates and funding
- » OA vs. subscription journals
- » Quiz
- » Further information

### What is Open Access?

At it's most fundamental Open Access is when publications are freely available online to all at no cost and with limited restrictions with regards reuse. The unrestricted distribution of research is especially important for **authors** (as their work gets seen by more people), **readers** (as they can access and build on the most recent work in the field) and **funders** (as the work they fund has broader impact by being able to reach a wider audience).

There are two routes to open access:

**Gold open access.** Gold OA makes the final version of an article freely and permanently accessible for everyone, immediately after publication. Copyright for the article is retained by the authors and most of the permission barriers are removed. Gold OA articles can be published either in fully OA journals (where all the content is published OA) or hybrid journals (a subscription-based journal that offers an OA option which authors can chose if they wish). An overview of fully OA journals can be found in the [Directory of Open Access Journals \(DOAJ\)](#).

*TIP: just because a journal offers free access to content this does not mean it is Open Access. As described above Gold OA also allows the re-use of the work as long as the authors are acknowledged and cited as they retain the copyright. Simply allowing everyone with an internet connection to read the content does not constitute gold OA.*

**Green open access.** Green OA, also referred to as self-archiving, is the practice of placing a version of an author's manuscript into a repository, making it freely accessible for everyone. The version that can be deposited into a repository is dependent on the funder or publisher. Unlike Gold OA the copyright for these articles usually sits with the publisher of, or the society affiliated with, the title and there are restrictions as to how the work can be reused. There are individual self-archiving policies by journal or publisher that determine the terms and conditions e.g. which article version may be used and when the article can be made openly accessible in the repository (also called an embargo period). A list of publishers' self-archiving policies can be found on the [SHERPA/ReMeO](#) database.

## SPRINGER

<https://www.springer.com/gp/authors-editors/authorandreviewertutorials/open-access/what-is-open-access/10286522>

Gold Open Access	Green Open Access
<b>What is it?</b> <p>The author pays an Article Publication Charge and the article is immediately freely available online for all to read, download, and share</p>	<b>What is it?</b> <p>The author self-archives a version of the subscription article in an online repository or website</p>
<b>Options</b> <p>Wiley offers two ways to publish gold open access, authors may publish in a:</p> <ol style="list-style-type: none"> <li>1. <b>Fully open access journal</b> - journals where every article is published open access</li> <li>2. <b>Subscription journal offering OnlineOpen</b> - an open access option that most Wiley journals offer</li> </ol>	<b>Options</b> <p>Self-archiving requirements vary depending on the article version being archived. Authors may archive the:</p> <ol style="list-style-type: none"> <li>1. Submitted version on acceptance</li> <li>2. Accepted version with a 12-24 month embargo - embargo period varies by journal (Use our <a href="#">Author Compliance Tool</a> to check)</li> </ol>
<b>License</b> <p><a href="#">Open Access Agreement</a> with a Creative Commons license</p>	<b>License</b> <p><a href="#">Standard CTA or ELA</a></p>
<b>Charge</b> <p>Article Publication Charge - amount varies by journal (Visit our <a href="#">Article Publication Charge</a> page to learn more)</p>	<b>Charge</b> <p>No charge</p>
<a href="#">Learn more</a>	<a href="#">Learn more</a>



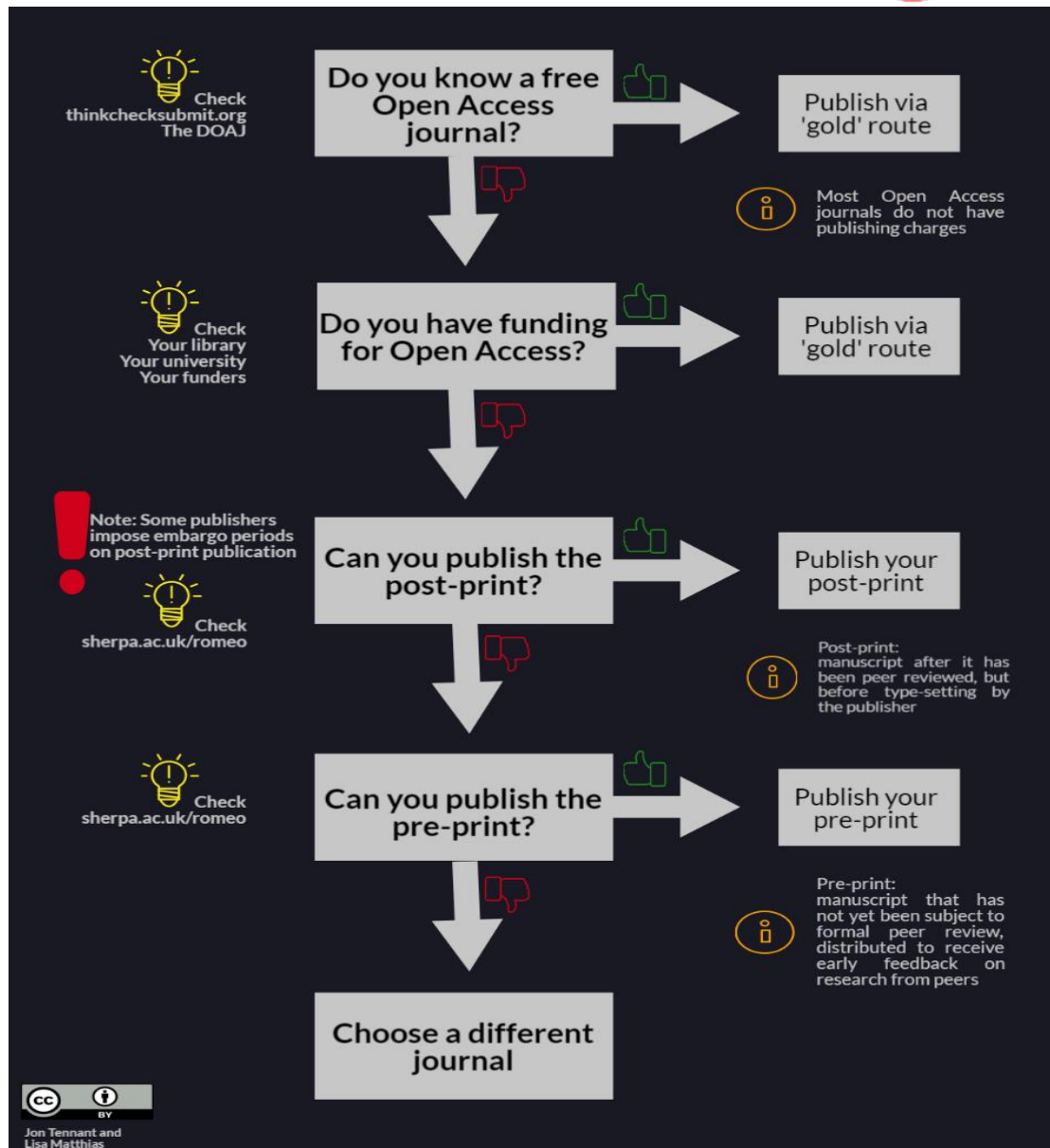
## Advice to Authors: you are the owner of copyrights!

1. Read your contracts and retain some of rights → [SPARC Author Addendum](#)
2. Find out more about publishers' open access policies → [SHERPA RoMEO](#)
3. Pick your publisher carefully and consider to publish in an open access journal → [Directory of Open Access Journals](#)
4. Be careful of predatory journals → [Beall's list of predatory journals and publishers](#)
5. Need Help? Ask the [Library Helpline](#) of Padua University



# How to make your research open access

[https://figshare.com/articles/How\\_to\\_make\\_your\\_research\\_open\\_access\\_For\\_free\\_and\\_legally\\_/5285512/3](https://figshare.com/articles/How_to_make_your_research_open_access_For_free_and_legally_/5285512/3)





What we will see today:

- **Scholarly Communication:** traditional publishing and Open Access
- **Bibliometrics:** traditional and innovative tools for scientific evaluation

# From: il Bo live

## Shanghai ranking: Unipd prima tra gli atenei italiani

L'università di Padova prima, tra gli atenei italiani, nel ranking – pubblicato il 15 agosto 2017 – di Shanghai. La [classifica ARWU](#) (*Academic ranking of world universities*) è una delle più autorevoli assieme a quelle britanniche di Times Higher e Qs, stilata dalla Jiao Tong University di Shanghai.

## Dipartimenti d'eccellenza del Miur: Unipd ai primi posti

Tredici dipartimenti su 15 ammessi a finanziamento. Un ottimo risultato per l'università di Padova: l'elenco dei *dipartimenti di eccellenza* selezionati dall'Anvur e pubblicato il 9 gennaio 2018 premia abbondantemente l'ateneo di Padova. I *dipartimenti di eccellenza* rappresentano un intervento

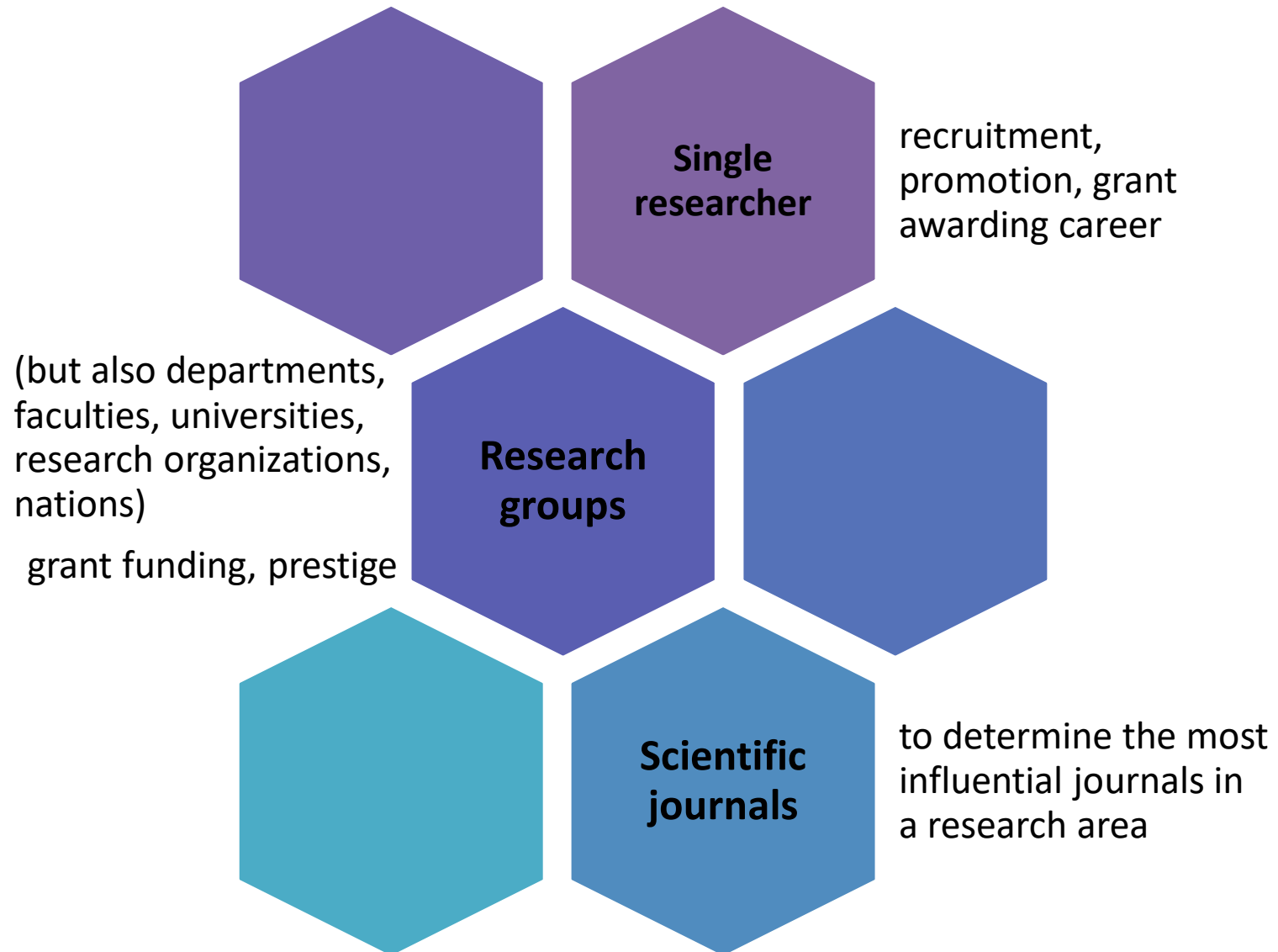
## Censis e gli altri: è tutta questione di ranking

Sgomberiamo ogni dubbio: l'università di Padova, con il Censis, migliora la sua posizione rispetto al 2017, riaggucando il secondo posto in classifica tra i mega atenei a pari merito con l'università di Firenze e dietro all'eterna rivale di sempre: Bologna, prima in Italia: “Rimaniamo sempre ai vertici – dice il rettore Rosario Rizzuto – siamo tornati al secondo posto generale con un primato nella comunicazione”.  
... atenei su cui vogliamo

## Europe teaching ranking 2018: l'università di Padova è seconda

L'università di Padova si conferma ai vertici delle classifiche italiane. Dopo l'ottimo secondo posto registrato nella classifica italiana del [Censis](#), l'ateneo di Padova **conferma la sua posizione** (in Italia) anche secondo lo [Europe Teaching ranking 2018](#), redatto dal *Times Higher*

# Evaluation of research: why?



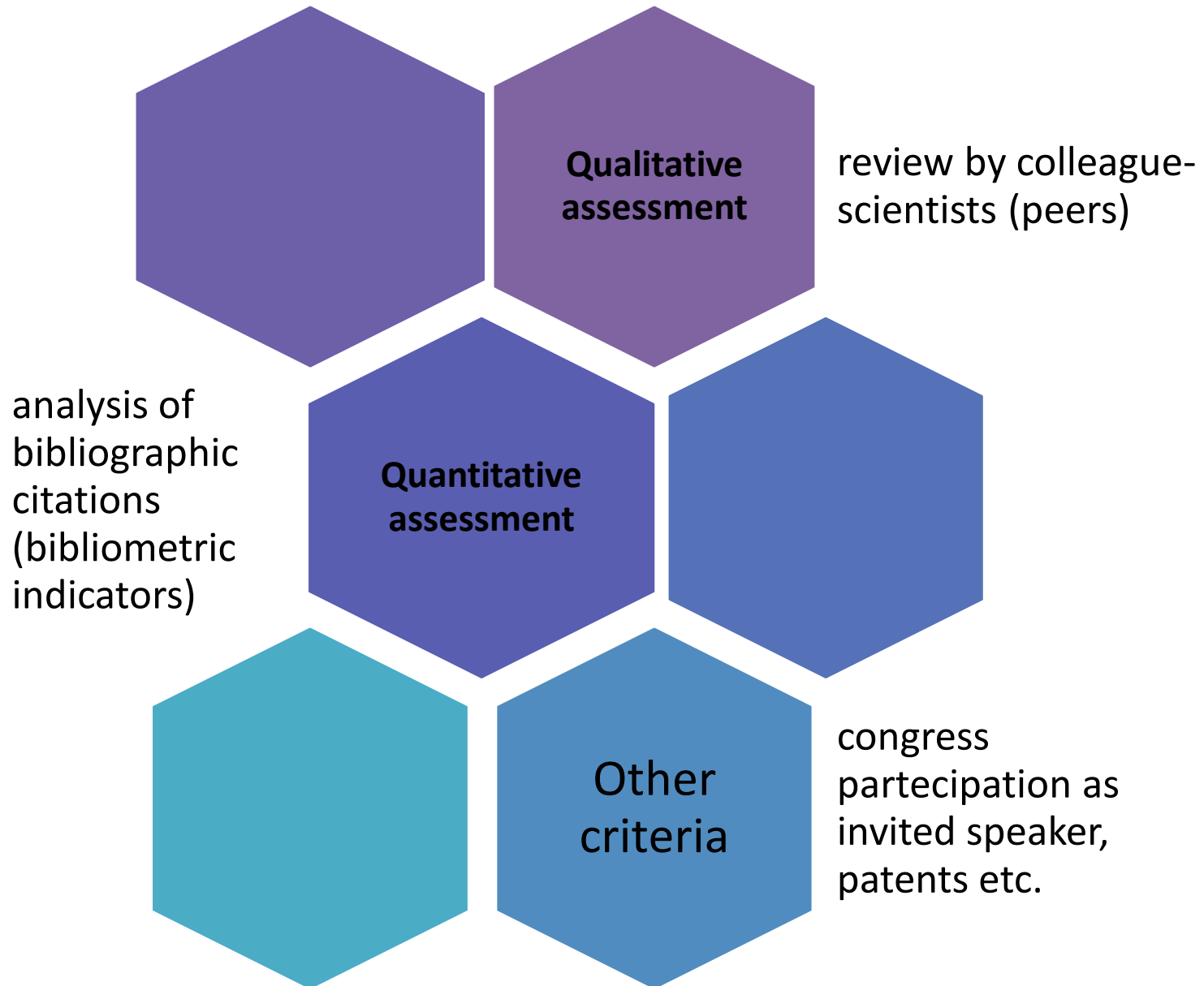
# Evaluation of research: how?



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# Evaluation of research: Italy

The **National Committee of Guarantors for Research** (*Comitato Nazionale dei Garanti per la Ricerca – CNGR*) Consultative body to the **Ministry of Education, University and Research (MIUR)**, tasked to promote the quality of research and ensure proper functioning of peer reviews.



The **National Agency for the Evaluation of the University and Research Systems** (*Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca – ANVUR*) Reports to the MIUR and, on the basis of autonomy, impartiality, professionalism and transparency, works to ensure the quality of higher education and research in Italy.



# Bibliometrics

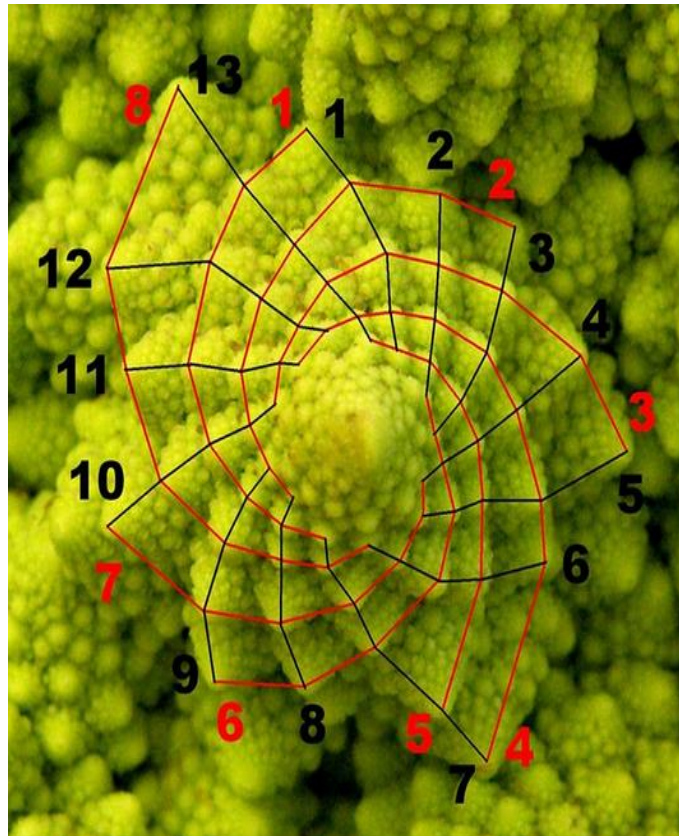
**Bibliometrics** is the use of statistical methods to analyse books, articles, and other publications.

It produces a **quantitative analysis** that can help to make decisions about where to publish a research or to get information about the impact of published research.





# Citations analysis



Citation analysis is a way of measuring the relative importance or impact of an author, an article or a publication by **counting the number of times that author, article, or publication has been cited** by other works.

«... the number of citations received by a **publication** is seen as a quantitative measure of the resonance and impact that this publication has created in the scientific community».

[https://www.researchgate.net/publication/241700153\\_Data\\_Sources\\_for\\_Performing\\_Citation\\_Analysis\\_An\\_Overview/download](https://www.researchgate.net/publication/241700153_Data_Sources_for_Performing_Citation_Analysis_An_Overview/download)



# Bibliometric indicators



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Impact  
factor

Altmetric

PlumX

Scimago  
Eigenfactor

Bibliometric indicators  
are **indexes** generally  
used to evaluate the  
quantity of the impact  
of research within the  
**community** of an  
author.

Google  
Scholar

*h*-  
index

Web of  
science  
Scopus

# The Impact Factor

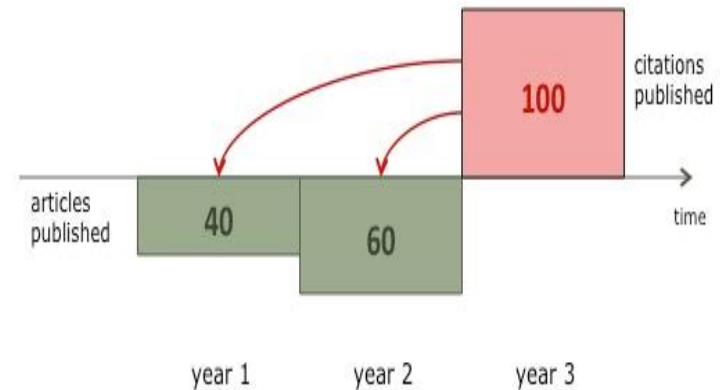


The **impact factor (IF)** or **journal impact factor (JIF)** of an academic journal is the average between the number of citations of the works published in the journal and the total number of works published by the same journal in the two previous years.

It is a copyrighted index, and can be consulted only through the products of the publisher **Clarivate Analytics**, and in particular the [Journal Citations Reports](#) database.

## The Impact Factor

Introduced in 1950's by Eugene Garfield: ISI



$$IF(\text{year } 3) = 100 / (40 + 60) = 1$$

# Alternative metrics (Altmetrics)

Altmetrics are **non-traditional** bibliometrics proposed as an alternative or complement to more traditional citational impact metrics. They measure the impact of articles by taking **data from social media, websites, and other internet resources**.



Altmetric.com: data science company that tracks where published research is mentioned online, and provides tools and services to institutions, publishers, researchers, funders and other organisations to monitor this activity.

Plum Analytics: altmetrics company whose best known product is **PlumX**. It was acquired by Elsevier in February 2017 and its metrics were immediately incorporated into Elsevier's products, including Mendeley and Scopus.



ImpactStory: open source, web-based tool that provides altmetrics to help researchers measure the impacts of their research outputs including journal articles, blog posts, datasets, and software.

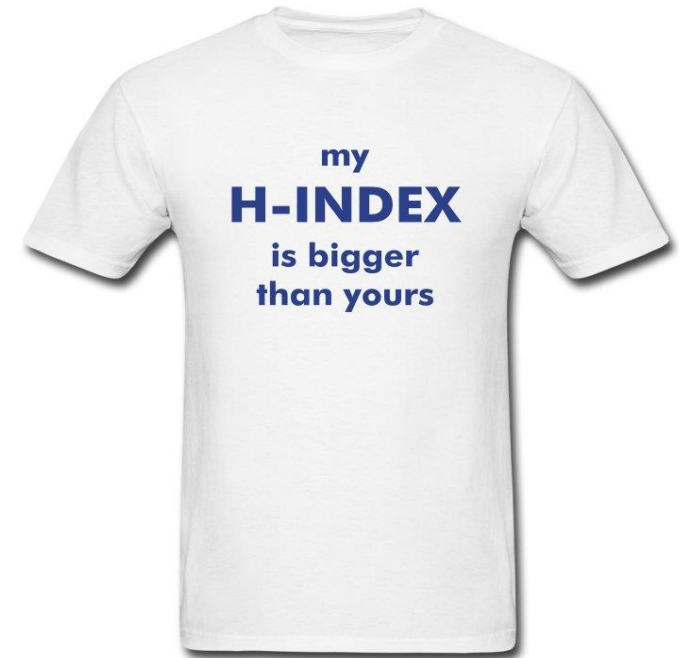
# What about authors?

## Hirsh Index (*h*-index)

The *h*-index quantifies the prolificacy and impact of scientists' work, based on the number of their publications and the number of citations received.

The *h*-index calculators are easily available on the net and are accessible through:

- Web of Science (Clarivate Analytics – under subscription)
- Scopus (Elsevier – under subscription)
- Google Scholar (for free – only if the author has a profile)
- PoP (Publish or Perish - for free - based on Google Scholar data)



Curiosity: [Top Italian Scientists](#)

# Library System support services

In the section “[About publishing](#)” of the Library System web portal, authors will find information on Open Access, on publishing, and on the management of data.

## About publishing



Filed under: [digital repositories](#), [open access](#), [self archiving](#), [OAI](#), [license agreement](#), [publication](#), [open archives](#), [publication standards](#), [Impact Factor](#)



### Research repositories

Get your articles viewed more often



### Open Access

Increase the impact of your research



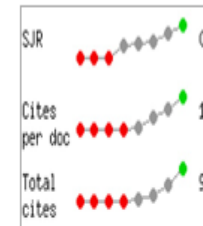
### Research Data Unipd

A safe place for your research



### Research data management

Manage your data in the best possible way



### Measure your impact

Evaluate the scientific impact of your research



### Publishing support

Open Access publishing? It's easier with us!

# Library System support services



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Authors can submit specific requests using the Library System [Help Service](#), choosing the following address:

- 11 Supporto Open Access (Supporto Ricerca)



Kyle James

<https://www.flickr.com/photos/jameskm03/2711755476>



# Library System support services



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Before and after publishing articles and data, improve your knowledge with:

## Scholarly Communication and principles of Open Science

a Training Course For PhD Students,  
composed by five modules.

It aims to introduce early-career researchers to scientific communication and to the principles of Open Science (Open Access, Open Data, Open Licences).





# Presentation by OA Support Group University of Padova Library System



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