

# Open Science e Open Access nelle Scienze (Umane e non solo)

Silvio Peroni

<https://orcid.org/0000-0003-0530-4305>

Digital Humanities Advanced Research Centre (DHARC),  
Dipartimento di Filologia Classica e Italianistica (FICLIT), Università di Bologna, Bologna, Italia  
[silvio.peroni@unibo.it](mailto:silvio.peroni@unibo.it) – [@essepuntato](https://www.unibo.it/sitoweb/silvio.peroni/en) – <https://www.unibo.it/sitoweb/silvio.peroni/en>

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<https://github.com/open-sci/seminar-2019-06>





definizioni

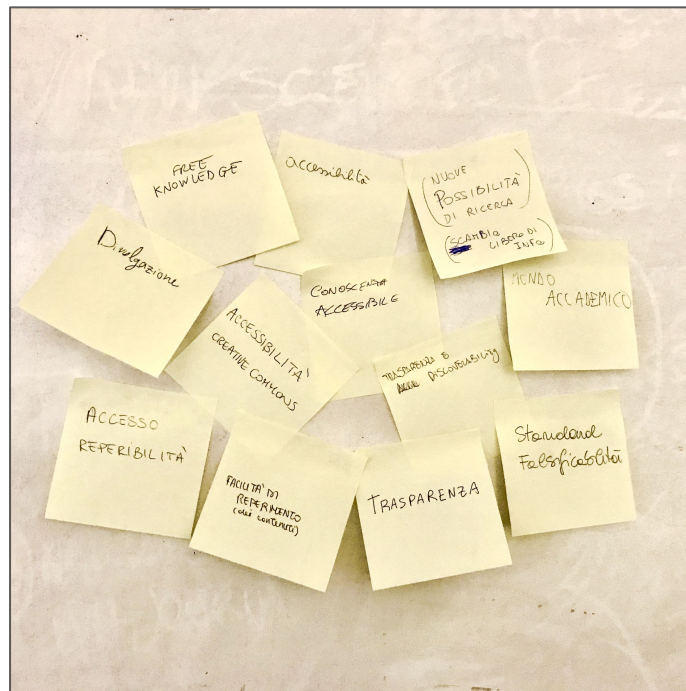
strumenti

pratica

# Per iniziare

Descrivete con una, massimo due parole quel che vi evoca il concetto di *Open Science*

Foto delle parole indicate dai partecipanti al seminario



definizioni

# Scienza

“Sistema di conoscenze ottenute con un'attività di ricerca organizzata e con procedimenti metodici e rigorosi, col fine di fornire una descrizione verosimile, oggettiva e predittiva della realtà e delle leggi regolanti l'occorrenza dei fenomeni”

Wikizionario – <https://it.wiktionary.org/wiki/scienza>

La definizione è indipendente dal particolare campo del sapere che si sta considerando: si applica alla Filologia, così come alla Storia, Filosofia, Matematica, Informatica, etc.

# Open Science

Mi sapreste dare una definizione?

# Open Science: definizioni (1/3)

“The **practice** of science in such a way that **others can collaborate and contribute**, where research data, lab notes and other research processes are **freely available**, under terms that enable **reuse, redistribution** and **reproduction** of the research and its underlying data and methods”

FOSTER Open Science – <https://www.fosteropenscience.eu/taxonomy/term/100>

I prodotti di uno studio (dati, metodi, appunti, etc.) devono essere liberamente:

- riutilizzabili – ad esempio per poterli usare in un altro studio o in una presentazione
- ridistribuibili – per poterli arricchire e mettere nuovamente a disposizione liberamente ad altri studiosi
- riproducibili – così da poter verificare il risultato esposto in uno studio



# Open Science: definizioni (2/3)

“A new approach to the scientific process based on **cooperative work** and new ways of **knowledge distribution using digital technologies** and new **collaborative tools** [to] make science more **credible, reliable, efficient and responsive** to societal challenges”

Commissione Europea – <https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform-faqs#>

La scienza deve essere:

- credibile – controllare e certificare l'integrità scientifica
- affidabile – attività scientifica trasparente, al fine di verificarla
- efficiente – evitare la duplicazione di sforzi e risorse
- reattiva – aiutare a trovare le risposte di quesiti che affliggono la società odierna

# Open Science: definizioni (3/3)

“The **movement** to make scientific research and data **accessible to all** [...] includes practices such as **publishing open scientific research, campaigning for open access** and generally making it easier to publish and communicate scientific knowledge [...] ways to make science more transparent and accessible **during the research process** [...] **open notebook science, citizen science**, and aspects of **open source software and crowdfunded research projects**”

UNESCO

– <http://www.unesco.org/new/en/communication-and-information/portals-and-platforms/goap/open-science-movement/>

Permettere anche a cittadini comuni di essere attivamente coinvolti nelle ricerche scientifiche al pari degli accademici

# Scuole di pensiero sull'Open Science

## Democrazia

accesso alla conoscenza non equamente distribuito → rendere la conoscenza liberamente a disposizione per tutti

## Pragmatismo

creazione della conoscenza più efficiente se si condivide il lavoro → aprire il processo di creazione della conoscenza

## Infrastruttura

una ricerca efficiente dipende dagli strumenti e applicazioni a disposizione → creare piattaforme aperte per gli scienziati

## Pubblico accesso

la scienza deve essere pubblicamente accessibile → rendere la scienza accessibile ai cittadini comuni

## Misurazione dell'impatto

l'impatto dei contributi scientifici deve essere misurato da indicatori alternativi → creazione di un sistema di metriche alternative per misurare l'impatto scientifico

Fecher, B., & Friesike, S. (2014). Open Science: One Term, Five Schools of Thought. In S. Bartling & S. Friesike (Eds.), *Opening Science* (pp. 17–47). [https://doi.org/10.1007/978-3-319-00026-8\\_2](https://doi.org/10.1007/978-3-319-00026-8_2)

# Vantaggi

**Velocità:** “experts identified themselves, and spontaneously contributed based on what was being posted online”

**Trasparenza:** “public can be assured that funding for science, arising from their taxes, is being used responsibly and [...] no suggestion of political interference”

**Disponibilità:** “available on the web [...] need not cease with the graduation of students, the termination of a grant or the demise of a principal investigator”

**Qualità:** “review process never ends [...] commenting function on results, and a mechanism for the community to police those comments”

Woelfle, M., Olliaro, P., & Todd, M. H. (2011). Open science is a research accelerator. *Nature Chemistry*, 3(10), 745–748.  
<https://doi.org/10.1038/nchem.1149>

# Svantaggi

Dal punto di vista del ricercatore e dei cittadini, beh, come dire...

...

...

...

...

... forse (ma forse, eh) dover investire un po' di tempo in più per fare le cose a modo – cosa che dovrebbe essere comunque la norma, non l'eccezione...

# Chi sta promovendo l'Open Science?



<https://ec.europa.eu/research/openscience/>



<http://www.orfg.org>



<http://scoss.org>

## European Open Science Cloud (EOSC)

This is a cloud for research data in Europe. Background, policy information, events and publications related to the EOSC

## Open Science Policy Platform

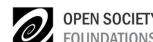
Group that advises the Commission on how to develop open science policy. Meeting reports, member details and background

## Open science monitor

Tracking trends for open access, collaborative and transparent research across countries and disciplines.



JAMES S. McDONNELL FOUNDATION

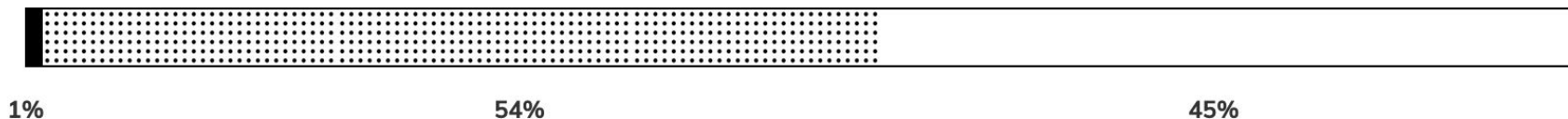


Questi sono solo alcuni esempi, ma la situazione è molto dinamica e in continua espansione

# Iniziativa: I4OC

Obiettivo: persuadere i principali editori accademici a rendere liberamente fruibili tutti i riferimenti depositati, così da tracciare l'evoluzione della scienza liberamente

(Dati aggiornati a febbraio 2019) la percentuale di pubblicazioni con riferimenti bibliografici aperti è cresciuta dall'1% al **54% su 43.2 milioni di articoli** con riferimenti bibliografici depositati in Crossref – **>500M di citazioni** sono aperte



Initiative for Open Citations – <https://i4oc.org>

Per gli ultimi aggiornamenti dalla comunità: il **Workshop on Open Citations**

(<https://workshop-oc.github.io>, hash tag [#WOOC2018](#)) e **WikiCite 2018**

([https://meta.wikimedia.org/wiki/WikiCite\\_2018](https://meta.wikimedia.org/wiki/WikiCite_2018), hash tag [#WikiCite](#))

# Iniziativa: DORA

Obiettivo: migliorare le modalità con cui i prodotti della ricerca scientifica vengono valutati

Rivolta ad agenzie di finanziamento, istituzioni, editori, organizzazioni che forniscono metriche, e ricercatori

Alcuni punti: metadati dei riferimenti bibliografici di articoli rilasciati senza copyright; considerare tutti i prodotti della ricerca oltre le pubblicazioni



## Dichiarazione di San Francisco sulla Valutazione della Ricerca



Durante il convegno annuale della Società Americana di Biologia Cellulare (ASCB) a San Francisco in California, il 16 dicembre 2012, un gruppo di curatori ed editori di riviste accademiche si è riunito per affrontare l'urgente questione di migliorare le modalità con cui i prodotti della ricerca scientifica vengono valutati dalle agenzie di finanziamento, dalle istituzioni accademiche e da altri attori. Il gruppo ha stilato una serie di raccomandazioni denominate Dichiarazione di San Francisco sulla Valutazione della Ricerca (*San Francisco Declaration on Research Assessment*).

Invitiamo le parti interessate appartenenti a tutte le discipline scientifiche a segnalare il loro sostegno all'iniziativa sottoscrivendo a proprio nome questa Dichiarazione.

Read the declaration - Italian, DORA – <https://sfdora.org/read/it/>



# Iniziativa: Plan S

“With effect from 2021, all scholarly publications [...] must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo”

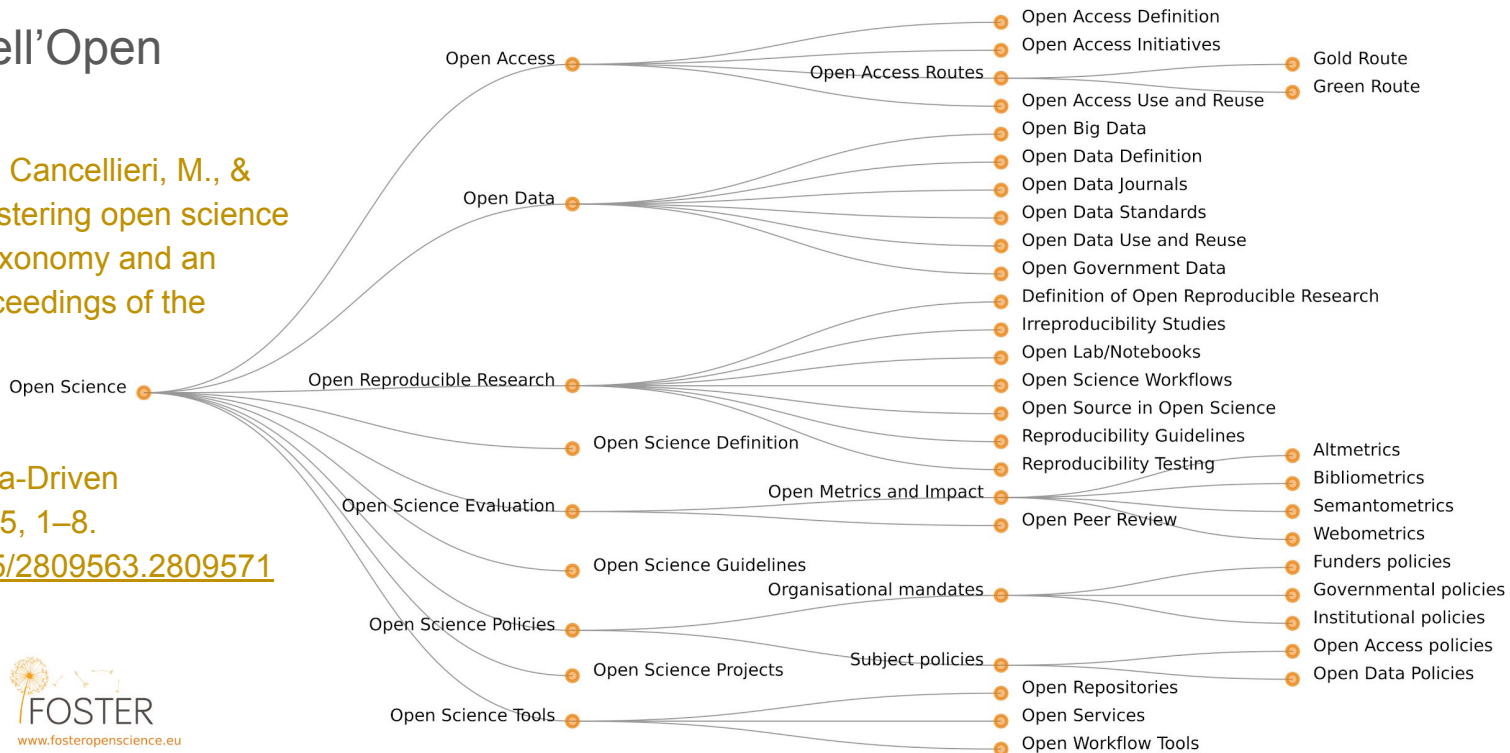
- 01** Authors or their institutions retain copyright to their publications. All publications must be published under an open license, preferably the Creative Commons Attribution license (CC BY), in order to fulfil the requirements defined by the [Berlin Declaration](#);
- 02** The Funders will develop robust criteria and requirements for the services that high-quality Open Access journals, Open Access platforms, and Open Access repositories must provide;
- 03** In cases where high-quality Open Access journals or platforms do not yet exist, the Funders will, in a coordinated way, provide incentives to establish and support them when appropriate; support will also be provided for Open Access infrastructures where necessary;
- 04** Where applicable, Open Access publication fees are covered by the Funders or research institutions, not by individual researchers; it is acknowledged that all researchers should be able to publish their work Open Access;
- 05** The Funders support the diversity of business models for Open Access journals and platforms. When Open Access publication fees are applied, they must be commensurate with the publication services delivered and the structure of such fees must be transparent to inform the market and funders potential standardisation and capping of payments of fees;
- 06** The Funders encourage governments, universities, research organisations, libraries, academies, and learned societies to align their strategies, policies, and practices, notably to ensure transparency.
- 07** The above principles shall apply to all types of scholarly publications, but it is understood that the timeline to achieve Open Access for monographs and book chapters will be longer and requires a separate and due process;
- 08** The Funders do not support the 'hybrid' model of publishing. However, as a transitional pathway towards full Open Access within a clearly defined timeframe, and only as part of transformative arrangements, Funders may contribute to financially supporting such arrangements;
- 09** The Funders will monitor compliance and sanction non-compliant beneficiaries/grantees;
- 10** The Funders commit that when assessing research outputs during funding decisions they will value the intrinsic merit of the work and not consider the publication channel, its impact factor (or other journal metrics), or the publisher.



# Di cosa si occupa l'Open Science: tassonomia

## Tassonomia dell'Open Science

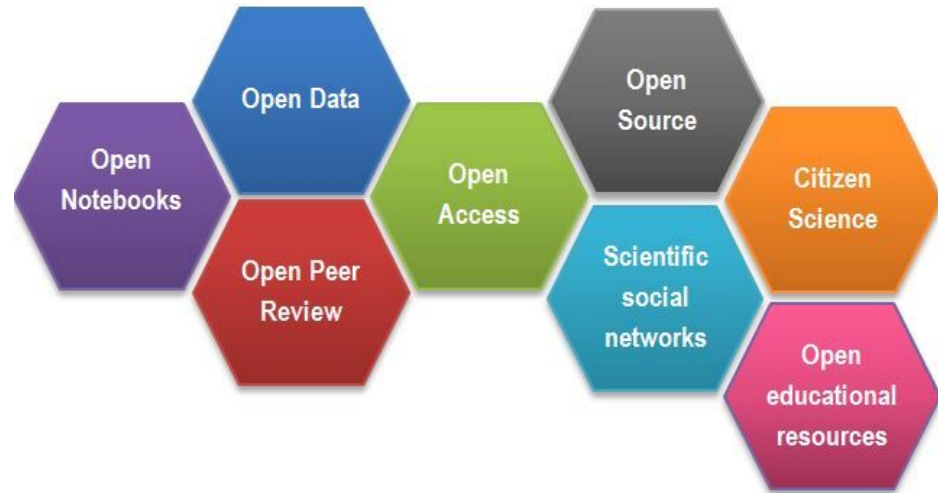
Pontika, N., Knoth, P., Cancellieri, M., & Pearce, S. (2015). Fostering open science to research using a taxonomy and an eLearning portal. Proceedings of the 15th International Conference on Knowledge Technologies and Data-Driven Business - i-KNOW '15, 1–8.  
<https://doi.org/10.1145/2809563.2809571>



# Di cosa si occupa l'Open Science: macro-settori

Il termine Open Science spesso si riferisce a un insieme di movimenti e iniziative, nate anche in periodi diversi, che mirano a rimuovere le barriere alla distribuzione e divulgazione di un qualunque contenuto o dato scientifico e/o del processo utilizzato per produrlo

Tuttavia, il seminario di oggi si focalizzerà principalmente su due aspetti: **Open Access** e **Open Data**



What is Open Science? Introduction,  
FOSTER Open Science –  
[https://www.fosteropenscience.eu/content/  
what-open-science-introduction](https://www.fosteropenscience.eu/content/what-open-science-introduction)

# Contenuto vs. Dati



## The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles

Heather Piwowar<sup>1\*</sup>, Jason Priem<sup>1\*</sup>, Vincent Larivière<sup>2,4</sup>, Juan Pablo Alperin<sup>4,5</sup>, Lisa Matthias<sup>6</sup>, Breve Norlander<sup>6,7</sup>, Ashley Farley<sup>8,9</sup>, Jevin West<sup>10</sup> and Stefanie Haustein<sup>11</sup>

<sup>1</sup>Inspiration, Québec, QC, Canada  
<sup>2</sup>École de bibliothéconomie et des sciences de l'information, Université de Montréal, Montréal, QC, Canada  
<sup>3</sup>Observatoire des Sciences et de Technologies (OST), Centre Interuniversitaire de Recherche sur la Science et la Technologie (CRIST), Université du Québec à Montréal, Montréal, QC, Canada  
<sup>4</sup>Canadian Institute for Studies in Publishing, Simon Fraser University, Vancouver, BC, Canada  
<sup>5</sup>Public Knowledge Project, Canada  
<sup>6</sup>Scholarly Communication Lab, Simon Fraser University, Vancouver, Canada  
<sup>7</sup>Information School, University of Washington, Seattle, USA  
<sup>8</sup>Harvard, USA  
<sup>9</sup>School of Information Studies, University of Ottawa, Ottawa, ON, Canada  
<sup>10</sup>These authors contributed equally to this work.

### ABSTRACT

Despite growing interest in Open Access (OA) to scholarly literature, there is an unmet need for large-scale, up-to-date, and reproducible analyses assessing the prevalence and characteristics of OA. We address this need using *oaiD*, an open online service that determines OA status for 67 million articles. We use three samples, each of 100,000 articles, to investigate OA in three populations: (1) all journal articles assigned a Crossref DOI, (2) recent journal articles indexed in Web of Science, and (3) articles viewed by users of UtopiaWall, an open-source browser extension that lets users find OA articles using *oaiD*. We estimate that at least 28% of the scholarly literature is OA (19M in total) and that this proportion is growing, driven particularly by growth in Gold and Hybrid. The most recent year analyzed (2015) also has the highest percentage of OA (45%). Because of this growth, and the fact that readers disproportionately access newer articles, we find that UtopiaWall users encounter OA quite frequently: 47% of articles they view are OA. Notably, the most common mechanism for OA is not Gold, Green, or Hybrid OA, but rather an under-discussed category we dub Bronze articles made free-to-read on the publisher website, without an explicit Open license. We also examine the citation impact of OA articles, corroborating the so-called open-access citation advantage: accounting for age and discipline, OA articles receive 18% more citations than average, an effect driven primarily by Green and Hybrid OA. We encourage further research using the free *oaiD* service, as a way to inform OA policy and practice.

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 Corresponding authors:  
 Heather Piwowar  
[heather@inspiration.org](mailto:heather@inspiration.org)  
 Jason Priem, [jason@inspiration.org](mailto:jason@inspiration.org)  
 Academic editor:  
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Subjects: Legal Issues, Science Policy, Data Science  
 Keywords: Open access, Open science, Scientometrics, Publishing, Libraries, Scholarly communication, Bibliometrics, Science policy

OPEN ACCESS

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PeerJ

### INTRODUCTION

The movement to provide open access (OA) to all research literature is now over fifteen years old. In the last few years, several developments suggest that after years of work, a sea change is imminent in OA. First, funding institutions are increasingly mandating OA publishing for grantees. In addition to the US National Institutes of Health, which mandated OA in 2008 (<https://publicaccess.nih.gov/index.html>), the Bill and Melinda Gates Foundation (<http://www.gatesfoundation.org/How-We-Work/General-Information/Open-Access-Policy>), the European Commission ([http://ec.europa.eu/research/participants/data/ref/eu/2020/grants\\_main/mis/oa\\_pilot/2020-hi-oa-pilot-guide\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/eu/2020/grants_main/mis/oa_pilot/2020-hi-oa-pilot-guide_en.pdf)), the US National Science Foundation (<https://www.nsf.gov/pubs/2015/nsl/5652/nsl5652.pdf>), and the Wellcome Trust (<https://wellcome.ac.uk/press-releases/wellcome-trust-announces-its-open-access-policy>), among others, have made OA diffusion mandatory for grantees. Second, several tools have sprung up to build value atop the growing OA corpus. These include discovery platforms like ScienceOpen and iScience, and browser-based extensions like the Open Access Button, Canary Hat, and UtopiaWall. Third, Sci-Hub (a website offering pirated access to full text articles) has built an enormous user base, provoking newly intense conversation around the ethics and efficiency of paywall publishing (Bohman, 2016; Greenhalgh, 2017). Academic social networks like ResearchGate and Academia.edu now offer authors an increasingly popular but controversial solution to author self-archiving (Bjork, 2016a; Bjork, 2016b). Finally, the increasing growth in the cost of toll-access subscriptions, particularly via so-called “Big Deals” from publishers, has begun to force libraries and other institutions to initiate large-scale subscription cancellations: recent examples include Caltech, the University of Maryland, University of Konstanz, Université de Montréal, and the national system of Peru (*Universidad de Montréal, 2017; Schiermier & Mege, 2017; Anderson, 2017a; Université de Konstanz, 2014*). As the toll-access status quo becomes increasingly unaffordable, institutions are looking to OA as part of their “Plan B” to maintain access to essential literature (Anderson, 2017).

Open access is thus providing a new surge of investment, controversy, and relevance across a wide group of stakeholders. We may be approaching a moment of great importance in the development of OA, and indeed of the scholarly communication system. However, despite the recent flurry of development and conversation around OA, there is a need for large-scale, high-quality data on the growth and composition of the OA literature itself. In particular, there is a need for a data-driven “state of OA” that includes: (a) large-scale, (b) up-to-date, and (c) reproducible. This paper attempts to provide such an overview, using a new open web service called *oaiD* that finds links to legally-avaliable OA scholarly articles<sup>1</sup>. Building on data provided by the *oaiD* service, we answer the following questions:

1. What percentage of the scholarly literature is OA, and how does this answer vary according to publisher, discipline, and publication year?
2. Are OA papers more highly-cited than their toll-access counterparts?

The next section provides a brief review of the background literature for this paper, followed by a description of the datasets and methods used, as well as details on the

<sup>1</sup>For the interest of full disclosure, it should be noted that two of the authors of the paper are the co-founders of Inspiration, the open-provision organization that developed *oaiD*.

Usati in

Random 100,000										
oa_color	Papers with	Percentage	Average relative citations							
closed	63,933	63.9%	0.90							
all open	36,067	36.1%	1.18							
bronze	12,939	12.9%	1.22							
hybrid	4,314	4.3%	1.31							
gold	7,351	7.4%	0.83							
green only	11,463	11.5%	1.33							
<b>all papers</b>	<b>100,000</b>	<b>100.0%</b>	<b>1.00</b>							

Access per year										
oa_color	2009	2010	2011	2012	2013	2014	2015	2009-2015		
closed	7,949	8,322	8,825	9,375	9,959	9,080	10,423	63,933		
all open	3,982	4,381	4,753	5,341	5,825	6,442	6,343	36,067		
bronze	1,757	1,792	1,886	2,092	1,916	1,686	1,810	12,939		
hybrid	417	483	541	539	660	759	915	4,314		
gold	381	527	705	1,031	1,455	1,370	1,882	7,351		
green only	1,427	1,579	1,621	1,679	1,794	1,627	1,736	11,463		
<b>all papers</b>	<b>11,931</b>	<b>12,703</b>	<b>13,578</b>	<b>14,716</b>	<b>15,784</b>	<b>14,522</b>	<b>16,766</b>	<b>100,000</b>		

Impact of access per year										
oa_color	2009	2010	2011	2012	2013	2014	2015	2009-2015		
closed	66.6%	65.5%	65.0%	63.7%	63.1%	62.5%	62.2%	63.9%		
all open	33.4%	34.5%	35.0%	36.3%	36.9%	37.5%	37.8%	36.1%		
bronze	14.7%	14.1%	13.9%	14.2%	12.1%	11.6%	10.8%	12.9%		
hybrid	3.5%	3.8%	4.0%	3.7%	4.2%	5.2%	5.5%	4.3%		
gold	9.2%	4.1%	5.2%	7.0%	9.2%	9.4%	11.2%	7.4%		
green only	12.0%	12.4%	11.9%	11.4%	11.4%	11.2%	10.4%	11.5%		
<b>all papers</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>		

Impact of access per year										
oa_color	2009	2010	2011	2012	2013	2014	2015	2009-2015		
closed	0.86	0.87	0.91	0.88	0.93	0.93	0.93	0.90		
all open	1.19	1.22	1.21	1.17	1.19	1.15	1.17	1.18		
bronze	1.12	1.20	1.20	1.16	1.26	1.12	1.46	1.22		
hybrid	1.18	1.23	1.32	1.32	1.30	1.33	1.39	1.31		
gold	1.04	0.90	0.95	0.86	0.89	0.82	0.66	0.83		
green only	1.32	1.33	1.30	1.34	1.33	1.37	1.32	1.33		
<b>all papers</b>	<b>0.97</b>	<b>0.99</b>	<b>1.01</b>	<b>0.99</b>	<b>1.01</b>	<b>1.01</b>	<b>1.02</b>	<b>1.00</b>		

Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., ... Haustein, S. (2018). The state of OA: A large-scale analysis of the prevalence and impact of Open Access articles. PeerJ, 6, e4375. <https://doi.org/10.7717/peerj.4375>

Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., ... Haustein, S. (2017). Data from: The State of OA: A large-scale analysis of the prevalence and impact of Open Access articles. Zenodo. <http://doi.org/10.5281/zenodo.837902>

# Cosa significa “open” applicato a contenuti e dati?

“Open means anyone can **freely access, use, modify, and share for any purpose** (subject, at most, to requirements that preserve provenance and openness)”

The Open Definition – <https://opendefinition.org> (ma si veda anche <https://freedomdefined.org> e <https://opensource.org/docs/osd>)

## Requisiti non obbligatori menzionati nella Open Definition

- **Attribuzione:** l’identificazione dell’autore del contributo che si vuole utilizzare
- **Openness:** garantire che l’utilizzo del contributo per la creazione di un nuovo lavoro obblighi quest’ultimo ad essere anch’esso aperto

Questa definizione **non vieta** di riutilizzare materiale aperto per scopi commerciali

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La licenza associata ad un'opera spiega come l'opera stessa è resa disponibile e come può essere usata

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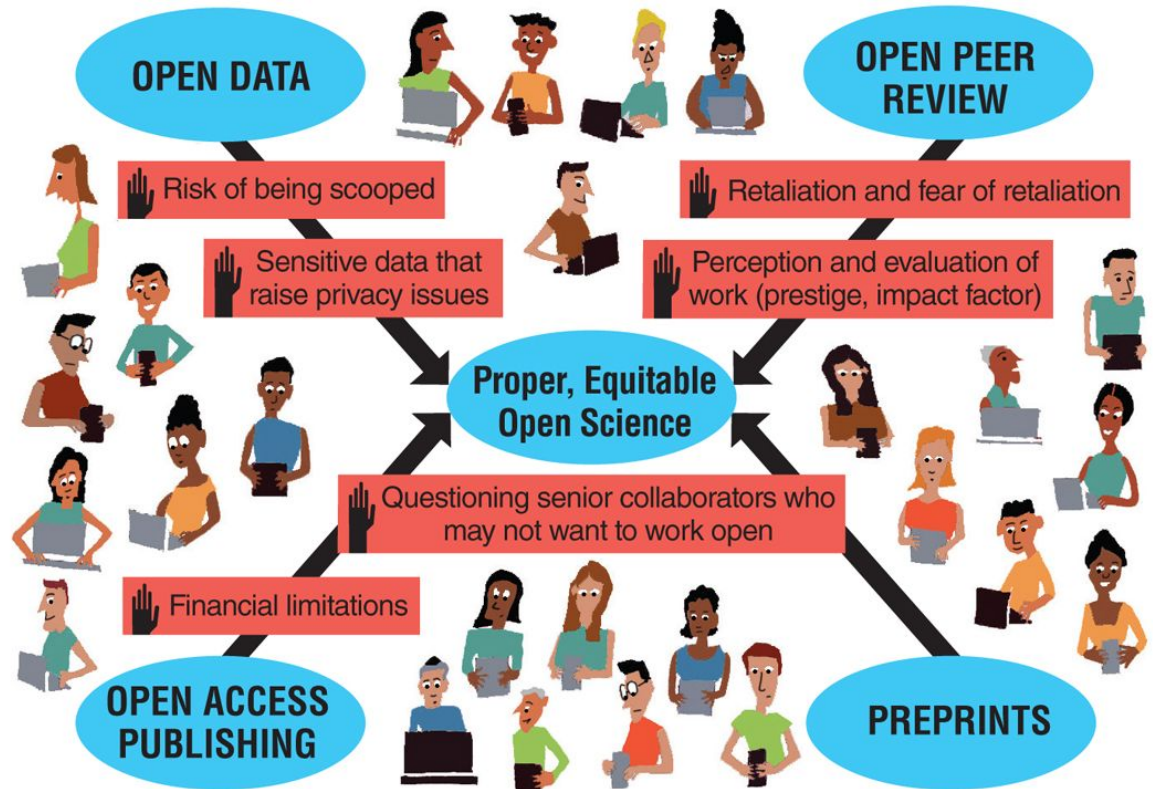
Licenza	Tipologia di materiale	Obbliga attribuzione	Obbliga openness
<a href="#">Creative Commons Attribution (CC-BY)</a>	contenuto	sì	no
<a href="#">Creative Commons Attribution - Share-Alike (CC-BY-SA)</a>	contenuto	sì	sì
<a href="#">Creative Commons CCZero (CC0)</a>	contenuto o dati	no	no
<a href="#">Open Data Commons Public Domain Dedication and Licence (PDDL)</a>	dati	no	no
<a href="#">Open Data Commons Attribution License (ODC-BY)</a>	dati	sì	no
<a href="#">Open Data Commons Open Database License (ODbL)</a>	dati	sì	sì

Conformant Licenses, The Open Definition – <https://opendefinition.org/licenses/>

# Rischi dell'Open Science

“Scientist’s career stage, employment stability, financial circumstances, country of origin or residence, and cultural context [...] may all create barriers to specific aspects of open science”

Bahlai, C., Bartlett, L., Burgio, K., Fournier, A., Keiser, C., Poisot, T., & Whitney, K. (2019). Open Science Isn't Always Open to All Scientists. *American Scientist*, 107(2), 78. <https://doi.org/10.1511/2019.107.2.78>



# È davvero così?

A proposito di scooping:

“Many repositories now mint data deposited in them with Digital Object Identifiers (DOIs) [...] By openly sharing your data you’ll get credit for all of your research [...] increase your overall visibility and potentially open new doors for collaboration”

Astell, M. (2017, June 19). Ask not what you can do for open data; ask what open data can do for you. Retrieved June 18, 2019, from Naturejobs blog website:  
<http://blogs.nature.com/naturejobs/2017/06/19/ask-not-what-you-can-do-for-open-data-ask-what-open-data-can-do-for-you/>

A proposito dei costi dell’Open Access e delle Article Processing Charge (APC):  
“There are a number of routes to OA [...] identified by ‘gold’, ‘bronze’, ‘green’, or ‘diamond’; the latter two explicitly having no APCs”

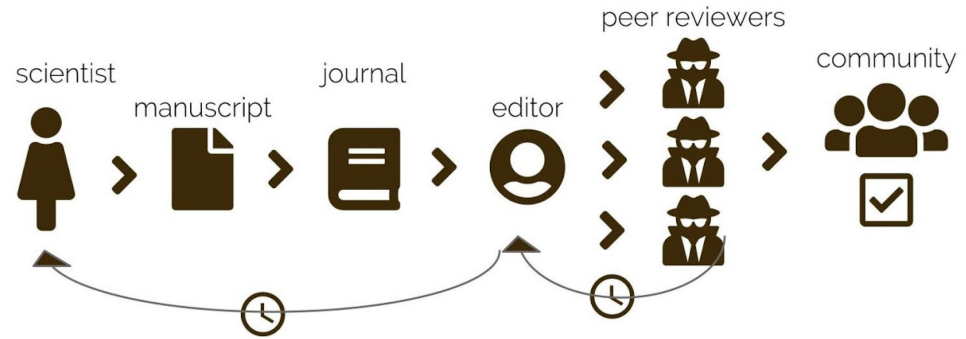
Tennant, J. P., Crane, H., Crick, T., Davila, J., Enkhbayar, A., Havemann, J., ... Vanholsbeeck, M. (2019). Ten Hot Topics around Scholarly Publishing. *Publications*, 7(2), 34. <https://doi.org/10.3390/publications7020034>



# I preprint e il loro valore aggiunto

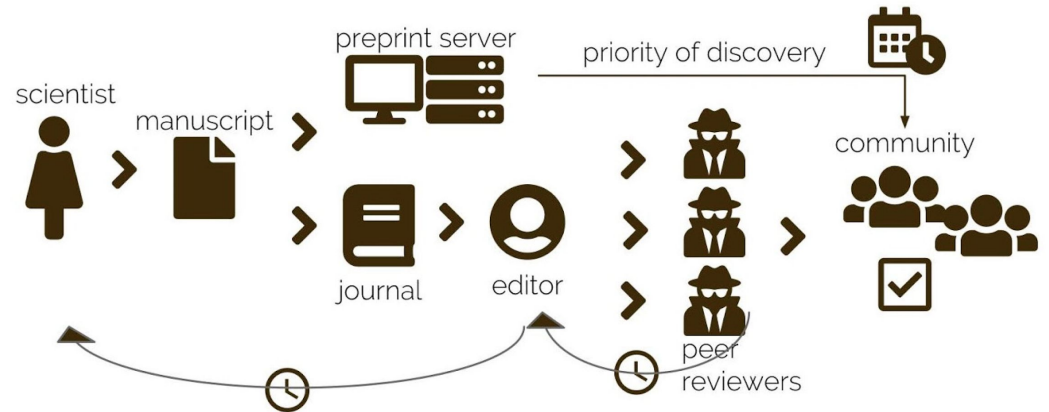
## Processo editoriale tradizionale

Vantaggi: copy-editing, caratteri e impaginazione, interlink con collezioni di dati dello studio, gestione processo di revisione  
Svantaggi: divulgazione lenta



## Processo editoriale tradizionale accompagnato dal deposito di preprint

Vantaggi: come (A) + processo di revisione aperto a tutti (Open Peer Review), efficiente divulgazione dei risultati  
Svantaggi: imparare a usare nuovi strumenti (come i preprint server)



# Open Science e carriera accademica

“Faculties, funders and politicians should learn to reward those researchers who contribute to science transparency, and keep their own research open”

Schneider, L. (2015, December 5). Open Science, Open Scientists. Retrieved June 16, 2019, from For Better Science website: <https://forbetterscience.com/2015/12/07/open-science-open-scientists/>

“In order to increase the practice of Open Science, it is critical that researchers, who are the key agents of change towards OS, are encouraged and incentivised [...] it must be embedded in the evaluation of researchers at all stages of their career [...] this will require universities to change their approach in career assessment for recruitment and promotion”

Cabello Valdes, C., Rentier, B., Kaunismaa, E., Metcalfe, J., Esposito, F., McAllister, D., ... O'Carroll, C. (2017). Evaluation of research careers fully acknowledging Open Science practices: Rewards, incentives and/or recognition for researchers practicing Open Science [EU publications]. Retrieved from Publication Office of the European Union website: <https://doi.org/10.2777/75255>

# Open Access

Mi sapreste dare una definizione?

# Open Access: definizioni (1/2)

“Open access (OA) refers to the practice of providing online access to scientific information that is **free of charge** to the end-user and **reusable**”

Open access – H2020 Online Manual, European Commission –

[http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access\\_en.htm](http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm)

“Open Access means **free access** to scientific information and **unrestricted use** of electronic data for everyone [...] expensive prices and copyrights will no longer be obstacles to the dissemination of knowledge [...] free to add information, modify contents, translate texts into other languages, and disseminate an entire electronic publication”

UNESCO Open Access Publications – <https://en.unesco.org/open-access/>

# Open Access: definizioni (2/2)

“World-wide electronic distribution of the peer-reviewed journal literature and completely **free** and **unrestricted** access to it by all scientists, scholars, teachers, students, and other curious minds [...] this kind of free and unrestricted online availability, which we will call open access”

Budapest Open Access Initiative – <https://www.budapestopenaccessinitiative.org/read>

“Open Access is about **more than** access [...] most liberal Creative Commons license is **CC-BY**, which allows for unrestricted reuse of content, subject only to the requirement that the source work is appropriately attributed”

Why CC-BY?, Open Access Scholarly Publishers Association – <https://oaspa.org/why-cc-by/>

# Riguardo all'uso non commerciale di un opera

Nelle licenze Creative Commons, una delle restrizioni che possono essere aggiunte si chiama “non commercial” (abbreviato “NC”), che vieta l'utilizzo dell'opera per fini commerciali

La clausola NC aggiunge qualche complicazione per l'assegnazione dello stato “Open Access” ad un lavoro scientifico, e ci sono pareri abbastanza discordanti sulla possibilità di adozione di questa clausola:

- La Open Definition non la contempla proprio
- La Open Access Scholarly Publishers Association (OASPA) la accetta, seppur chiarisce che può generare problemi relativamente al riuso dell'opera e, per questa ragione, viene comunque scoraggiata

# Che tipi di soluzioni Open Access esistono?

**Gratis:** la sola lettura dell'articolo è completamente gratuita (NB: è davvero OA?)

**Libre:** la lettura e la possibilità di processare l'articolo con software è permessa

**Gold:** gli articoli sono pubblicati in riviste Open Access (Diamond se non c'è APC)

**Green:** i pre/postprint degli articoli sono messi a disposizione in preprint server

**Ibrido:** articoli in Open Access pubblicati (con APC) in riviste non Open Access

**Black:** articoli condivisi in siti illegali, ad esempio Sci-Hub

Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., ... Haustein, S. (2018). The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles. PeerJ, 6, e4375.

<https://doi.org/10.7717/peerj.4375>

# Lo strano caso del Gold OA e del pagamento doppio

L'Università di Bologna, nel 2018, ha speso più di 8 milioni di euro per l'acquisto di libri, periodici, e materiale bibliografico

Articoli pubblicati in OA con APC vengono di fatto pagati due volte!

Reazioni recenti a questa situazione: University of California vs. Elsevier

Gaind, N. (2019). Huge US university cancels subscription with Elsevier. *Nature*, 567(7746), 15–16.

<https://doi.org/10.1038/d41586-019-00758-x>

Descrizione	Valore 31/12/2017	Valore 31/12/2018	Variazioni	Var. %
<b>7) ACQUISTO DI LIBRI, PERIODICI E MATERIALE BIBLIOGRAFICO</b>	<b>8.020.911,56</b>	<b>8.175.656,31</b>	<b>154.744,75</b>	<b>2%</b>
Materiale bibliografico - escluse risorse elettroniche	2.900.186,25	2.617.142,22	-283.044,03	-10%
Risorse elettroniche	5.064.894,41	5.389.744,88	324.850,47	6%
Giornali e riviste	55.830,90	168.769,21	112.938,31	202%

Nota integrativa – Bilancio Unico di Esercizio 31 dicembre 2018. Direzione Generale, Area Finanza e Partecipate.

<https://www.unibo.it/it/ateneo/chi-siamo/bilanci-di-ateneo/documenti/2018/bilancio-di-esercizio-2018/nota-integrativa/nota-integrativa/>



# Open Data

Mi sapreste dare una definizione?

# Open Data: definizioni

“By open data in science we mean that it is **freely available** on the public internet permitting **any user** to download, copy, analyse, re-process, pass them to software or use them for **any other purpose without financial, legal, or technical barriers** other than those inseparable from gaining access to the internet itself [...] data related to published science should be explicitly placed in the **public domain**”

Panton Principles – <https://pantonprinciples.org>

“Open data is data that’s available to everyone to **access, use and share**”

What is ‘open data’ and why should we care?, The Open Data Institute – <https://theodi.org/article/what-is-open-data-and-why-should-we-care/>

# CC0 o CC-BY per i dati?

“I want to share my data, but it is **important to me that I’m cited** when people use it. I prefer CC BY to CC0 because this **kind of attribution** is what I care about most”

Wolfe, M. (2017, August 9). CC0 and Data Citation. Retrieved June 19, 2019, from <https://www.library.ucdavis.edu/news/cc0-and-data-citation/>

“[CC0] does it exempt researchers from the **obligation of citing the original data authors** [...] like other scientific norms, these expectations are best articulated and enforced by the community itself”

Why does Dryad use CC0?, Dryad – <https://blog.datadryad.org/2011/10/05/why-does-dryad-use-cc0/>

# FAIR

Principi fondamentali per la creazione e la divulgazione dei dati

FAIR data **non implica** open data – ma open data FAIR sono desiderabili

Wilkinson, M. D., Dumontier, M., Aalbersberg, Ij. J., Appleton, G., Axton, M., Baak, A., ... Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, 160018.

<https://doi.org/10.1038/sdata.2016.18>

## TO BE FINDABLE:

F1. (meta)data are assigned a globally unique and eternally persistent identifier.

F2. data are described with rich metadata.

F3. (meta)data are registered or indexed in a searchable resource.

F4. metadata specify the data identifier.

## TO BE ACCESSIBLE:

A1 (meta)data are retrievable by their identifier using a standardized communications protocol.

A1.1 the protocol is open, free, and universally implementable.

A1.2 the protocol allows for an authentication and authorization procedure, where necessary.

A2 metadata are accessible, even when the data are no longer available.

## TO BE INTEROPERABLE:

I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2. (meta)data use vocabularies that follow FAIR principles.

I3. (meta)data include qualified references to other (meta)data.

## TO BE RE-USABLE:

R1. meta(data) have a plurality of accurate and relevant attributes.

R1.1. (meta)data are released with a clear and accessible data usage license.

R1.2. (meta)data are associated with their provenance.

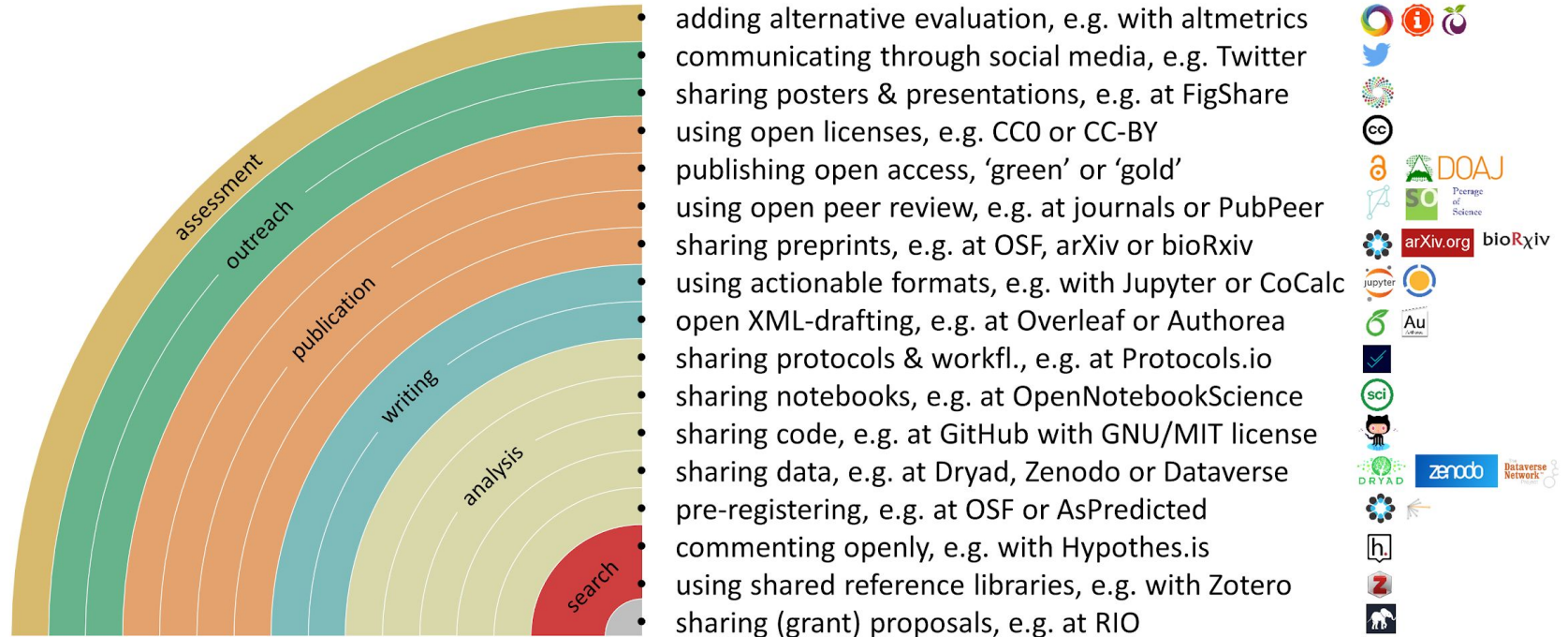
R1.3. (meta)data meet domain-relevant community standards.

The FAIR data principles, FORCE11 –

<https://www.force11.org/group/fairgroup/fairprinciples>

Strumenti

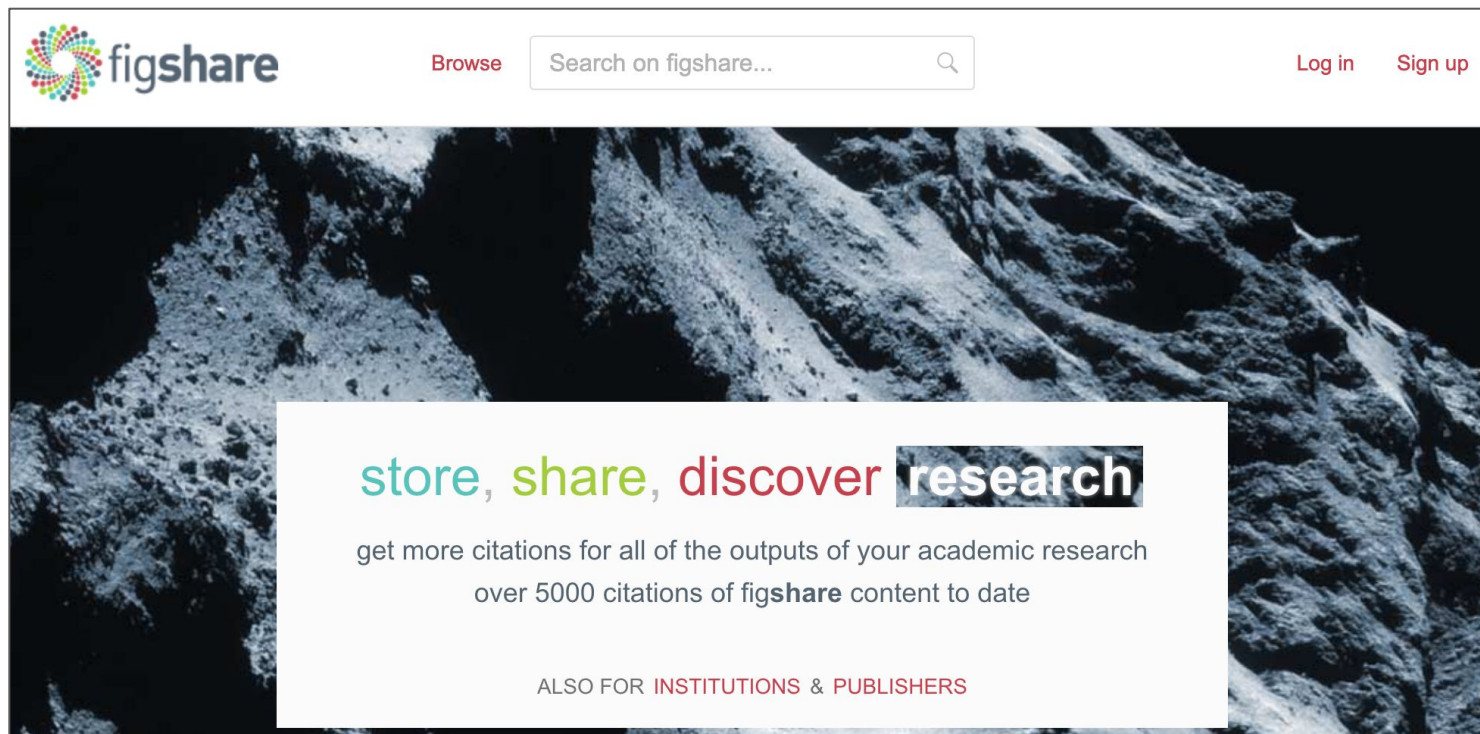
# L'arcobaleno delle pratiche Open Science




Kramer, B., & Bosman, J. (2018). Rainbow of open science practices. Zenodo.

<http://doi.org/10.5281/zenodo.1147025>

# Figshare



 **figshare**

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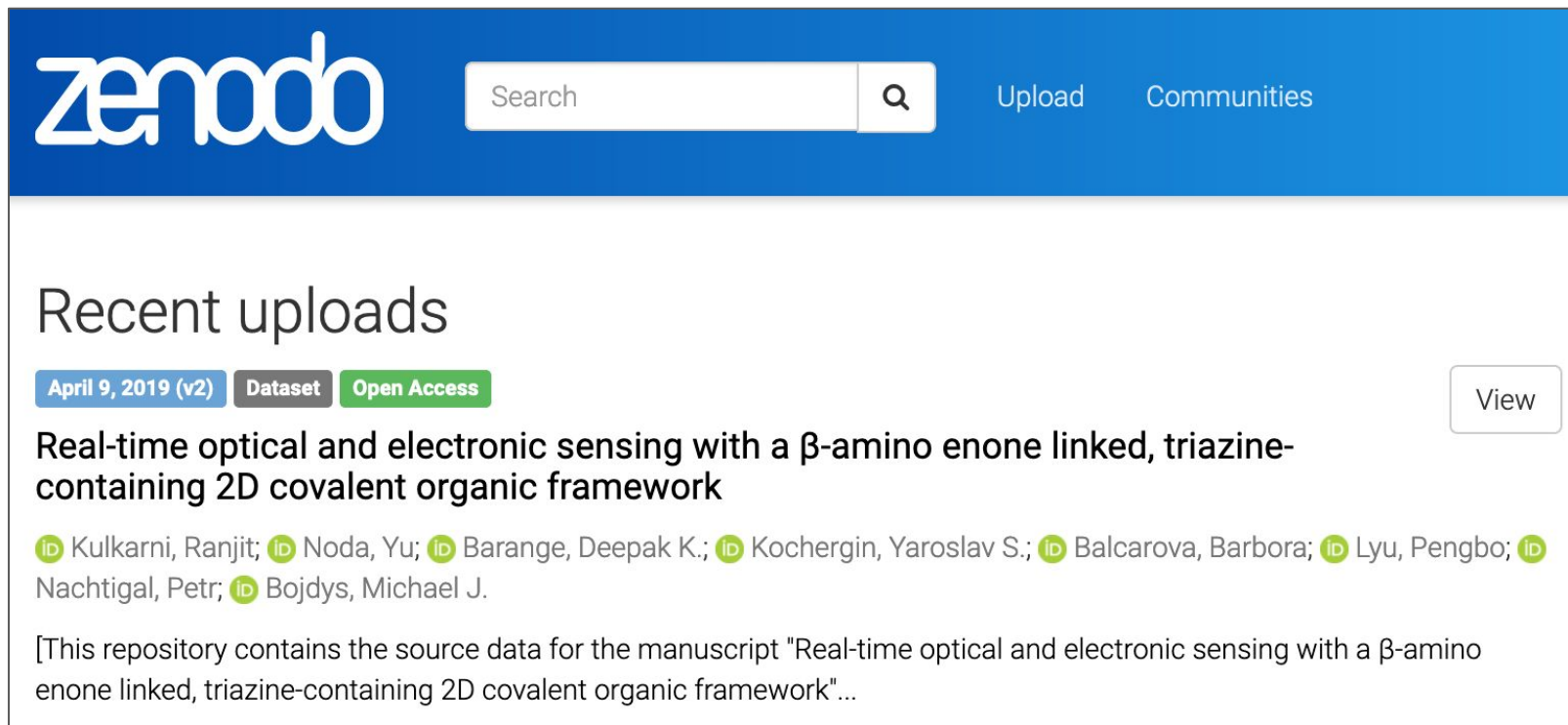
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<https://figshare.com> – per dati e altri contenuti, associa DOI a tutto il materiale

# Zenodo



The screenshot shows the Zenodo website interface. At the top, there is a blue header with the Zenodo logo on the left, a search bar in the center, and 'Upload' and 'Communities' links on the right. Below the header, the main content area features a section titled 'Recent uploads'. The first upload is dated 'April 9, 2019 (v2)' and is labeled as a 'Dataset' with 'Open Access' status. The title of the upload is 'Real-time optical and electronic sensing with a  $\beta$ -amino enone linked, triazine-containing 2D covalent organic framework'. The authors listed are Kulkarni, Ranjit; Noda, Yu; Barange, Deepak K.; Kochergin, Yaroslav S.; Balcarova, Barbora; Lyu, Pengbo; Nachtigal, Petr; and Bojdys, Michael J. A 'View' button is located to the right of the upload details. Below the author list, there is a brief description: '[This repository contains the source data for the manuscript "Real-time optical and electronic sensing with a  $\beta$ -amino enone linked, triazine-containing 2D covalent organic framework"...'.

<https://zenodo.org> – per dati e altri contenuti, associa DOI a tutto il materiale



# Protocols

protocols.io

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8/10 > 2h 31m

<https://www.protocols.io> – per creare e condividere (via DOI) protocolli di ricerca

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Subject search and browse:



Search

Form Interface

Catchup

14 Jun 2019: **Attention Users:** there will be intermittent service disruptions on Sunday, June 16 due to [network maintenance](#)

12 Jun 2019: [We are hiring: Executive Director of arXiv](#)

11 Jun 2019: [Announcing a new category and category mergers](#)

20 May 2019: [We are hiring: arXiv Service Reliability Engineer](#)

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<https://arxiv.org> – preprint server (uno dei primi sviluppati)

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<https://peerj.com/preprints/> – preprint server (assegna DOI ai preprint)

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### Additions and Updates



- [Ediciones de la Universidad de Valladolid](#) - Ediciones de la Universidad de Valladolid - 04-Dec-2018
- [Springer \(part of Springer Nature\)](#) - Springer (part of Springer Nature) - 26-Sep-2018
- [Nature Research \(part of Springer Nature\)](#) - Nature Research (part of Springer Nature) - 20-Sep-2018

<https://www.sherpa.ac.uk/romeo/> – copyright e preprint policy delle riviste

# DOAJ



The image shows a screenshot of the DOAJ website homepage. At the top left is the logo "DOAJ" in orange, followed by the text "DIRECTORY OF OPEN ACCESS JOURNALS" in black. Below the logo is a navigation bar with orange background and white text for "Home", "Search", "Browse Subjects", "Apply", "News", "About", "For Publishers", and "API". The "Home" link is highlighted. Below the navigation bar is a large search box with the placeholder text "Search DOAJ" and a magnifying glass icon. Underneath the search box are two checked radio buttons for "journals" and "articles", and a link for "[Advanced Search]". Below the search box is a section titled "DOAJ (Directory of Open Access Journals)" in bold. The text below the title describes DOAJ as a community-curated online directory that indexes and provides access to high quality, open access, peer-reviewed journals. It mentions that DOAJ is independent, funded by donations (40% from sponsors and 60% from members and publisher members), and that all services are free of charge. It also states that DOAJ operates an education and outreach program across the globe, focusing on improving the quality of applications submitted. At the bottom of this section is a link "Why index your journal in DOAJ?".

**DOAJ (Directory of Open Access Journals)**

DOAJ is a community-curated online directory that indexes and provides access to high quality, open access, peer-reviewed journals. DOAJ is independent. All funding is via donations, 40% of which comes from [sponsors](#) and 60% from [members and publisher members](#). All DOAJ services are free of charge including being indexed in DOAJ. All data is freely available.

DOAJ operates an education and outreach program across the globe, focussing on improving the quality of applications submitted.

[Why index your journal in DOAJ?](#)

<https://doaj.org> – elenco delle riviste Open Access e eventuali costi associati

# OpenCitations

OpenCitations



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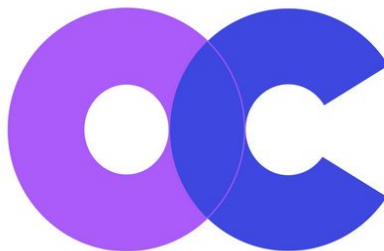
Sparql

Search

Oci

Publications

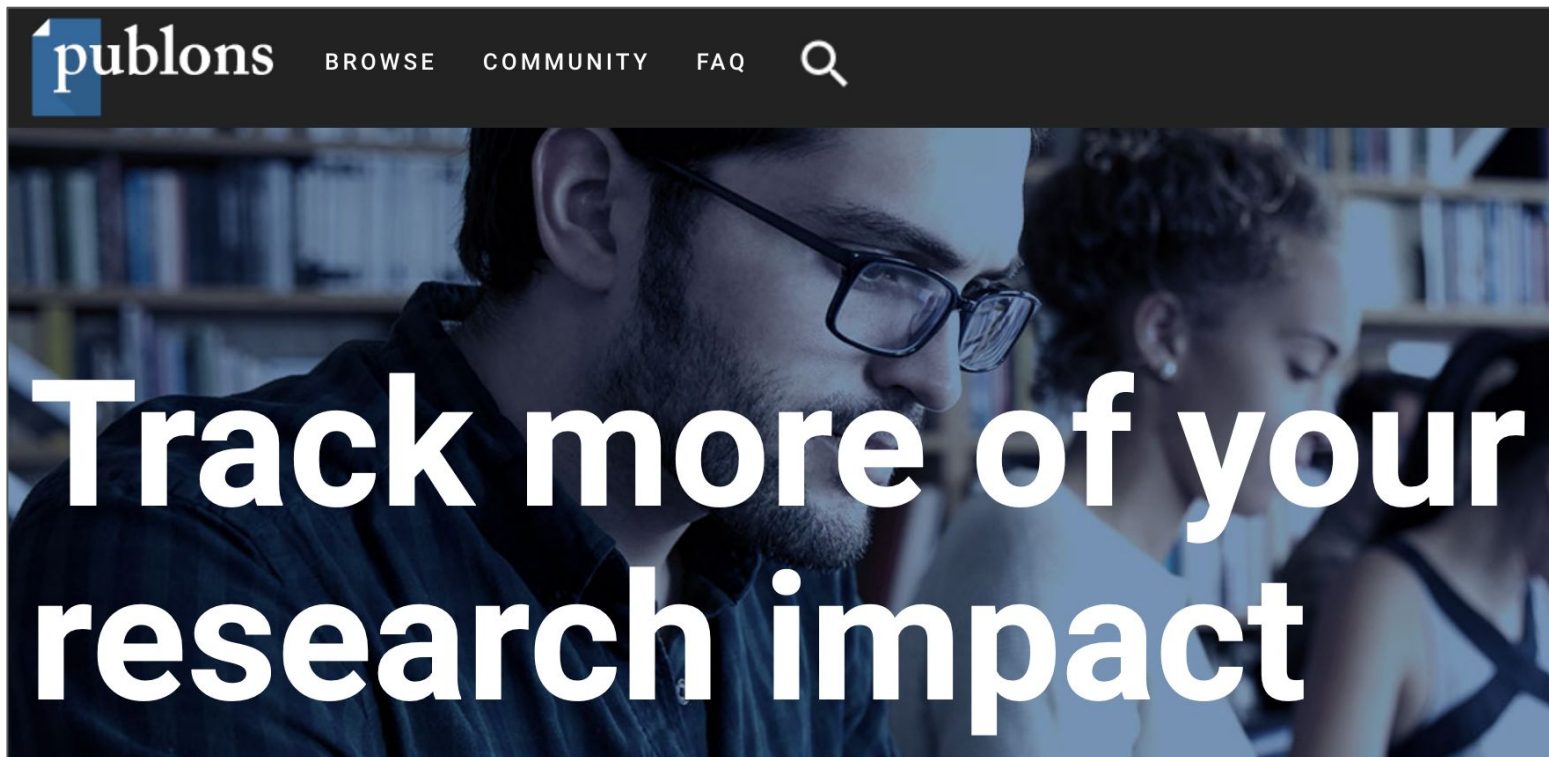
Licenses



Welcome to the [OpenCitations](#) homepage!

<http://opencitations.net> – Open Data di citazioni e relativi servizi

# Publons

The image shows the top portion of the Publons website. At the top left is the Publons logo, which consists of a blue square containing a white 'P' followed by the word 'publons' in a lowercase, sans-serif font. To the right of the logo are four navigation links: 'BROWSE', 'COMMUNITY', 'FAQ', and a magnifying glass icon representing a search function. Below the navigation bar is a large banner image with a blue tint. The image depicts a man with glasses and a beard looking at a screen, with a woman partially visible behind him. Overlaid on this image is the text 'Track more of your research impact' in a large, bold, white sans-serif font.

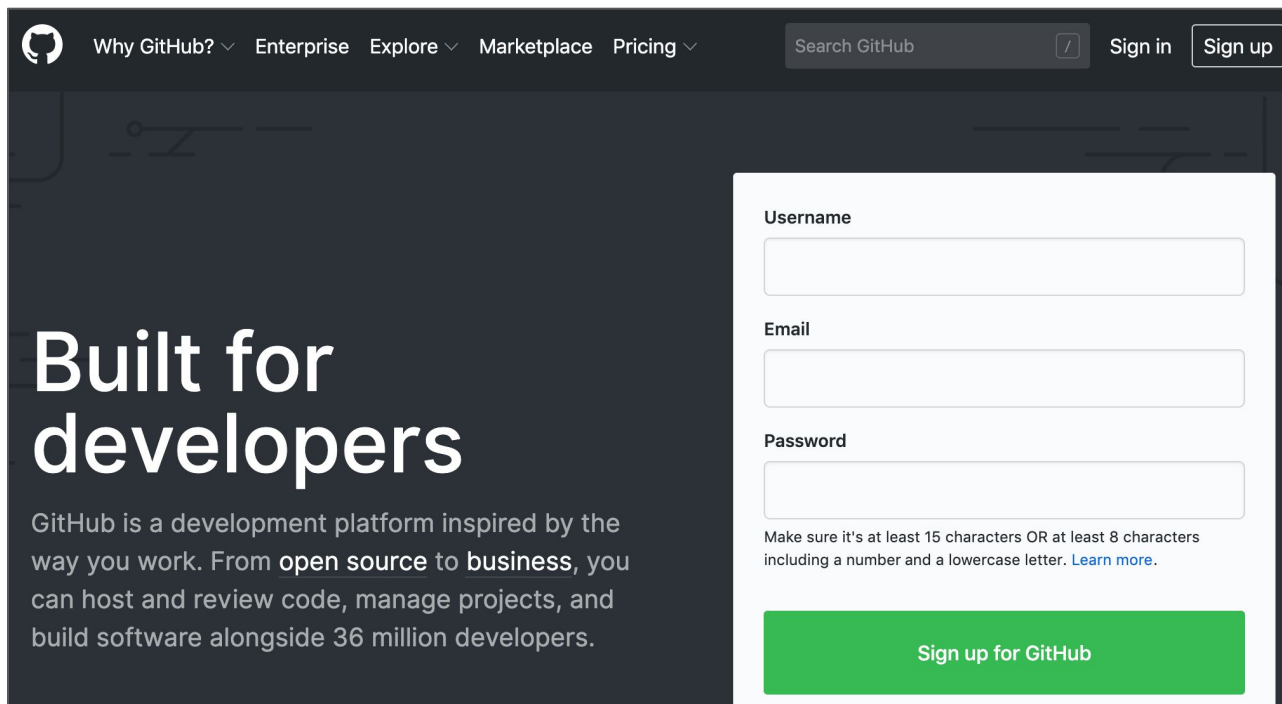
**publons** BROWSE COMMUNITY FAQ 🔍

# Track more of your research impact

<https://publons.com> – Piattaforma per salvare le proprie peer review



# GitHub



The image shows a screenshot of the GitHub website's sign-up page. The page has a dark background with a white sign-up form on the right. The form contains three input fields: Username, Email, and Password. Below the Password field, there is a note about password requirements: "Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)". At the bottom of the form is a green button labeled "Sign up for GitHub". The top navigation bar includes the GitHub logo, links for "Why GitHub?", "Enterprise", "Explore", "Marketplace", and "Pricing", a search bar, and "Sign in" and "Sign up" buttons.

Why GitHub? ▾ Enterprise Explore ▾ Marketplace Pricing ▾ Search GitHub / Sign in Sign up

## Built for developers

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside 36 million developers.

**Username**

**Email**

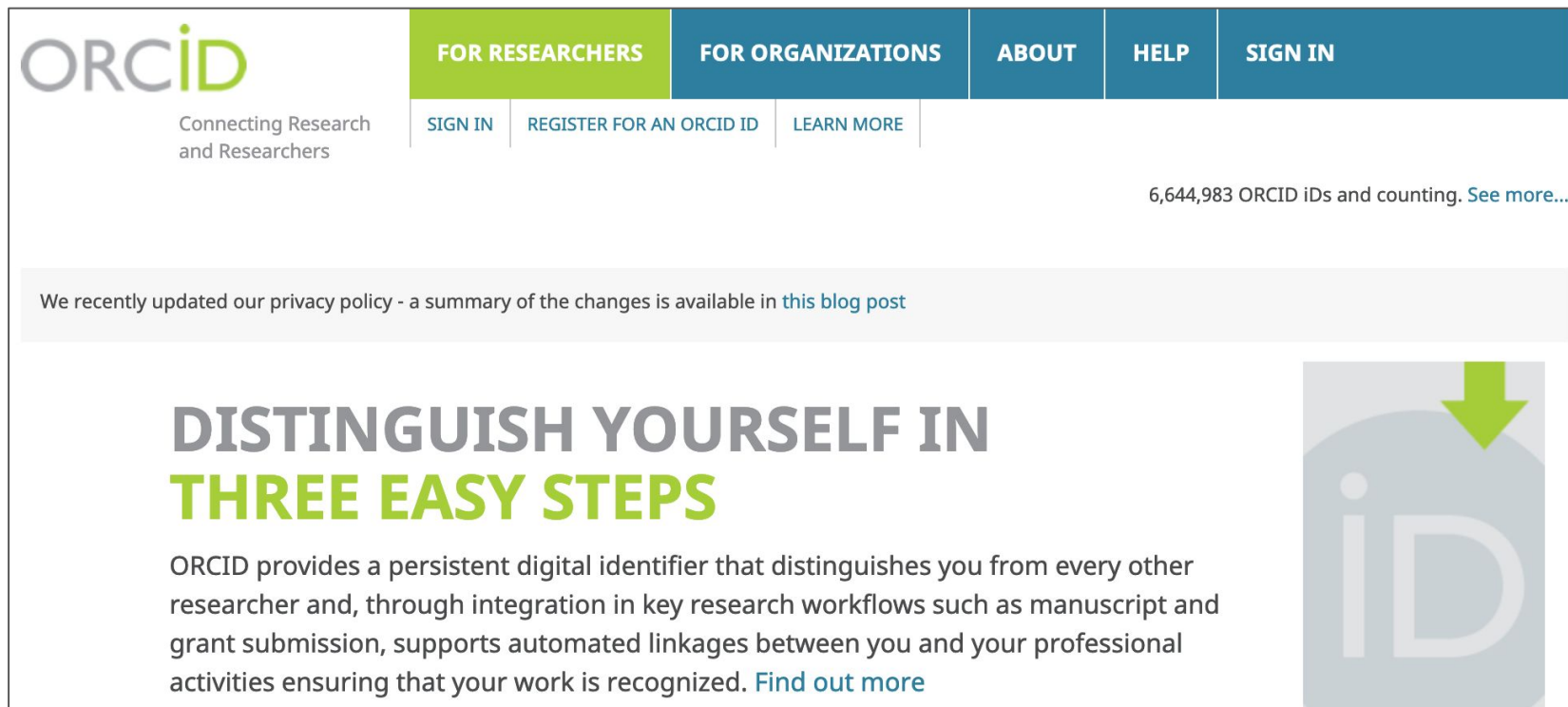
**Password**

Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)

Sign up for GitHub

<https://github.com> – Piattaforma per salvare software e per tenere traccia della sua evoluzione

# ORCID



The screenshot shows the ORCID website homepage. At the top left is the ORCID logo with the tagline "Connecting Research and Researchers". To the right is a navigation bar with tabs for "FOR RESEARCHERS", "FOR ORGANIZATIONS", "ABOUT", "HELP", and "SIGN IN". Below the "FOR RESEARCHERS" tab are links for "SIGN IN", "REGISTER FOR AN ORCID ID", and "LEARN MORE". On the right side of the page, it states "6,644,983 ORCID iDs and counting. See more...". A light gray banner below the navigation bar contains the text: "We recently updated our privacy policy - a summary of the changes is available in [this blog post](#)". The main content area features a large heading: "DISTINGUISH YOURSELF IN THREE EASY STEPS", where "THREE EASY STEPS" is in green. Below this is a paragraph: "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. [Find out more](#)". To the right of the text is a graphic of a person's silhouette with a green arrow pointing down to the letters "id".

ORCID  
Connecting Research  
and Researchers

FOR RESEARCHERS FOR ORGANIZATIONS ABOUT HELP SIGN IN


SIGN IN REGISTER FOR AN ORCID ID LEARN MORE

6,644,983 ORCID iDs and counting. [See more...](#)

We recently updated our privacy policy - a summary of the changes is available in [this blog post](#)

## DISTINGUISH YOURSELF IN THREE EASY STEPS

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. [Find out more](#)



<https://orcid.org> – identificatore univoco e metadati per persone e organizzazioni

Pratica

# Scopo dello studio

Analizzare tutte le riviste pubblicate dall'Università di Bologna, elencate in <https://journals.unibo.it/riviste/> per capire quante di queste:

1. sono effettivamente riviste Open Access in base alla definizione di "open" introdotta dalla Open Definition
2. specificano esplicitamente la licenza dell'articolo nei vari formati (es. PDF e HTML) in cui l'articolo è messo a disposizione

# Fase 1: raccolta dati



**AlmaDL**Journals  
Open Access Scientific Journals

by AlmaDL University of Bologna Digital Library

Entrare nel sito web delle riviste pubblicate dall'Università di Bologna, <https://journals.unibo.it/riviste/>



Organizzarsi in gruppi da due persone e identificare quali riviste sono di propria competenza

	A	B	C	D	E	F	G	H
1	Rivista	ISSN	Dichiarato OA	Licenza	OAT	Formato	Licenza per formato	Note
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
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14								
15								
16								
17								
18								

Compilare lo spreadsheet con i dati delle riviste analizzate

Pubblicare i dati raccolti su Zenodo



# Tabella da compilare

<https://tinyurl.com/open-sci-seminar-2019-06-data>

È una tabella di spreadsheet fatta con Google Docs, che può essere modificata da tutti, anche da chi non ha delle credenziali Google, e contiene i seguenti campi

- **Rivista:** il nome della rivista
- **ISSN:** l'ISSN della rivista, che permette di identificarla univocamente
- **Dichiarato OA:** specifica se la rivista si autodichiara Open Access
- **Licenza:** il tipo di licenza associata agli articoli della rivista
- **OA?:** specifica se la licenza associata è conforme alla Open Definition
- **Formato:** i formati in cui gli articoli sono messi a disposizione
- **Licenza per formato:** i formati in cui la licenza è chiaramente specificata
- **Note:** delle note aggiuntive testuali, se necessarie

# Clausole Creative Commons

0: Donazione al Pubblico Dominio

BY: attribuzione

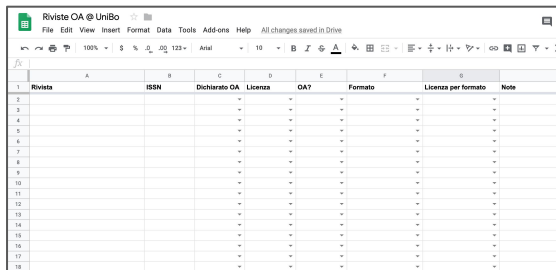
SA: condividi allo stesso modo

NC: non commerciale

ND: no opere derivate

(le clausole in **rosso** non sono conformi con la Open Definition)

# Fase 2: scrittura articolo

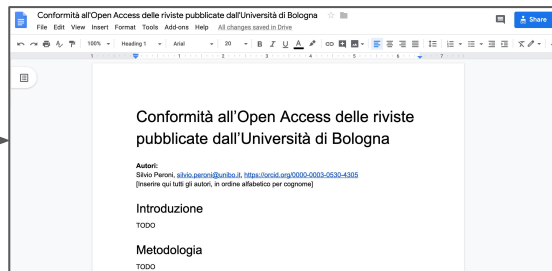


	A	B	C	D	E	F	G
1	Rivista	ISSN	Dichiarato OA	Licenza	OA?	Formato	Licenza per formato
2							
3							
4							
5							
6							
7							
8							
9							
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17							
18							

Recuperare i dati salvati precedentemente nella tabella disponibile a <https://tinyurl.com/open-sci-seminar-2019-06-data>



Organizzarsi in 4 gruppi di persone, ove ogni gruppo è responsabile per la scrittura di una specifica sezione dell'articolo



Scrivere l'articolo, aggiungendo gli opportuni riferimenti (ad esempio ai dati precedenti) ove necessario

Pubblicare l'articolo su Zenodo





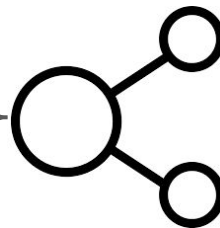
# Articolo da scrivere

<https://tinyurl.com/open-sci-seminar-2019-06-paper>

È un documento fatto con Google Docs, che può essere modificato da tutti, anche da chi non ha delle credenziali Google, ed è suddiviso in 5 sezioni:

1. **Introduzione:** si introduce lo studio che è stato fatto e le motivazioni che lo caratterizzano
2. **Metodologia:** si spiega qual è stato il processo per la raccolta dei dati dello studio
3. **Risultati:** si introducono i dati ottenuti, eventualmente presentati raggruppati
4. **Discussione:** si discutono i risultati, per fare emergere punti di forza e criticità
5. **Bibliografia:** la lista delle risorse citate nell'articolo

# Fase 3: divulgazione risorse



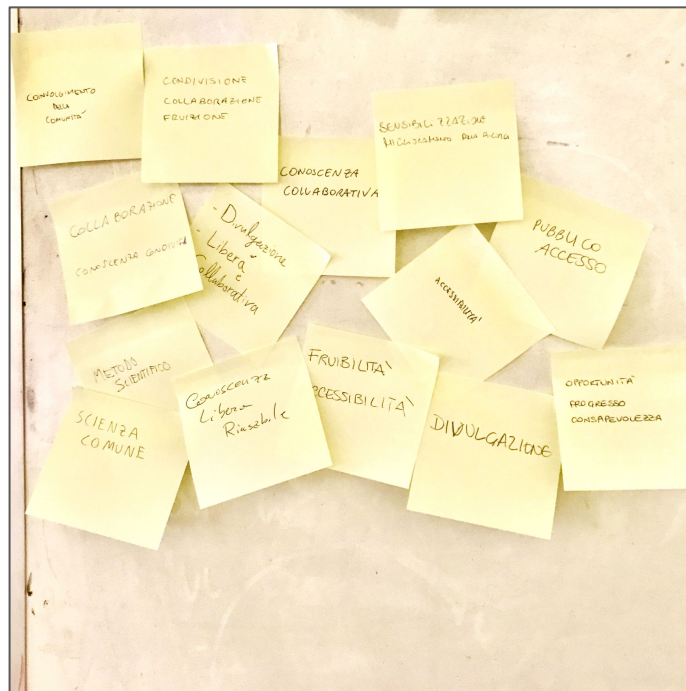
Spedire una serie di email a persone potenzialmente interessate allo studio fatto

Condividere le risorse caricate su Zenodo mediante i social network, ad esempio Twitter

# Per concludere

Descrivete con una, massimo due parole quel che vi evoca il concetto di *Open Science*

Foto delle parole indicate dai partecipanti al seminario



# Grazie per l'attenzione

Open Science e Open Access nelle Scienze (Umane e non solo)

Silvio Peroni

<https://orcid.org/0000-0003-0530-4305>

Digital Humanities Advanced Research Centre (DHARC),  
Dipartimento di Filologia Classica e Italianistica (FICLIT), Università di Bologna, Bologna, Italia  
[silvio.peroni@unibo.it](mailto:silvio.peroni@unibo.it) – [@essepuntato](https://www.unibo.it/sitoweb/silvio.peroni/en) – <https://www.unibo.it/sitoweb/silvio.peroni/en>

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Aula Affreschi, Università di Bologna, Bologna, Italia  
<https://github.com/open-sci/seminar-2019-06>

