



Scientific Communication: publishing and evaluation

PhD Course in Statistics Library Labs: Module III June 3 2020





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What we will see today:

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



Scientific communication

» the process of publication and dissemination of research findings



Research publications:



- ✓ Books (monographs)
- ✓ Journal article, book section, chapter in research book, conference proceedings
- Publications for professional communities (guide or professional manual, textbook material, research report or technical report, working paper, maps ...)
- ✓ Theses and dissertations
- $\checkmark\,$ Patents and invention disclosures
- ✓ Standards
- ✓ Statistics
- ✓ Video, image and sound resources✓



Scientific writing: structure of a scientific paper





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Process of publication of a scientific paper



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

Jniversity of Padova Library System



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**



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





Images from https://www.authorsalliance.org/wp-content/uploads/2017/10/creative-commons-infograph-horizontal-1.png



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Intellectual property

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



2. Literary and artistic
 property
 comprises mainly

Copyright / author's rights



MORAL RIGHTS <-> ECONOMIC RIGHTS

PATERNITY: the author has a paternity right which enables him to have his name on the work

INTEGRITY: which enables the author to refuse any modification to the work (or its context) or any re-use of it PRIMARY RIGHTS are reserved to the author; no one else could publish, distribute, diffuse the work without the author's consent and without paying a reward to the rights owner

SECONDARY RIGHTS involve situations where a third party uses a work that's already been distributed to the public



And the future of scientific publication?

OPEN ACCESS



Open access logo, originally designed by <u>Public Library of Science</u>. <u>https://commons.wikimedia.org/wiki/File:Open Access logo PLoS white.svg</u>



What is Open Access?

Open access (**OA**) is a set of principles and a range of practices through which research outputs are distributed online, free of cost or other access barriers.

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

What makes it possible is the internet and the consent of the author or copyright-holder.



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...

Copyright and Creative Commons





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Creative Commons



Attribution or CC-BY



Attribution-ShareAlike, or CC-BY-SA



Attribution-NoDerivs, or CC-BY-ND



Attribution-NonCommercial, or CC-BY-NC



Attribution-NonCommercial-ShareAlike, or CC-BY-NC-SA



Attribution-NonCommercial-NoDerivs, or CC-BY-NC-ND



<u>CC0 mark</u>



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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/openscience-open-access



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Which are the benefits?



CC-BY Danny Kingsley & Sarah Brown

<u>@_0</u>

European recommendations



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EC Recommendation 2012/417

 <u>COMMISSION RECOMMENDATION of 17</u> July 2012 on access to and preservation of scientific information (2012/417/EN)

EC Communication COM(2012) 401 final

• <u>Towards better access to scientific</u> <u>information: Boosting the benefits</u> <u>of public investments in research</u>

EC Recommendation 2018/790 <u>COMMISSION</u> <u>RECOMMENDATION (EU)</u> <u>2018/790 of 25 April 2018 on</u> <u>access to and preservation of</u> <u>scientific information</u>



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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

Plan S



Plan S Making full and immediate Open Access a reality 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.coalitions.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.

The Traditional Academic publishing model



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limited dissemination, economic efficiency & social impact



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. Open Access and academic publishing models Green

Open

Access

OA

Gold

OA

Red OA

(hybrid OA)

Bronze

OA

Free

Access



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Access to self-archived documents in an institutional or disciplinary repository, applying open licenses, in the version granted by the publisher

Access immediately available in Open Access with an open license, in open access journals (with possible APC payment)

Open access to single articles published in journals that are normally under subscription. The single full text is on the publisher's website with an open license

Freely available full texts on the publisher's website, declared OA without any open license

Free access, without open licenses or info on Open Access policies. Possible indication of copyright. Revocable free status.



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Process of publication of a scientific paper



University of Padova

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

Jniversity of Padova Library System

The green road



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https://aoasg.org.au/what-is-open-access/

- Some versions of an article can be uploaded to an open institutional or disciplinary archive.
- This practice, also called *self-archiving*, is accepted by most international publishers.
- Possible versions include:
 - Pre-print: the text of the article ready to be submitted to a journal
 - Post-print or author's accepted manuscript: the article that has already passed the peer review but is not yet formatted by the publisher.
 - Published version or Version of record
- The filing can take place at the time of publication or after an embargo period: it depends on the policies of the publishers and the agreement signed by the author.

The gold road: publishing in OA journals [paying APC]



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- The article is published in an open access journal or in a journal that contemplates the open access publication of individual articles (hybrid journal).
- In both cases authors retain copyrights, while specific licenses regulate the use and reuse of articles by readers (e.g. Creative Commons licenses).

Keyword: APC = Article Processing Charge

It's also known as a publication fee, charged to authors to make a work available open access in an open access journal (or hybrid journal). It is one of the means by which journals cover publication costs.

The publishing models of Open Access: green and gold



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WILEY

https://authorservices.wiley.com/authorresources/Journal-Authors/open-access/index.html

Gold Open Access	Green Open Access
What is it?	What is it?
The author pays an Article Publication Charge and the article is immediately freely available online for all to read, download, and share	The author self-archives a version of the subscription article in an online repository or website
Options	Options
Wiley offers two ways to publish gold open access, authors may publish in a:	Self-archiving requirements vary depending on the article version being archived. Authors may archive the:
 Fully open access journal - journals where every article is published open access Subscription journal offering OnlineOpen an open access option that most Wiley journals offer 	 Submitted version on acceptance Accepted version with a 12-24 month embargo - embargo period varies by journal (Use our Author Compliance Tool to check)
License	License
Open Access Agreement with a Creative Commons license	Standard CTA or ELA
Charge	Charge
Article Publication Charge - amount varies by journal (Visit our Article Publication Charge page to learn more)	No charge
Learn more	Learn more

D Springer Q Services Springer Shop About us What is Open Access? t. Author & reviewer tutorials Open Access At it's most fundamental Open Access is when publications are freely available online to all at no cost » What is Open Access? 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 » Benefits of Gold Open Access build on the most recent work in the field) and funders (as the work they fund has broader impact by » Article Processing Charges being able to reach a wider audience). » Copyright and license There are two routes to open access » Mandates and funding » OA vs. subscription journals Gold open access old OA makes the final version of an article freely and permanently accessible for everyone publication. Copyright for the article is retained by the authors and most of the permission barriers are » Quiz removed. Gold OA articles can be published either in fully OA journals (where all the content is published OA) or hybrid iournals (a subscription-based journal that offers an OA option which authors can chose if they wish). An overview of fully » Further information 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 is it 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 acces een OA, also referred to as self-archiving, is the practice of placing a version of an author's ository, 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/RoMEO database

SPRINGER

https://www.springer.com/gp/authorseditors/authorandreviewertutorials/open-access/what-isopen-access/10286522

The red way: publishing in hybrid journals paying APC





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Keyword 1: HYBRID

A **hybrid open-access journal** is a subscription journal in which some of the articles are open access.

It's an option for authors to purchase extra visibility in addition to the payment of subscription to access all other content.

Keyword 2: DOUBLE DIPPING

"Double dipping" refers to cases where a publisher sells their services to an author (author-pays open access) while simultaneously selling the end product to libraries (a subscription).

Martin Paul Eve: On open-access books and "double dipping" https://eve.gd/2015/01/31/on-open-access-books-and-doubledipping/ The black way: predatory

Keyword: **PREDATORY PUBLISHERS**

Academics are tricked into publishing with them, though their journals are poor quality or even fraudulent, without checking for quality and legitimacy.



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Hints:

- Beall's list of predatory journals and publishers: <u>https://beallslist.weebly.com</u>
- <u>Infographic</u> on predatory publishers
- <u>Think. Check. Submit.</u> helps researchers identify trusted journals for their research

Black Open Access: an example



FEDERAL TRADE COMMISSION PROTECTING AMERICA'S CONSUMERS

Court Rules in FTC's Favor Against Predatory Academic Publisher OMICS Group; Imposes \$50.1 Million Judgment against Defendants That Made False Claims and Hid Publishing Fees

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FOR RELEASE

April 3, 2019

TAGS: Bureau of Consumer Protection | Consumer Protection | Advertising and Marketing |

Advertising and Marketing Basics | Education

A federal judge has ordered journal publisher and conference organizer Srinubabu Gedela and his companies to pay more than \$50.1 million to resolve Federal Trade Commission charges that they made deceptive claims to academics and researchers about the nature of their conferences and publications, and hid steep publication fees.

"These publishing companies lied about their academic journals and took millions of dollars from aspiring researchers and writers," said Andrew Smith, Director of the FTC's Bureau of Consumer Protection. "We're pleased with the court's strong order holding these companies and its owner responsible for the damage they caused."

In its 2016 complaint, the FTC alleged that OMICS Group Inc., iMedPub LLC, Conference Series LLC, and the owner of these companies, Gedela, advertised hundreds of online academic journals and international conferences for scientists and medical professionals, and deceptively claimed that their journals provided authors with rigorous peer review and had editorial boards made up of prominent academics. In reality, many articles were published with little to no peer review, and many individuals represented to be editors had not agreed to be affiliated with the journals.



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The New York Times

The Price for 'Predatory' Publishing? \$50 Million

The Federal Trade Commission accused Omics International, a publisher in India, of operating hundreds of questionable scientific journals. A federal judge agreed.



April 3, 2019

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In the world of scientific research, they are pernicious impostors. Socalled predatory journals, online publications with official-sounding names, publish virtually anything, even gibberish, that an academic researcher submits — for a fee.



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The bronze way: publishing with declared OA Publishers, no clear licenses

Keyword: BRONZE WAY

Commonly no APC is paid, but it is the publisher that chooses to make a publication freely available to read.

Open Access relies upon the good will of the publisher, as it can close down publications at any time.

Besides, terms of use and reuse aren't clearly stated.



From: <u>https://brookesoa.blog/open-access/the-different-</u> models-of-open-access)



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Free Access vs. Open Access



Gratis = Free Access while Libre = Open Access



Advice to Authors: you are the owner of copyrights!

- Read your contracts and retain some of rights → <u>SPARC Author</u> <u>Addendum</u>
- 2. Find out more about publishers' open access policies $\rightarrow \frac{\text{SHERPA}}{\text{RoMEO}}$
- Pick your publisher carefully and consider to publish in an open access journal → <u>Directory of Open Access Journals</u>
- Be careful of predatory journals → <u>Beall's list of predatory journals</u> and publishers
- 5. Need Help? Ask the Library Helpline of Padua University







on Tennant and sa Matthias How to make your research open access

https://figshare.com/articles /How_to_make_your_resea rch_open_access_For_free _and_legally_/5285512/3



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What we will see today:

 Scholarly Communication: traditional publishing and Open Access

 Bibliometrics: traditional and innovative tools for scientific evaluation

From: il Bo live

■ IN ATENEO 10 GENNAIO 2018 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 d*ipartimenti di eccellenza* rappresentano un intervento

■ UNIVERSITÀ E SCUDIA
Censis e gli altri: è tutta questione di ranking
Somberiamo ogni dubbio: l'università di Padova, con il Censis, migliora la sua posizione
Sigetto al 2017, riagguantando il secondo posto in classifica tra i mega atenei a pari merito
Iniversità 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 in classifica tra i mega atenei su cui vogliamo

IN ATENEO

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 <u>Censis</u>, l'ateneo di Padova conferma la sua posizione (in Italia) anche secondo lo <u>Europe Teaching ranking 2018</u>, redatto dal *Times Higher*

https://ilbolive.unipd.it/

continuare a insistere".

Shanghai ranking: Unipd prima tra gli atenei italiani

3 LUGLIO 2018

L'università di Padova prima, tra gli atenei italiani, nel ranking – pubblicato il 15 agosto 2017 – di Shanghai. La <u>classifica ARWU</u> (*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.

12 LUGLIO 2018

Evaluation of research: why?






Evaluation of research: how?





review by colleague-Qualitative scientists (peers) assessment analysis of bibliographic Quantitative citations assessment (bibliometric indicators) congress Other partecipation as invited speaker, criteria patents etc.

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.



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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



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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.



<u>https://en.wikipedia.org/wiki/Bibliometrics</u> <u>Creative Commons Attribution-ShareAlike License</u> Scientific communication and research evaluation: Bibliometrics and Bibliometric Indicators(Roberta Sato, 2019)

Citations analysis



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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_Perfor ming_Citation_Analysis_An_Overview/download



http://bibliotecadigitale.cab.unipd.it/en/publishing_EN/if

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 <u>Reports</u> database.



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The Impact Factor

Introduced in 1950's by Eugene Garfield: ISI



IF(*year* 3)=100/40+60=1

http://curt-rice.com/wpcontent/uploads/2014/12/Slide2.jpg

Alternative metrics (Altmetrics)



<u>Altmetrics</u> 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.



<u>Altmetric.com</u>: 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.

<u>Plum Analytics</u>: 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.





<u>ImpactStory</u>: 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.



Multimorbidity patterns in high-need, high-cost elderly patients

http://hdl.handle.net/11577/3286538

WEB OF SCIENCE"



🌒 💭 🛛 PlumX Metr	ics 🔨
Usage, Capture Social Media ar beyond Scopus	nd Citations
Citations	
Citation Indexes:	7
Usage	
Full Text Views:	2200
Abstract Views:	104
Link-outs:	4
Captures	
Exports-Saves:	26
Readers:	68
see details	

Display of metrics in Scopus



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→ Export





PlumX Metrics (9) see details

Citations		
CrossRef - Citation Indexes:	7	

Usage

EBSCO - Full Text Views:	243
EBSCO - Abstract Views:	104
EBSCO - Link-outs:	4
PLoS - Full Text Views:	1340
PubMedCentral - Full Text Views:	617

Captures

EBSCO - Exports-Saves:	26
Mendeley - Readers:	37
Mendeley - Readers:	31

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)







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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





 R^{G}



	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 a.edu/2015/12/a-social-netw	No

In the section "<u>About publishing</u>" of the Library System web portal, authors will find information on Open Access, on publishing, and on the management of data.

UNIVERSITÀ

DEGLI STUDI

DI PADOVA

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About publishing

Filed under: digital repositories, open access, self archiving, OAI, license agreement, publication, open archives, publication standards, Impact Factor

Library System support services



Library System support services



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Authors can submit specific requests using the Library System <u>Help Service</u>, choosing the following address:

 11 Supporto Open Access (Supporto Ricerca)



Kyle James <u>ttps://www.flickr.com</u>/ is/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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