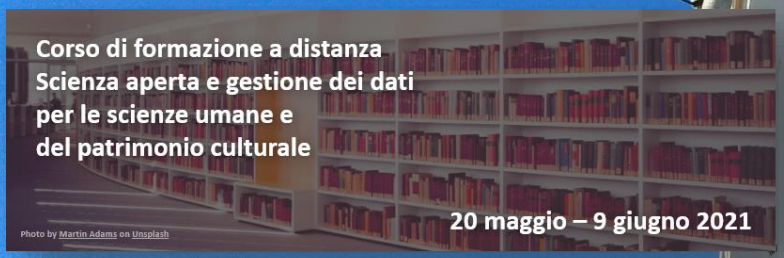
Open Science in pratica



Elena Giglia
elena.giglia@unito.it
@egiglia

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1 DOMANDA

PERCHÉ FATE RICERCA?

… Open Science è

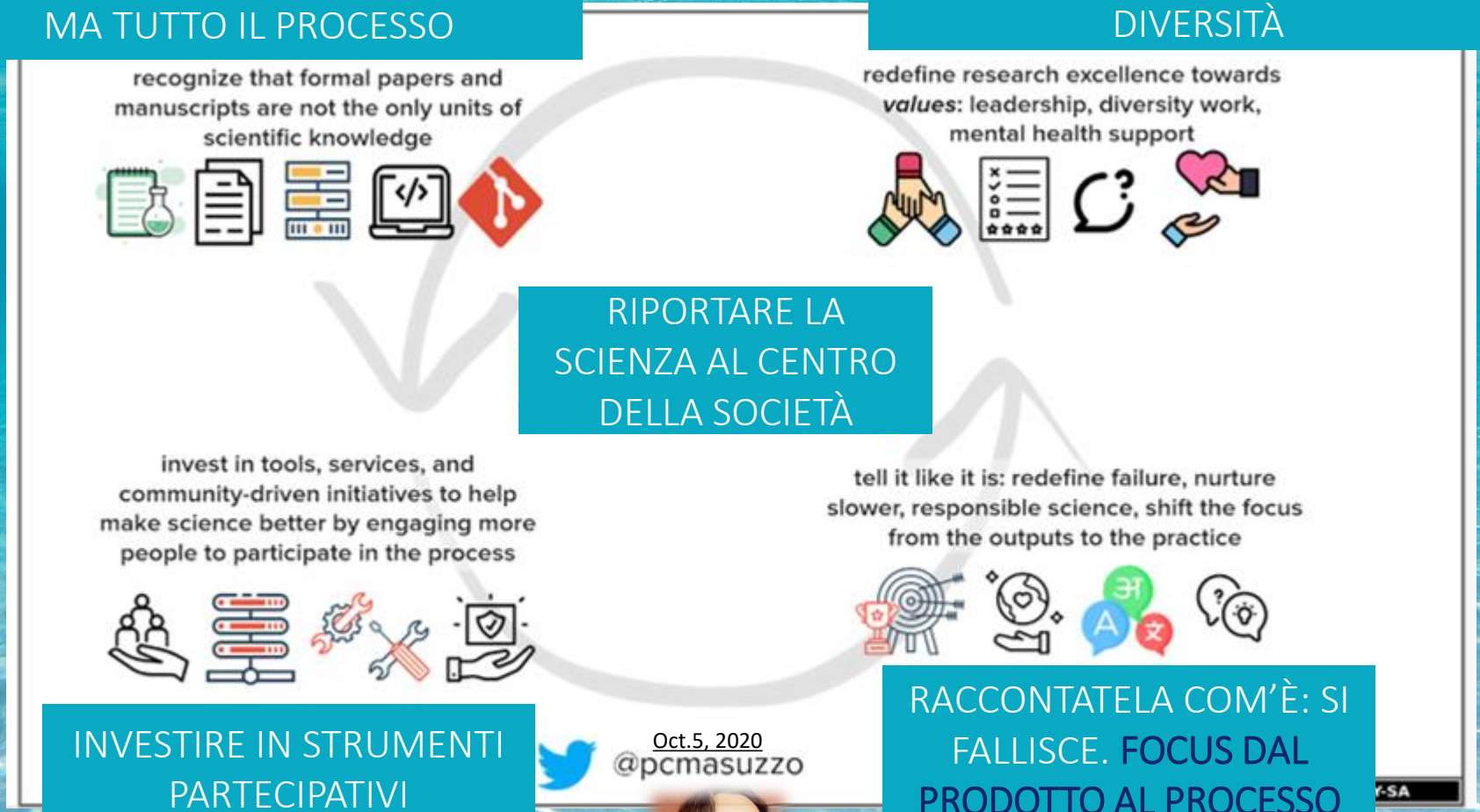
OGGI VEDREMO COSA È POSSIBILE FARE IN OPEN SCIENCE

UNESCO

…ricordate?

«PRODOTTO DELLA RICERCA»: NON SOLO LA SINTESI FINALE (ARTICOLO) MA TUTTO IL PROCESSO

RIDEFINIRE «ECCELLENZA»: NUOVI VALORI SONO INCLUSIONE, DIVERSITÀ



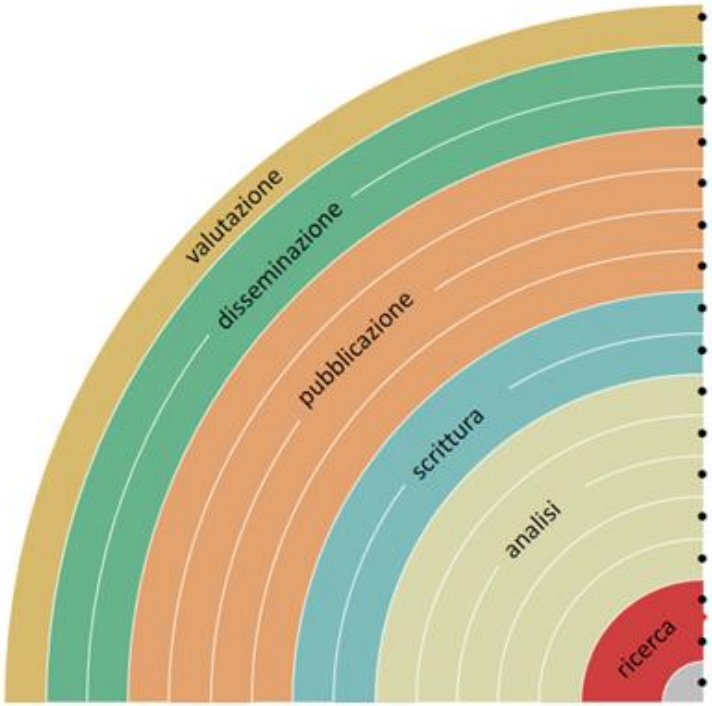
RIPORTARE LA SCIENZA AL CENTRO DELLA SOCIETÀ

INVESTIRE IN STRUMENTI PARTECIPATIVI

RACCONTATELA COM'È: SI FALLISCE. FOCUS DAL PRODOTTO AL PROCESSO

Come rendere Open ogni passo della ricerca...

OS rainbow



- aggiungendo misure di impatto alternative, es. altmetrics
- comunicando sui social media, es. Twitter
- condividendo poster e presentazioni, es. su FigShare
- utilizzando licenze aperte, es. Creative Commons BY
- depositando in archivi o pubblicando su riviste Open
- provando la open peer review, es. PubPeer o F1000
- condividendo preprints, su OSFpreprint, arXiv o biorXiv
- con formati leggibili dalle macchine, es. Jupyter o CoCalc
- con la scrittura collaborativa, es. Overleaf o Authorea
- condividendo protocolli e workflow, es. su Protocols.io
- condividendo note di laboratorio, es. OpenLabNotebook
- condividendo software, es. su GitHub con licenza GNU/MIT
- condividendo i dati, es. su Dryad, Zenodo o Dataverse
- pre-registrando esperimenti, es. OSFregistry o AsPredicted
- commentando pagine web, es. su Hypothes.is o Pund.it
- usando bibliografie condivise, es. su Zotero
- condividendo progetti di ricerca, es. su RIO Journal

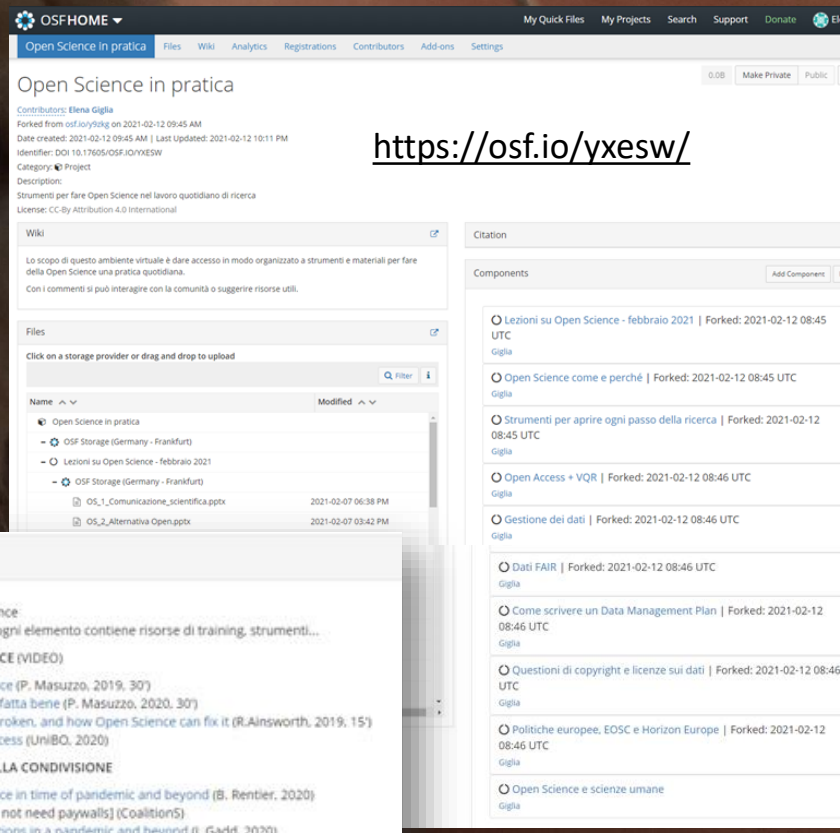
Bianca Kramer & Jeroen Bosman https://101innovations.wordpress.com DOI: 10.5281/zenodo.1147025 Traduzione: Elena Giglia DOI: 10.5281/zenodo.1195648

SI PUÒ FARE SEMPRE!

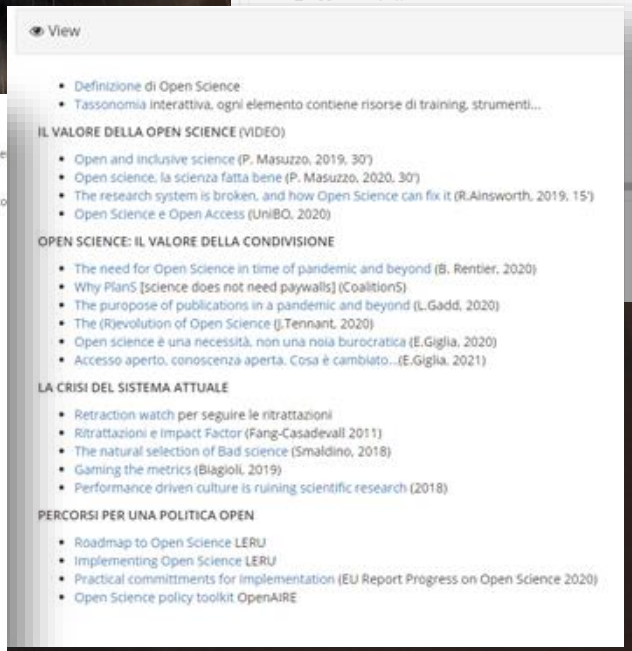
NONOSTANTE I CRITERI ATTUALI DI VALUTAZIONE.

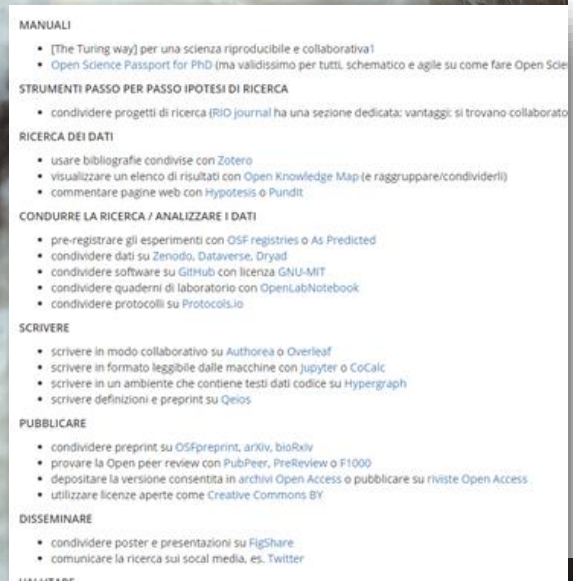
ANZI...ORA HORIZON EUROPE RICHIEDE DI DECLINARE QUESTE PRATICHE NELLA «ECCELLENZA SCIENTIFICA»

...tutti i link



https://osf.io/yxesw/

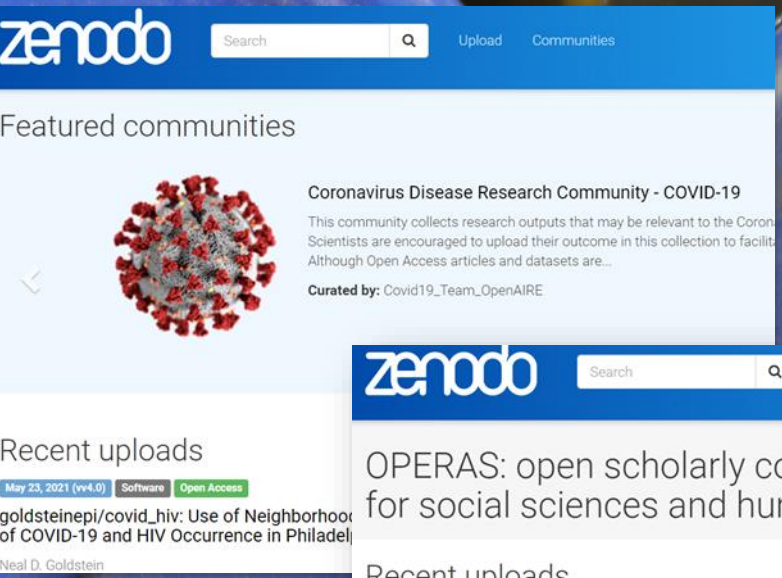


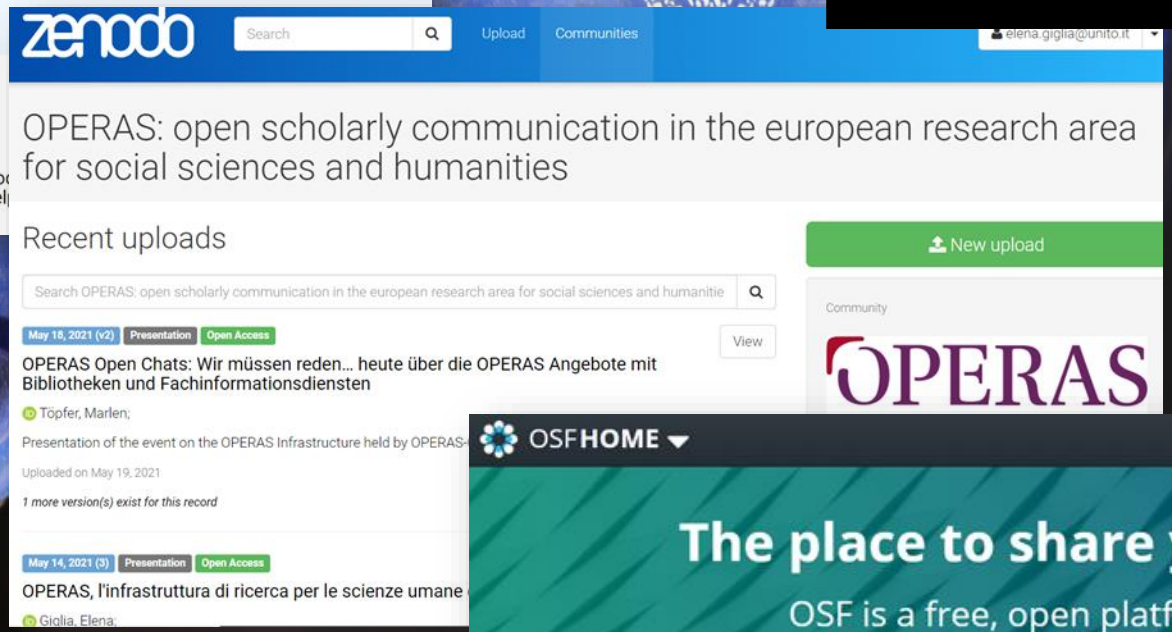


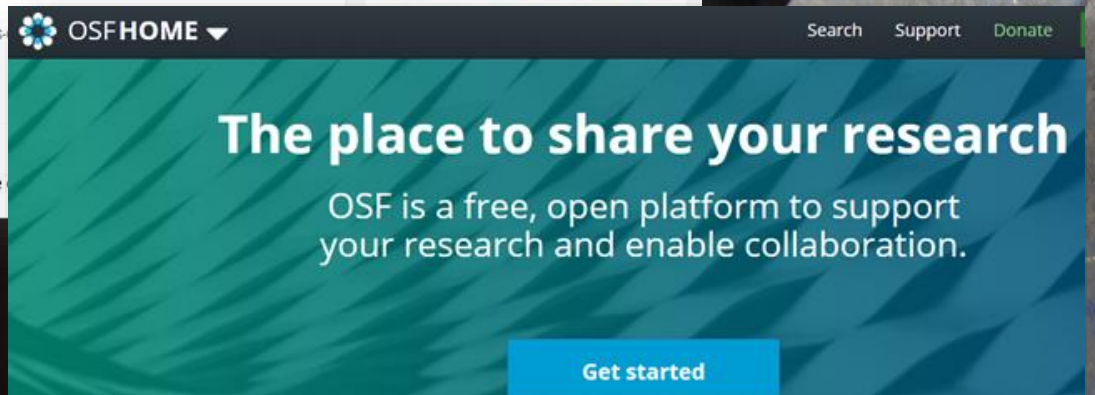
Una ricetta semplice / 1

CREATE UNA COMUNITÀ IN ZENODO (O IN OSF) CON IL NOME DEL PROGETTO E POI DEPOSITATE TUTTO:

- TESTI
- DATI
- SOFTWARE
- PRESENTAZIONI A CONVEGNI
- VIDEO O VIDEO ABSTRACT
- IMMAGINI…

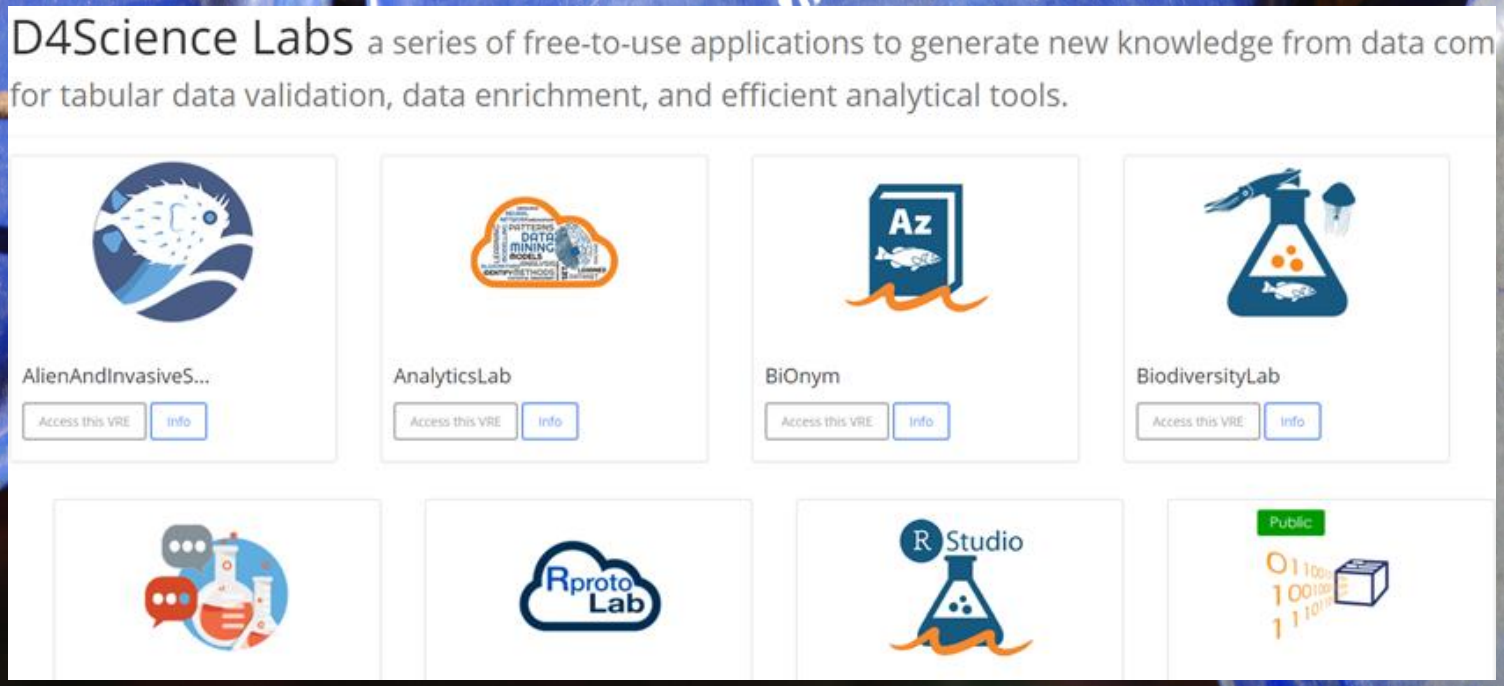






Una ricetta semplice / 2

CREATE UN VRE-VIRTUAL RESEARCH ENVIRONMENT (CNR ISTI OFFRE SERVIZI IN QUESTO SENSO)



Una ricerca riproducibile

The Turing way

The Turing Way

Search this book...

- Welcome
- Guide for Reproducible Research
- Guide for Project Design
- Guide for Communication
- Guide for Collaboration
- Guide for Ethical Research
- Community Handbook
- Afterword

Visit our GitHub Repository
This book is powered by Jupyter Book

Welcome

The Turing Way is an open source community-driven guide to reproducible, ethical, inclusive and collaborative data science.

Our goal is to provide all the information that data scientists in academia, industry, government and the third sector need at the start of their projects to ensure that they are easy to reproduce and reuse at the end.

The book started as a guide for reproducibility, covering version control, testing, and continuous integration. However, technical skills are just one aspect of making data science research "open for all".

In February 2020, *The Turing Way* expanded to a series of books covering reproducible research, project design, communication, collaboration, and ethical research.

PRATICHE DI RIPRODUCIBILITÀ

OS-CAM, the Career Assessm… Matrix

MATRICI

- DIVERSIFICAZIONE CARRIERE
- RISPETTA INDIVIDUI E LAVORO DI TEAM
- ENFASI SULLA QUALITÀ
- INCORAGGIA OPEN SCIENCE
- INCORAGGIA LEADERSHIP

RICCHEZZA DI ESEMPI…FUORI ITALIA CI SI MUOVE

	R1	R2	R3
Research output	+	++	+++
Research Process	+	+++	++++
Service & Leadership		+	+++
Research Impact	+	++	+++
Teaching			

2017

Evaluation of Research Careers fully acknowledging Open Science Practices

Rewards, incentives and/or recognition for researchers practicing Open Science

START
- Not with what others' value (external drivers)
- Not with available data sources (the 'Streetlight Effect')

CONTEXT considerations
- WHO are you evaluating? (Entity size)
- WHY are you evaluating?
- Do you need to evaluate at all?

OPTIONS for ev…
- Consider bo…
- Be careful w…
- Evaluate wi…

PROBE deeply
- WHO might your evaluation approach discriminate against?
- HOW might your evaluation approach be gamed?
- WHAT might the unintended consequences be?
- Does the cost outweigh the benefit?

EVALUATE your evaluation
- Did your evaluation achieve its aims?
- Was it formative as well as summative?

A «COSA» SI DÀ VALORE E SI VALUTA

DORA @DORAssessment · 5h

The Luxembourg National Research Fund (@FnrLux) is developing an action plan for responsible research assessment, which includes the introduction of a narrative CV format based on the @royalsociety Resume for Researchers. Read about their process:

…Luxembourg National Research Fund develops an …
…The Declaration on Research Assessment (DORA) …recognizes the need to improve the ways in which …
sfdora.org

May 16, 2021

CV NARRATIVO

1. Start with what you value
2. Context considerations
3. Options for evaluating
4. Probe deeply
5. Evaluate

DORA

The Declaration Signers

Reimagining academic assessment: stories of innovation and change

Case studies of universities and national consortia highlight key elements of institutional change to improve academic career as

Produced in collaboration with: eua EUROPEAN UNIVERSITY ASSOCIATION; SPARC Europe

- Tampere University, FINLAND
- University College London, UNITED KIN…
- Univer…, CHINA
- Ghent…, BELGIUM
- Univer…, NORWAY

TRIPLE: Team Spirit as the default approach to working in academia
2021

- IMPACT
- PROFESSIONAL PERFORMANCE
- RESEARCH
- EDUCATION
- LEADERSHIP
- TEAM

STEPS FOR REALISING THE VISION FOR FAIReR ASSESSMENTS 2021

1 MAKE IT MEANINGFUL → 2 MAKE IT POSSIBLE → 3 MAKE IT REWARDING

FAIReR ACADEMIC ASSESSMENTS

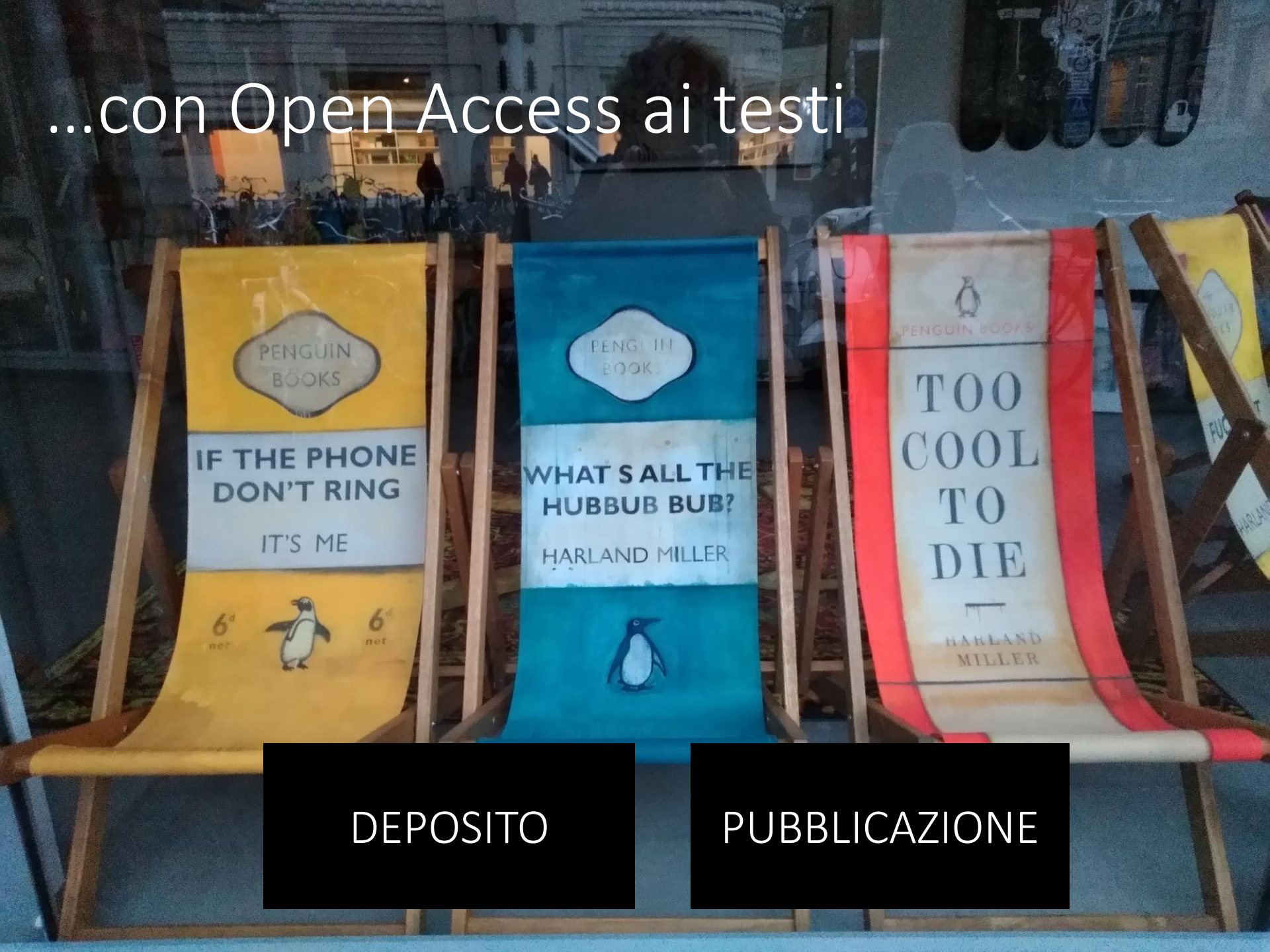
Recognise and value diversity and disciplinary differences of academic work	Diversity needs to be represented in information supporting assessment	Diversity of outputs, activities and missions need to be included among assessment criteria
• Outpu… • Missio… • Impact		

EXAMPLE RESEARCH DATA

Identify practices (e.g.):	Develop eInfrastructures for:	Reward researchers for (e.g.):
• Sharing research data • Creating FAIR data • Using open data • FAIR expertise	• Publishing and sharing research data • Integrating metadata and indicators for research data practices	• Sharing datasets • FAIR datasets • Data citations • Data stewardship

RICONOSCERE E VALUTARE LA DIVERSITÀ

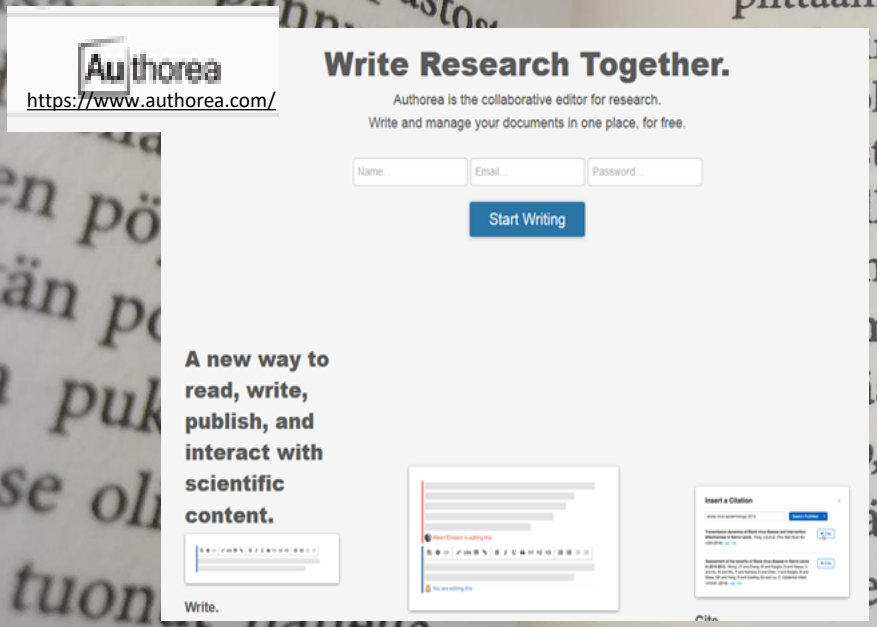
…con Open Access ai testi



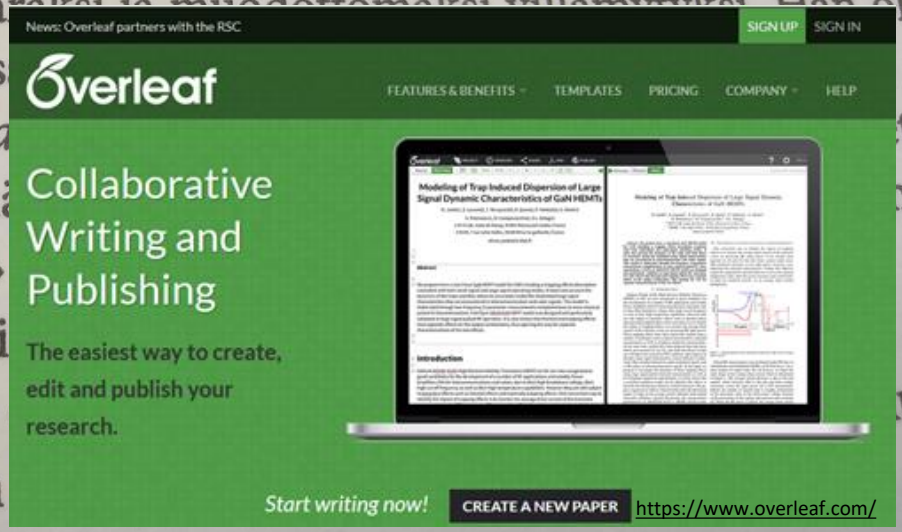
DEPOSITO

PUBBLICAZIONE

…scrivendo in modo diverso



https://www.authorea.com/

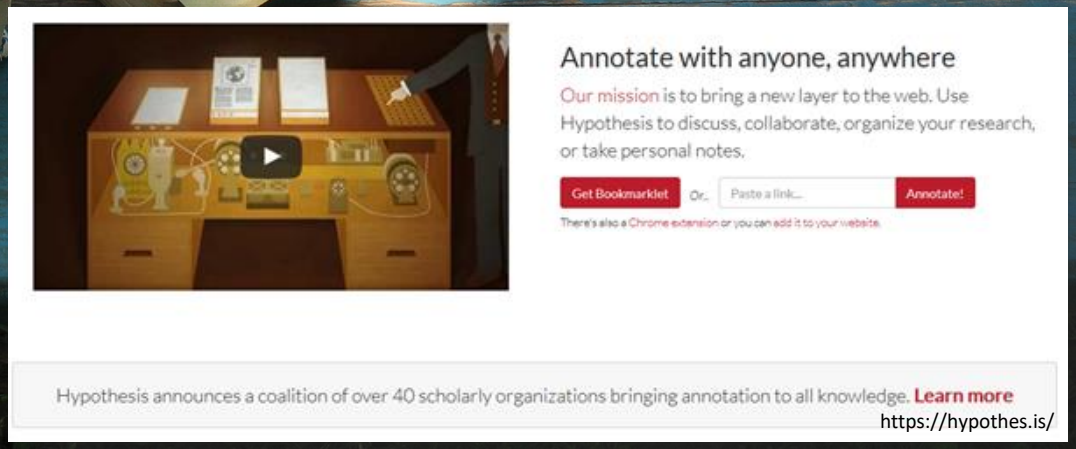


https://www.overleaf.com/

SCRITTURA COLLABORATIVA

...annotando

PundIT video



https://hypothes.is/

… con Open peer review

F1000Research Open for Science https://f1000research.com/articles/6-588/v1 SUBMIT YOUR RESEARCH

BROWSE GATEWAYS HOW TO PUBLISH ABOUT BLOG MY RESEARCH SIGN IN

Check for updates

SYSTEMATIC REVIEW

What is open peer review? A systematic review [version 1; referees: 1 approved, 3 approved with reservations]

Tony Ross-Hellauer

Author details

Grant information

METRICS 4555 VIEWS 1262 DOWNLOADS

Get PDF Get XML Cite Export Track Email

Open Peer Review

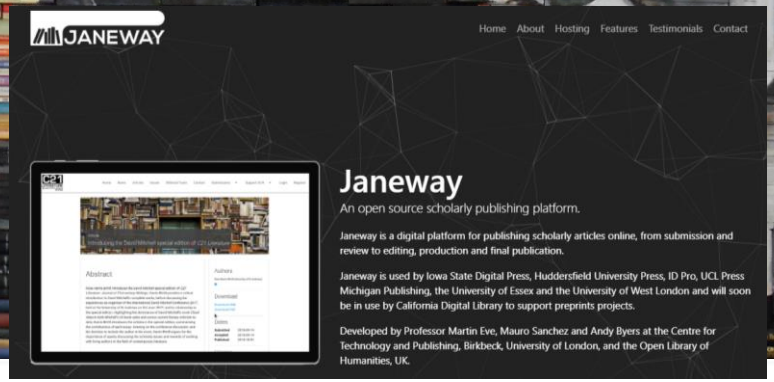
Referee Status: ✓ ✓ ✓ ✓

Version(s)	Invited Referees 1	2	3	4
REVISED Version 2 published 31 ago 2017		✓ read report	✓ read report	✓ read report
Version 1 published 27 apr 2017	✓ read report	? read report	? read report	? read report

1 **Richard Walker**, Swiss Federal Institute of Technology in Lausanne, Switzerland
2 **Theodora Bloom**, The BMJ, UK
3 **Bahar Mehmani**, RELX Group, Netherlands
4 **Emily Ford**, Portland State University, USA

- REVISIONI COME «PEZZI» DI CONOSCENZA
- HANNO UN DOI
- SONO CITABILI
- DEVONO ESSERE VALUTATE COME «PRODOTTI» DELLA RICERCA

Open peer review e scienze umane



Martin Paul Eve @martin_eve · 14 feb

The open peer review system that I baked into Janeway yesterday operates on an entirely opt-in system of consent. That is, journals have to enable it, then reviewers have to give permission. It is possible to say that reviews must be open but this all changes review dynamics.

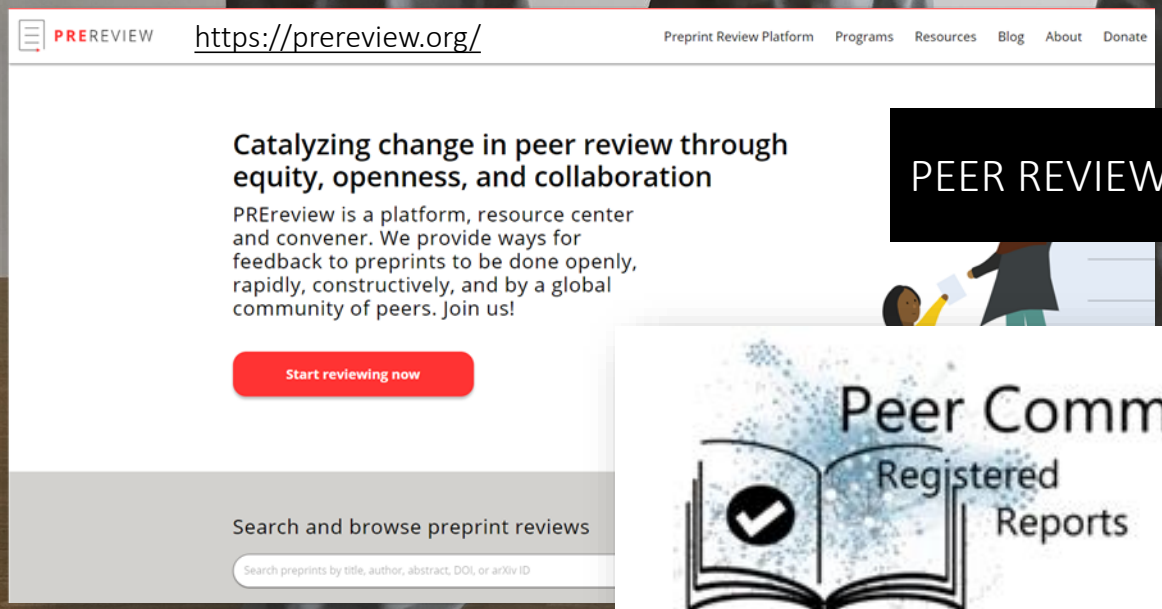
1 2 24

Martin Paul Eve @martin_eve · 14 feb

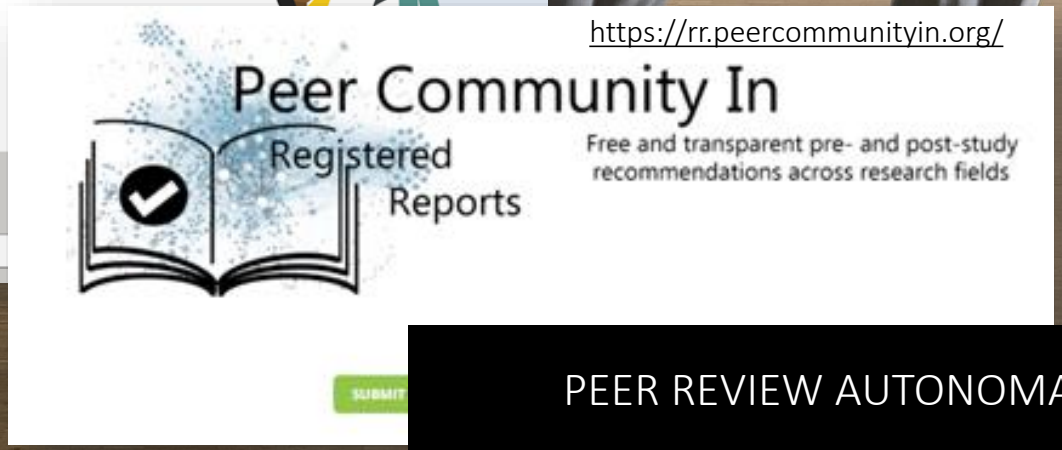
In a preprint world the open reviews, even if reject, may make more sense. If using a review system as a prefilter it is likely that this system will lead rather to a set of articles that are endorsed by reviewers - ie a bias towards showing positive reports.

Feb. 2021

… o peer review indipendente

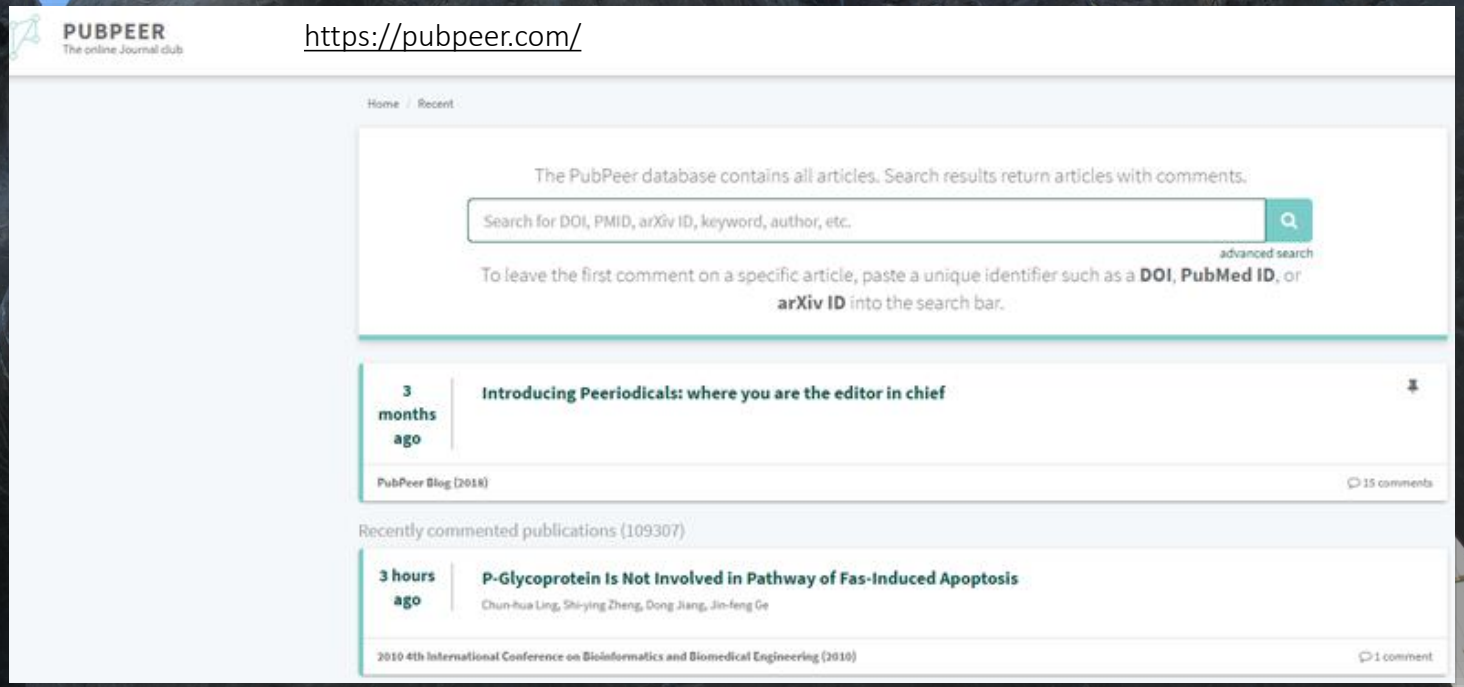


PEER REVIEW SUI PREPRINT

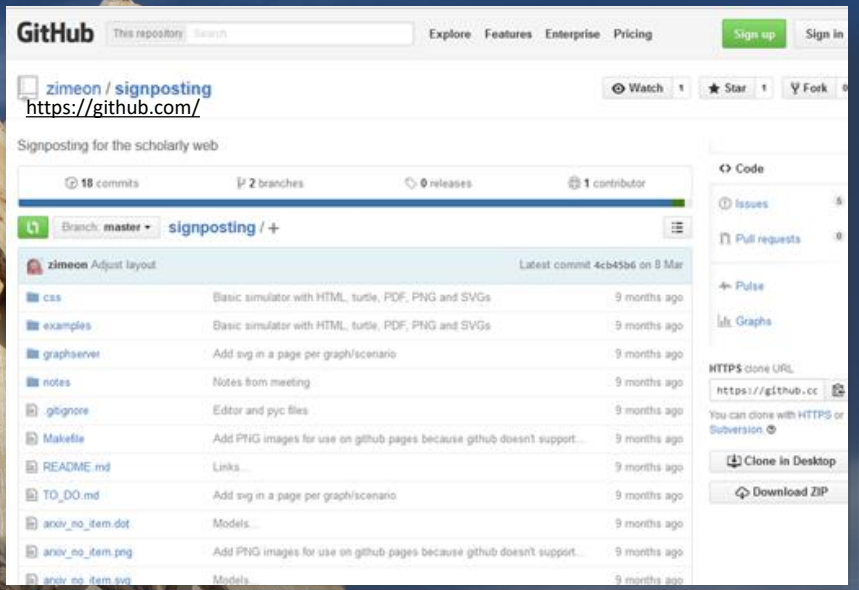


PEER REVIEW AUTONOMA

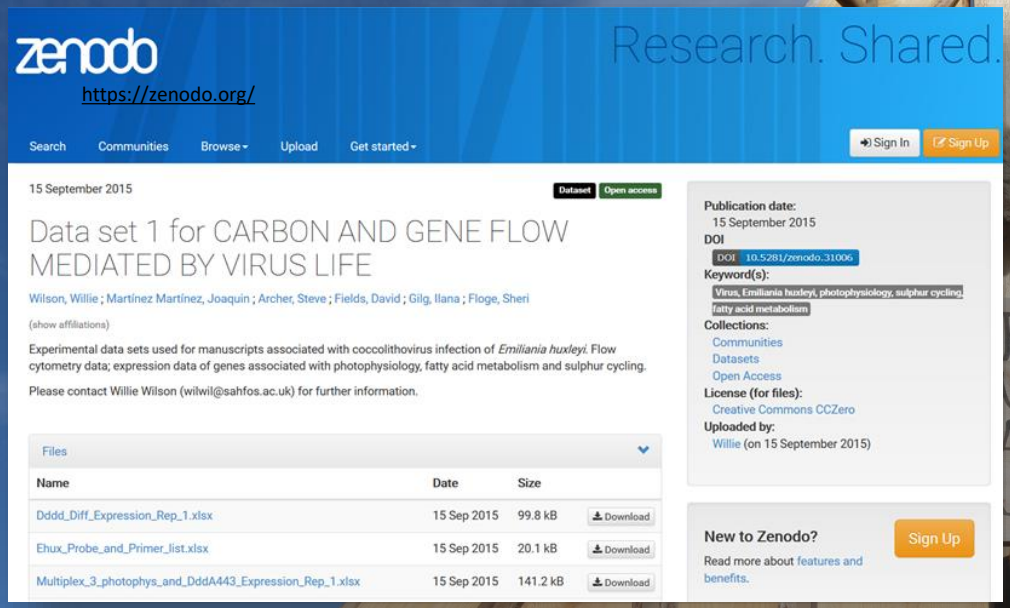
…o post-peer review



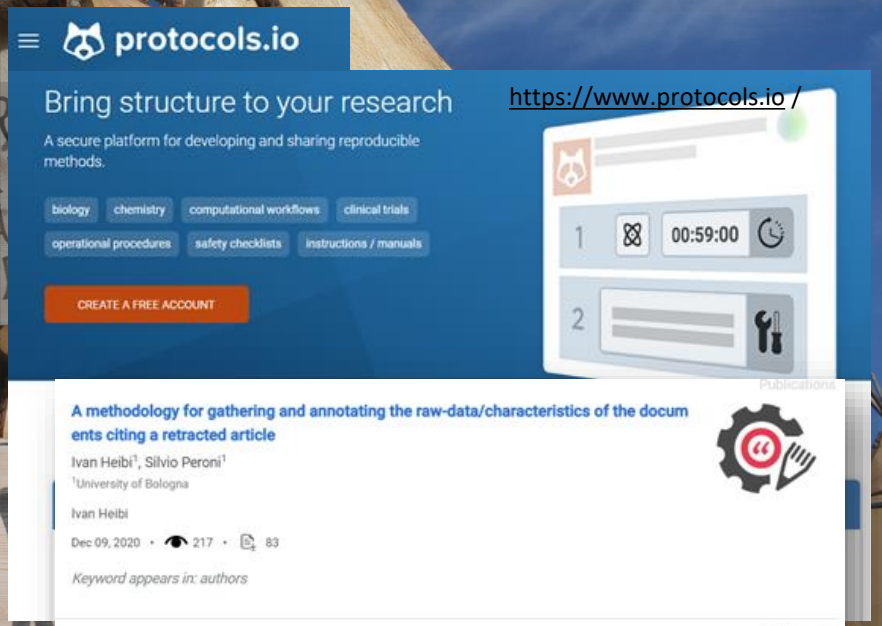
...non solo testi



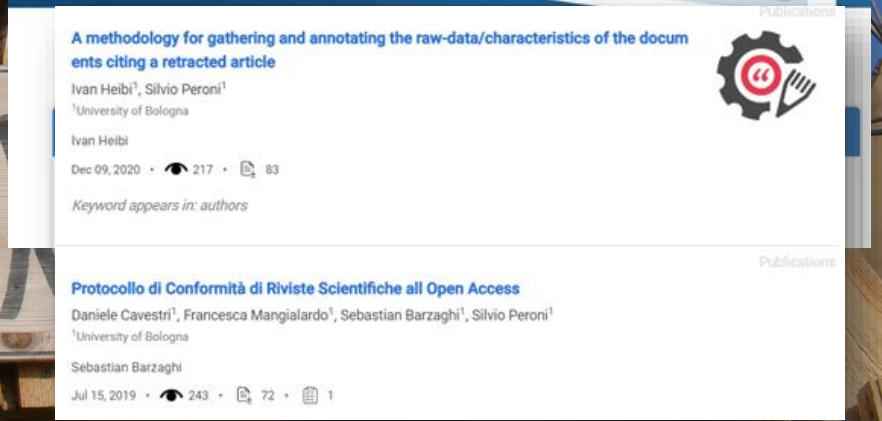
https://github.com/



https://zenodo.org/



https://www.protocols.io /



SI POSSONO DEPOSITARE DATI, SOFTWARE, IMMAGINI, POSTER, INTERI PROTOCOLLI... DIVENTANO «BLOCCHI» DI CONOSCENZA CHE POSSONO ESSERE RICHIAMATI E RIUSATI

… e non solo articoli

PREPRINT

PLOS COMPUTATIONAL BIOLOGY

May, 2017

OPEN ACCESS

EDITORIAL

Ten simple rules to con

Philip E. Bourne, Jessica K. Polka, Ronald D.

Published: May 4, 2017 • https://doi.org/10.137

- PUBBLICAZIONE IMMEDIATA DEI RISULTATI
- PRIORITÀ SCIENTIFICA
- ELIMINA IL «LIMBO» DI ATTESA POST SUBMISSION
- FOCUS SUL CONTENUTO E NON SUL CONTENITORE

OPEN SCIENCE «PARZIALE» PUÒ ESSERE DANNOSA
[PREPRINT SENZA DATI NON È VERIFICABILE]
VA APERTO TUTTO IL CICLO DELLA RICERCA: DATI, TESTI, CODICE, PREREGISTRANDO GLI ESPERIMENTI

Rule 1: Preprints speed up dissemination

Rule 2: Preprints should be licensed and formatted to facilitate reuse

Rule 3: Preprints provide a record of priority

Rule 4: Preprints do not lead to being scooped

Rule 5: Preprints provide access to scholarly content that would otherwise be lost

Rule 6: Preprints do not imply low quality

Rule 7: Preprints support the rapid evaluation of controversial results

Rule 8: Preprints do not typically preclude publication

Rule 9: Preprints can further inform grant review and academic advancement

Rule 10: Preprints—one shoe does not fit all

CULTURA E SCIENZA / APPROFONDIMENTO 30 sett 2020

Scienza aperta e Covid-19: che cosa non ha funzionato. Ma la condivisione è la strada giusta

di Giovanna Borrelli e Francesco Sparano — 30 Settembre 2020

How Science Beat the Virus

And what it lost in the process

Story by Ed Yong

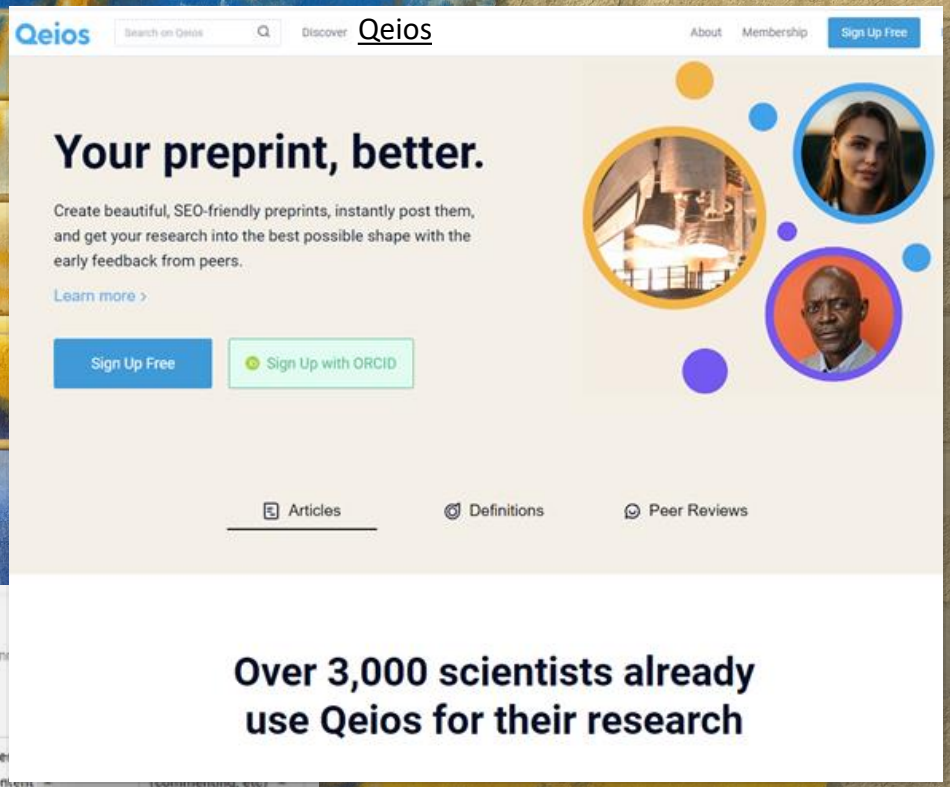
Dec.14, 2020

papers, or "preprints," to freely accessible websites, allowing others to immediately dissect and build upon their results. This practice had been slowly gaining popularity before 2020, but proved so vital for sharing information about COVID-19 that it will likely become a mainstay of modern biomedical research. Preprints accelerate science, and the pandemic accelerated the use of preprints. At

VITALI DURANTE LA PANDEMIA

[Preprint]

Qeios



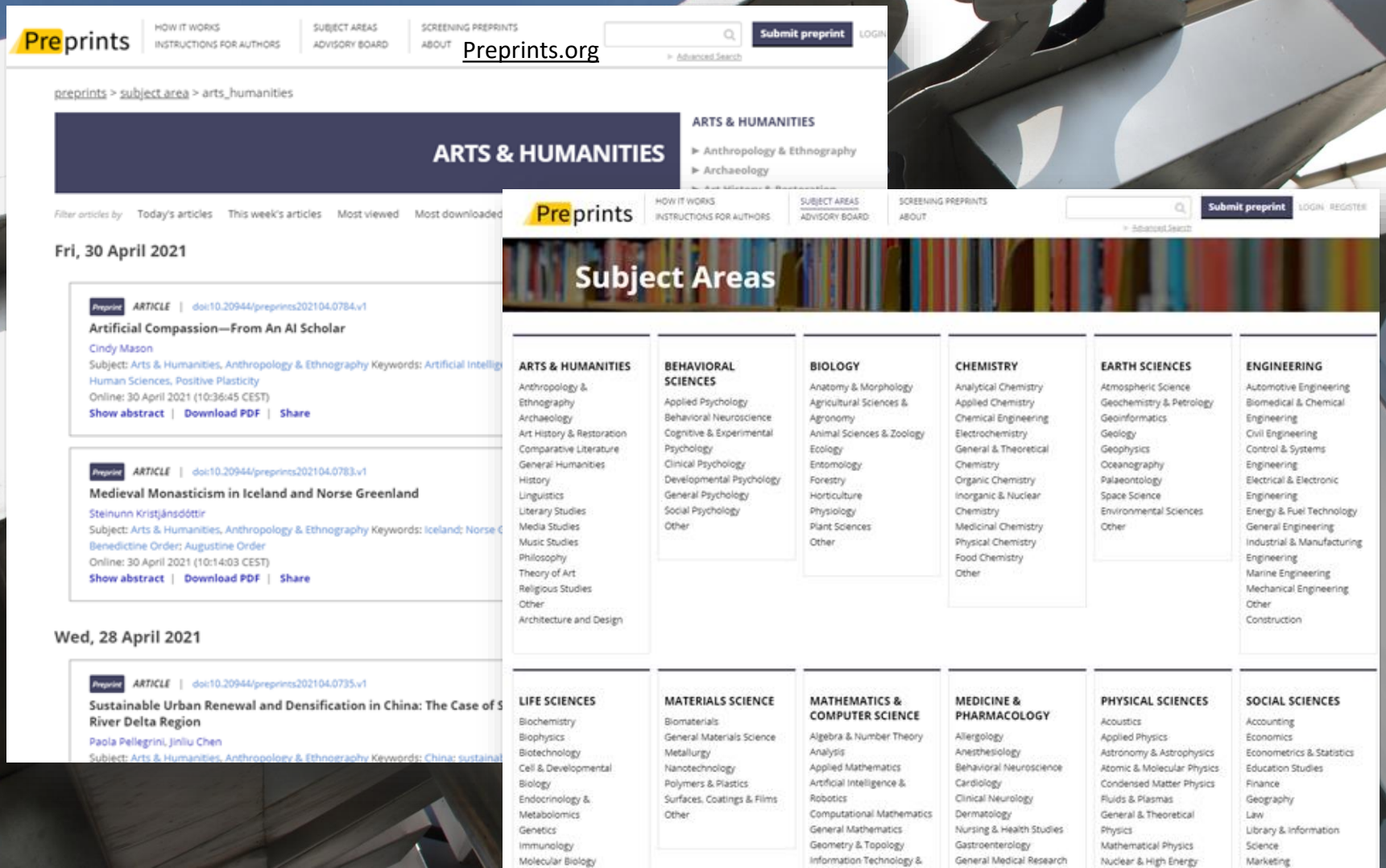
Directory Preprint server

Show 10 entries

Preprint server	Disciplinary scope	Ownership type	External content indexing	Permanence of content	Preservation of content	Versions
AAS Open Research	Multiple scientific fields, including health and wellbeing*	Funding organisation (funder)	Google Scholar, Prepubmed, Europe PMC, SciLit	Permanent with some removal options in extraneous circumstances	Preprints permanently archived in Portico	Commenting (including annotation plug-ins), Onsite search, Link to Google Scholar citations, Blog and gateways
AfricArxiv	All scientific fields	Academic community group; charity	Google Scholar, SHARE, Microsoft Academic, Unpaywall	Permanent with some removal options in extraneous circumstances	COS Preservation Fund to maintain read access for 50+ years	Commenting (including annotation plug-ins), Onsite search
AgriXiv	Relating to agriculture and allied sciences, including life sciences, medicine and health sciences, social and behavioural sciences	Academic community group	Google Scholar, SHARE, Microsoft Academic, Unpaywall	Permanent with some removal options in extraneous circumstances	COS Preservation Fund to maintain read access for 50+ years	Commenting (including annotation plug-ins), Onsite search
AMRC Open Research	Broad life & biomedical research, including basic scientific, translational, applied	Funding organisation (funder); Membership organisation	Google Scholar, Prepubmed, Europe PMC, SciLit			

SERVER PRE PRINT

[non solo nelle scienze esatte]



Preprints.org

…con dati FAIR

F METADATI, IDENTIFICATIVI PERSISTENTI…

A [**NON** = OPEN] REPOSITORIES, FORMATI

I ONTOLOGIE, STANDARDS

R LICENZE E DOCUMENTAZIONE

PRINCIPI FAIR

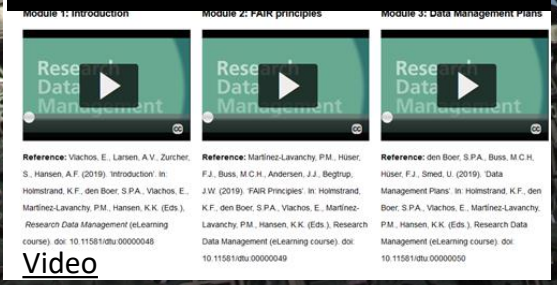
Comment | OPEN

The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson, Michel Dumontier […]

FAIR guide, Nature, March 2016

IN BREVE



Video

RECOMMENDATIONS

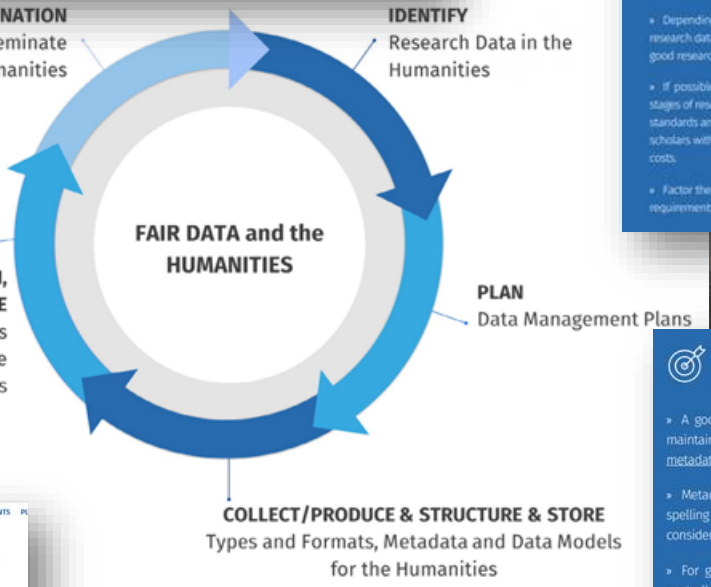
- Clarify all legal issues at the beginning of your research project and include the findings of this process in the data management plan.
- Use checklists adequate to your research topic/discipline.
- Check the resources indicated by DARIAH, CLARIN. (see further reading).
- In the case of personal data ensure that only relevant people can access the data and that these are clearly identified (see GDPR).
- Ask for consent to share anonymised data and establish transparent and well-documented anonymisation routines that consider not just direct identifiers, but also how a combination of indirect identifiers could reveal identities. (See for example the guide on informed consent in the CESSDA data management expert guide).
- Avoid collection of (sensitive and non-sensitive) personal data when possible.
- Get legal support (IPR, copyright, patents, trademarks etc.) from your home institution. If there is no dedicated office for this purpose, try to get information from your university library, as its staff are often confronted with such issues.
- If you need permission from the copyright holder in order to use sources like images for your publication, try to get one that covers both printed and digital copies.
- Finally, check the recommendations in the section on Licences, that are closely related to this section.

RECOMMENDATIONS

- To ensure the best possible stewardship of your data, choose to deposit it in a digital repository that is certified by a recognised standard such as the CoreTrustSeal. The Registry of Research Data Repositories (re3data) provides a good starting point, noting disciplines, standards, content types, certification status and more. FAIRsharing (manually curated information on standards, databases, policies and collections) allows you to search databases by subject, and includes entries tagged 'Humanities and Social Sciences'.
- Use disciplinary repositories where they exist, as they are more likely to be developed around domain expertise, disciplinary practices and community-based standards, which will promote the findability, accessibility, interoperability and ultimately the reuse and value of your data. The level of curation available in a repository is key to data quality and reusability.
- Datasets should be assigned persistent identifiers (PID). Most repositories that are designed for long-term preservation will automatically assign or 'mint' persistent identifiers for your datasets, so choosing a quality repository will automate this step. Consider as well signing up for ORCID, a free service that assigns persistent identifiers to individuals/authors.
- To facilitate findability of all research outputs, bidirectional links should be created between publications related outputs, such as data (using PIDs).
- Include the richest metadata possible with your deposited data so that others can find it, understand the parameters under which it was created, and understand the conditions under which they can access and/or reuse it. See recommendations in this report in the sections on Licences and Metadata for more information.

RECOMMENDATIONS

- If applicable, determine if the body funding your research has particular requirements for a DMP, or offers a template for framing your plan. If there is no required template, choose an existing appropriate one (e.g. via DMPOnline).
- Devise a DMP prior to collecting data. Define and plan for your data: all research projects deal with data. If your project includes the analysis of text corpora, for example, then the corpora themselves are data, and you should make sure they are clearly described, documented, and managed according to the FAIR principles so your research is reusable by others.
- Plan documentation of metadata: In order for your data to be comprehensible in the future and/or reusable by others, they will need descriptive metadata created according to a common schema to understand the context/purpose of the research. The richer the metadata, the more intelligible and useful the dataset (see section on Metadata).
- Use standardised terminology to increase interoperability. Consider employing vocabularies or ontologies that follow FAIR principles to increase interoperability and findability (e.g. see FAIRsharing.org).
- Consider the right questions to be answered in your DMP that can account for discipline-specific requirements. The DMP templates suggested by funders are quite high level and provide generic guidance for file naming or versioning conventions, database structuring, and can be a good start. Tools like the dmponline.dcc.ac.uk provide discipline specific examples that can be of further reference.
- DMP as living documents: Update your data management plan regularly in order to take into account any potential relevant changes such as using new data types and/or models, technology, new institutional data management policies, reassessing legal aspects or licences for legal compliance etc.
- Depending on the size of the organisation: think of providing institutional support for research data management (RDM); organise information sessions to raise awareness about good research data management, and the risks of not managing it early.
- If possible, consider involving library and/or repository support staff from the initial stages of research data management planning to discuss the best solutions, specifications, standards and protocols along which the repository operates. Repository staff can also assist scholars with understanding any specific data management requirements and associated costs.
- Factor the cost of research data management (time or human resources) into budgetary requirements at the point of application.



RECOMMENDATIONS

- Data models go FAIR: the FAIR Guiding Principles, correctly applied, ensure data are findable, accessible, interoperable and reusable. Data modelling should take this into account by using formal, easily accessible languages for knowledge representation, providing persistent identifiers, open standards, well documented Application Programming Interfaces (API), generic user interfaces and rich metadata. The FAIRification process developed by the GO FAIR initiative offers a system on how to shape the data modelling.
- Use open standards, and whenever possible, standardised technologies and procedures should be used. The World Wide Web Consortium W3C maintains several standards relevant for data models like XML and RDF. Within XML the Text or Music Encoding Initiative TEI/MEI or specific expressions of them have become standards for text or music editions. The query language SPARQL and the representation tool for linked data JSON-LD are common standards for RDF (refers to FAIR principle I1).
- Prefer human and machine-readable systems: coding of data models and of the actual data that is both human and machine-readable in a unified way provides better sustainability and long-term accessibility than machine-readable only code (binary codes), that may use different formats for data model description and the actual data. For both, hierarchical data models and graph-based data, various serialisations (file formats) are available that fulfil this condition (XML, TEI/XML, Turtle, N3, RDF/XML), whereas SQL based technologies need bigger efforts.
- Normalise as much as possible: to avoid redundant information, the content of databases should be normalised as far as possible, using for example authority files like VIAF and identifiers like DOI, ARK, ISNI, GND and the like. To foster the exchange of data, standardised vocabularies and ontologies are needed as well, but an overall ontology for the humanities has not yet been established. The ontology CIDOC-CRM and especially some extensions are well on their way to become a reference model for cultural heritage information.
- Data models follow the data management plan (DMP): when establishing a data model, researchers should keep the whole lifecycle of their data in mind, as it should be outlined in a DMP. Therefore, an extensive documentation of the data model, its software and tools are highly relevant and facilitates the transfer of data in a secure and trusted repository in order to keep them accessible. The same is true here: the more you use open standards for your

RECOMMENDATIONS

- A good starting point is to consult the Metadata Standards Directory, a community-maintained directory hosted by the Research Data Alliance: https://rd-alliance.github.io/metadata-directory/
- Metadata works best when terminology is consistent, e.g. naming conventions are followed, spelling is normalised, and so on. Depending on the complexity and size of your metadata, consider using a tool such as Open Refine to 'clean' your metadata.
- For greater searchability and interoperability, researchers should also consider using controlled vocabularies to identify common terminology when populating metadata fields. ...rary of Congress maintains a controlled vocabulary for subject headings: ...thorities/subjects.html
- ...e metadata should include a clear and explicit reference to the dataset ...h the inclusion of a PID in the metadata (see section on Trustworthy Data ...rsistent Identifiers).
- ...data as rich as possible in order to better contextualise your data and ...sider more detailed descriptions, and fuller provenance information, as ...ectrum of available metadata fields.
- ...be machine-readable.

Sustainable and FAIR Data Sharing in the Humanities

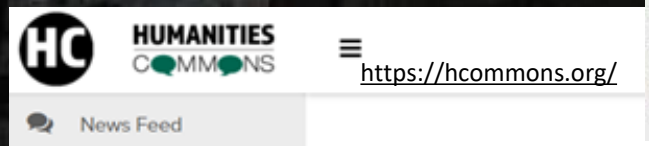
ALLEA Report | **February 2020**

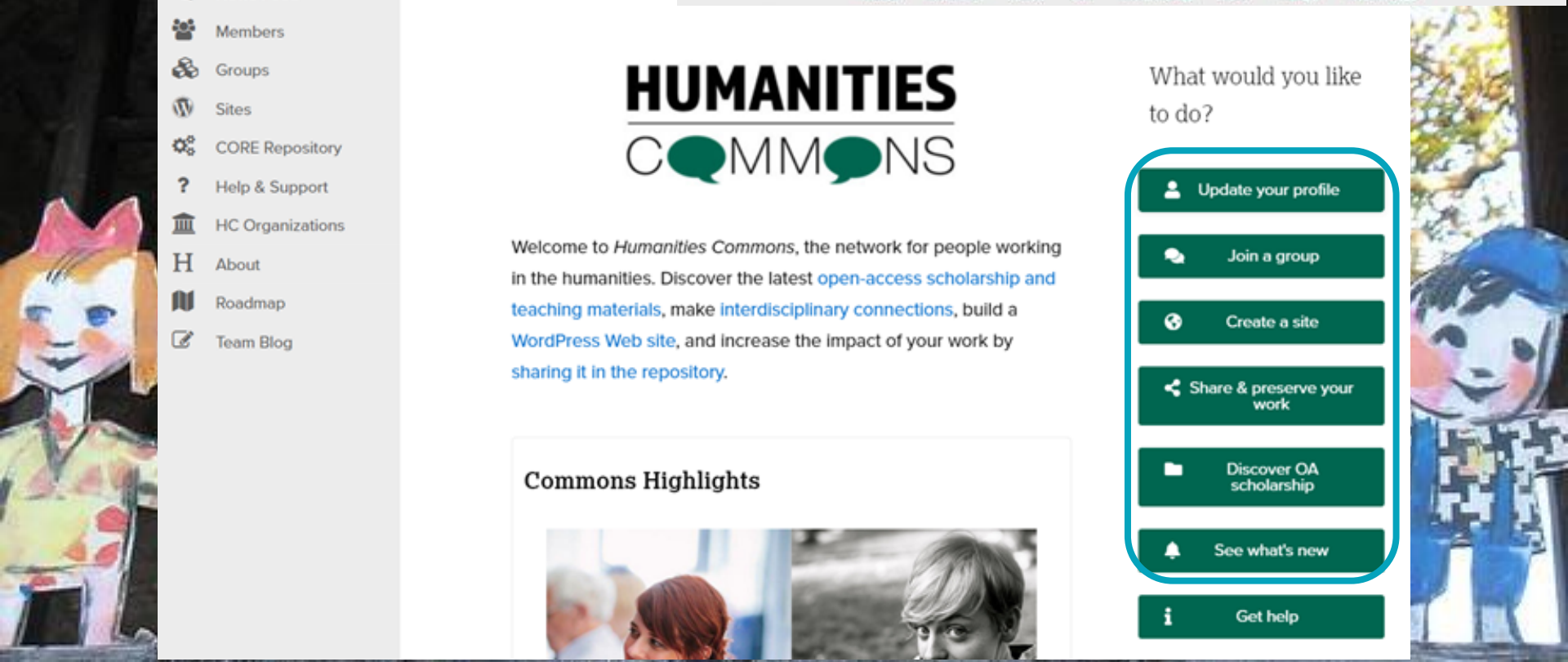
February 2020

…aprendo l’intero ciclo

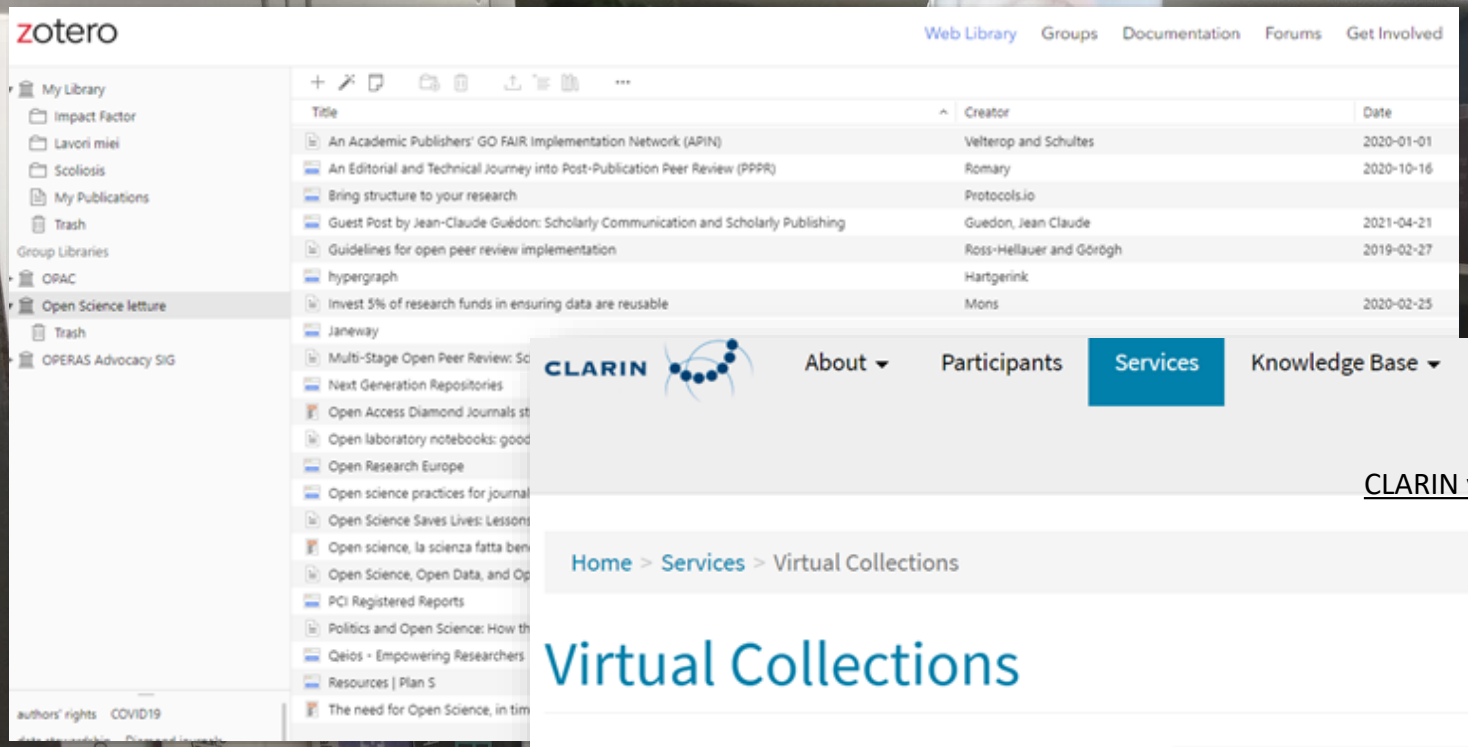
PREREGISTRAZIONE
- PRIORITÀ
- DIFFICILE FALSIFICARE
- SI PUBBLICANO RISULTATI NEGATIVI

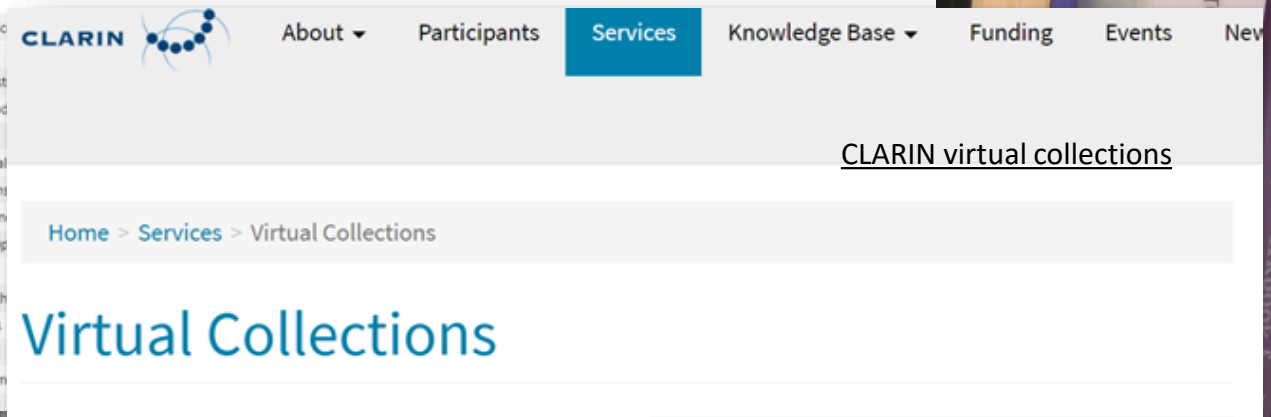
…creando comunità





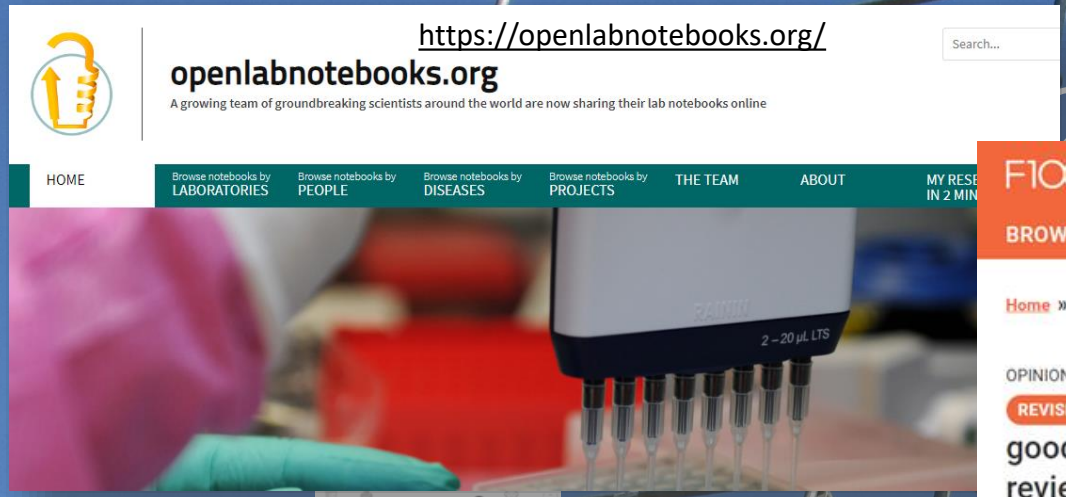
...condividendo bibliografie e





CLARIN virtual collections

https://openlabnotebooks.org/

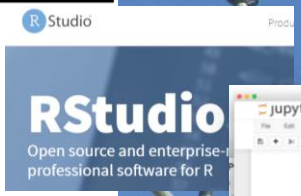


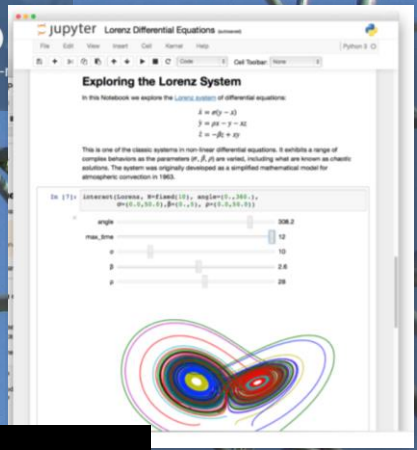
F1000Research 2019

What is an Open Notebook?

Open Notebooks are documents that contain equations, visualisations, narrative text and live code that can be executed independently and interactively, with output visible immediately beneath the input.

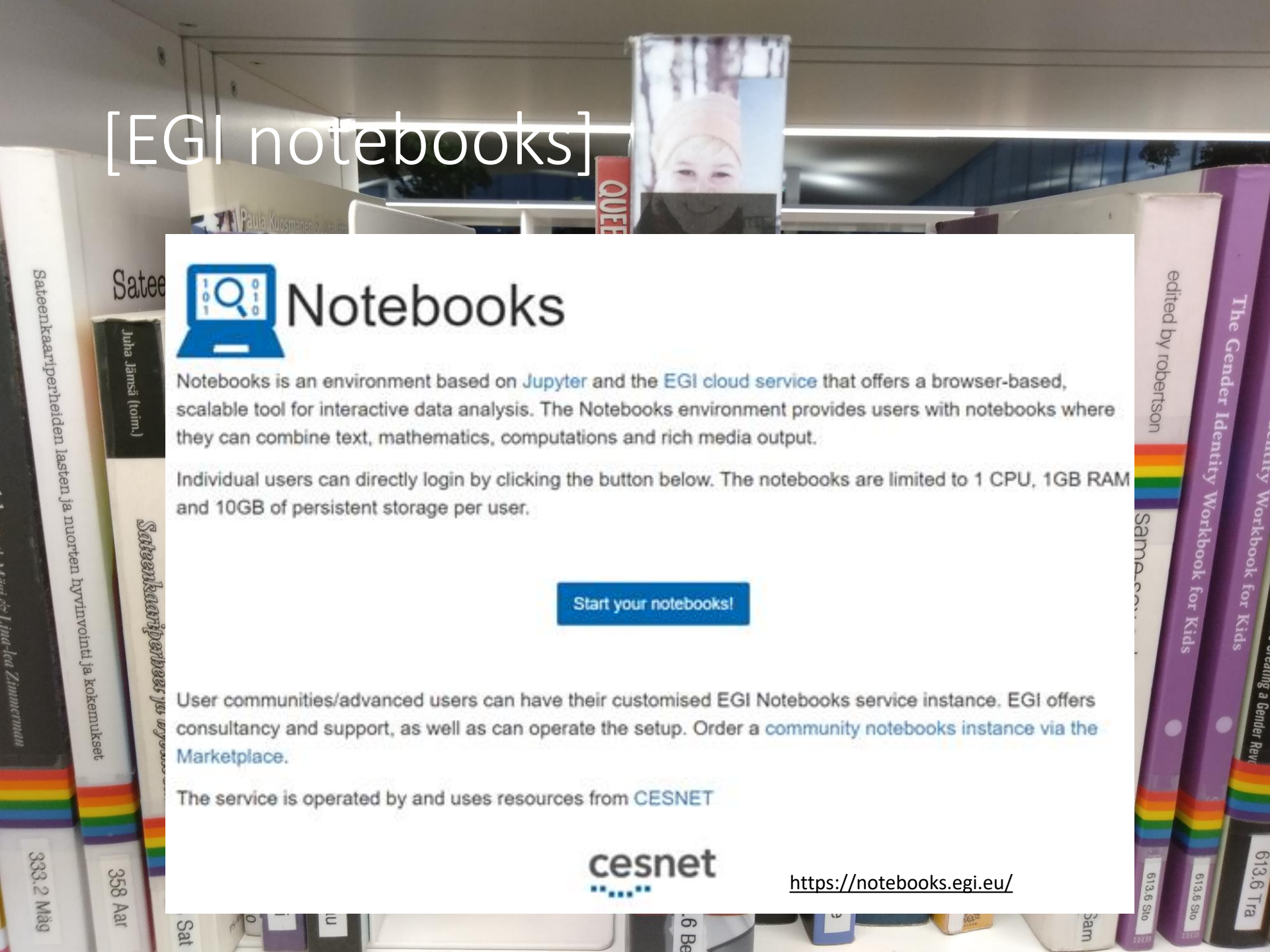
They bring together analysis descriptions and results, which can be executed to perform the data analysis in real time.





OPEN LAB NOTEBOOK CONTENGONO TUTTO: TESTO, METODO, DATI, SOFTWARE, CODICE ESEGUIBILE… SERVONO ANCORA LE RIVISTE CHE PUBBLICANO SOLO LA SINTESI DELLA RICERCA?

[EGI notebooks]



…anche nelle scienze umane

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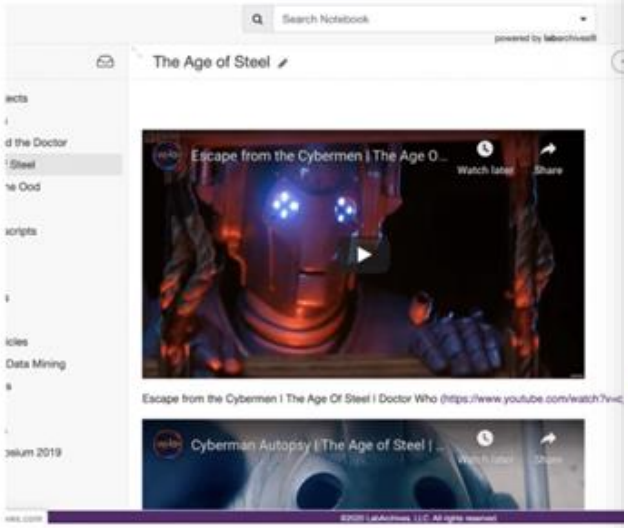
May 22, 2021

Using an ELN for Humanities

by Olivia Sisson | May 21, 2020 | Data Management, Research | 0 comments



ELN stands for *Electronic Laboratory Notebook*. That middle word 'laboratory' comes with a STEM connotation. It makes many think of beakers, flasks, white lab coats, the periodic table and those Bunsen burners you could never light in your high school chemistry class. Labs, however, aren't just for science.

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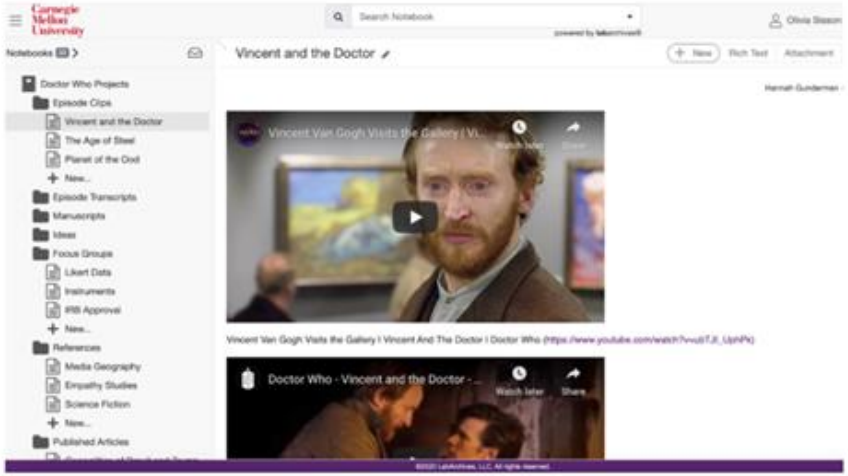
Here's what using an ELN for humanities research can look like and how it supports better research across the board...

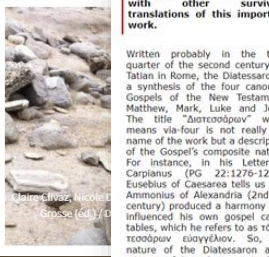
Videos: Movies and shows are what Hannah spends most of her time investigating. In the same way that a sociologist might observe human subjects and collect data points from interactions, Hannah observes life as it's presented on screen. Video files are a crucial part of her research. Storing them in a paper notebook obviously isn't an option. With LabArchives Hannah can store video files and clips directly on the notebook page. This makes it easy to keep corresponding video files, analysis and commentary in the same place.

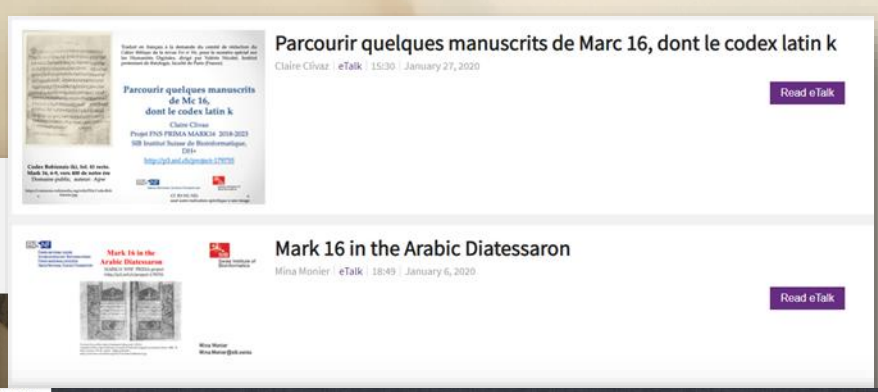


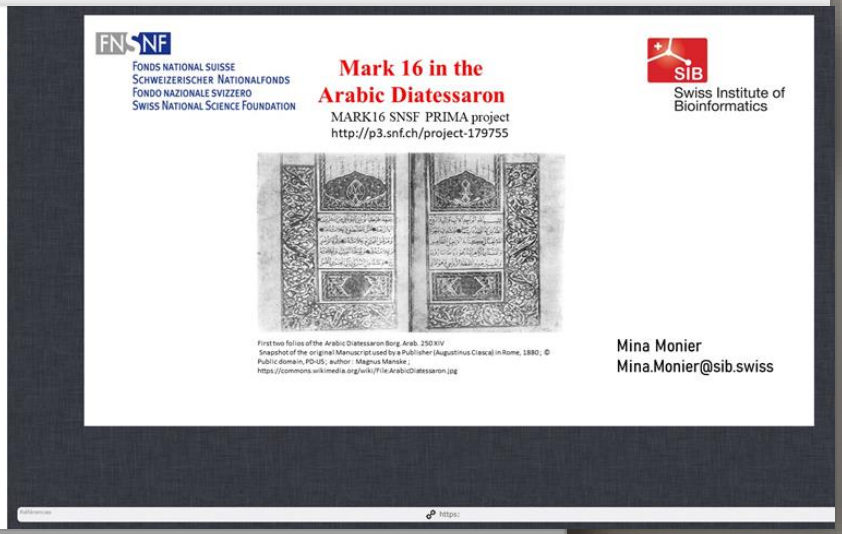
Files: Hannah uses transcripts and manuscripts from shows and movies to investigate language and messaging. These files can get bulky and keeping track of them is important. With just a few clicks she uploads them to her notebook and doesn't have to worry about losing them...ever (nothing gets permanently deleted and all data is searchable within LabArchives). With an ELN, you never have to worry about misplacing your work.

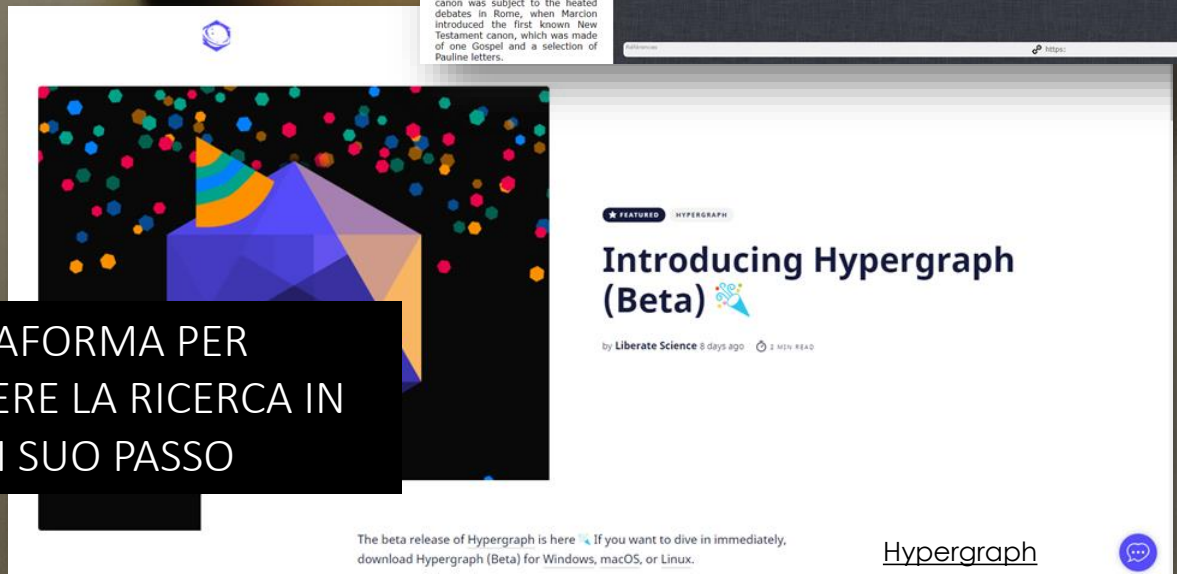
…e non più riviste…

eTalks



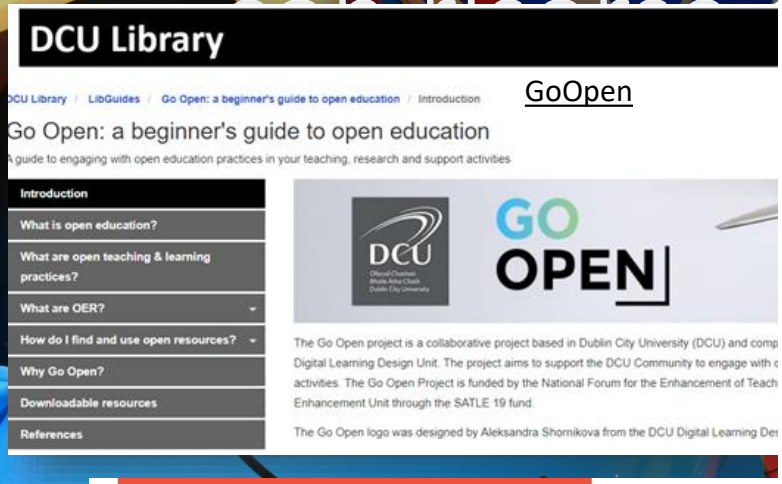






Hypergraph

PIATTAFORMA PER CONDIVIDERE LA RICERCA IN OGNI SUO PASSO


DCU Library
DCU Library / LibGuides / Go Open: a beginner's guide to open education / Introduction
Go Open: a beginner's guide to open education
A guide to engaging with open education practices in your teaching, research and support activities
Introduction
What is open education?
What are open teaching & learning practices?
What are OER?
How do I find and use open resources?
Why Go Open?
Downloadable resources
References
DCU
GO OPEN
The Go Open project is a collaborative project based in Dublin City University (DCU) and comp
Digital Learning Design Unit. The project aims to support the DCU Community to engage with
activities. The Go Open Project is funded by the National Forum for the Enhancement of Teach
Enhancement Unit through the SATLE 19 fund.
The Go Open logo was designed by Aleksandra Shornikova from the DCU Digital Learning De

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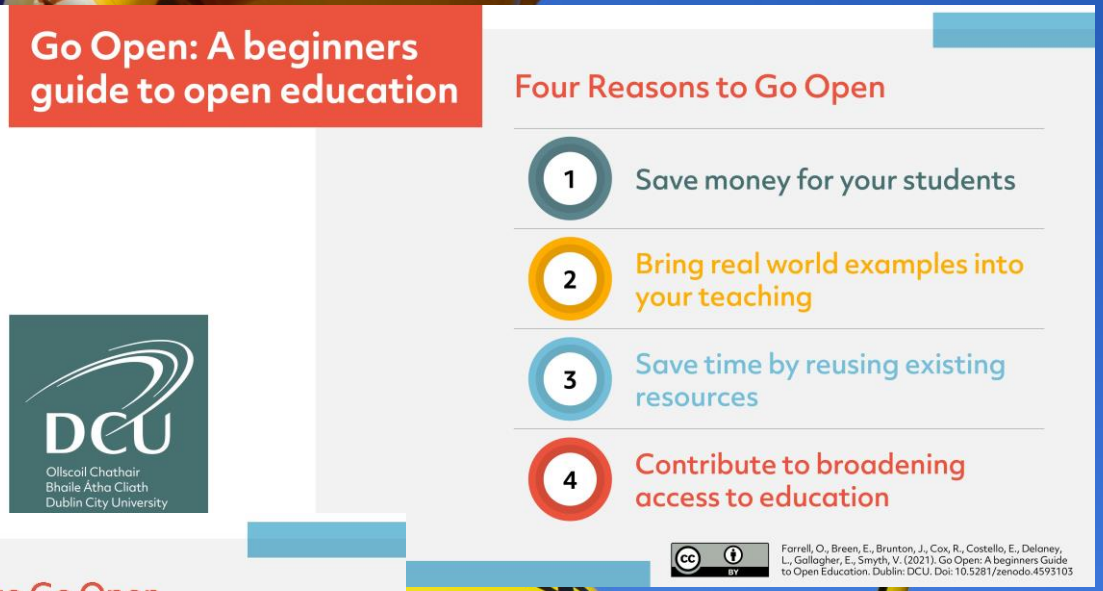
Go Open: A beginners guide to open education
Four Reasons to Go Open
1 Save money for your students
2 Bring real world examples into your teaching
3 Save time by reusing existing resources
4 Contribute to broadening access to education
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Ollscoil Chathair Bhaile Átha Cliath
Dublin City University
Farrell, O., Breen, E., Brunton, J., Cox, R., Costello, E., Delaney, L., Gallagher, E., Smyth, V. (2021). Go Open: A beginners Guide to Open Education. Dublin: DCU. Doi: 10.5281/zenodo.4593103

Go Open: A beginners guide to open education
Four Ways to Go Open
1 Share your open practice
2 Deposit your work in open repositories
3 Use Creative Commons licensing
4 Use open educational resources
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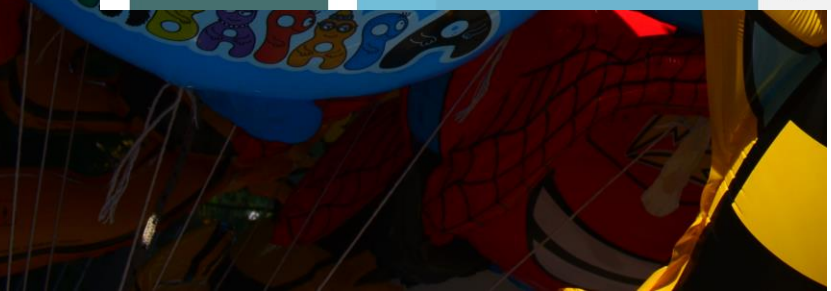

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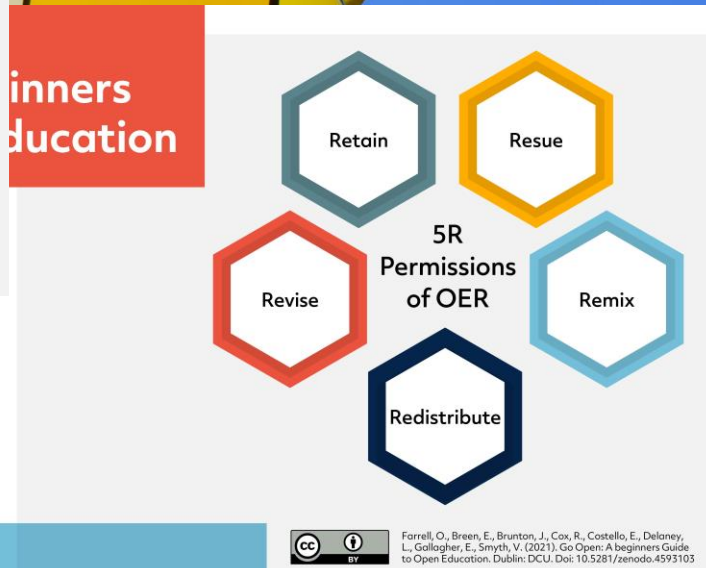
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…e con un po’ di citize

UCL Citizen science

Open Humans

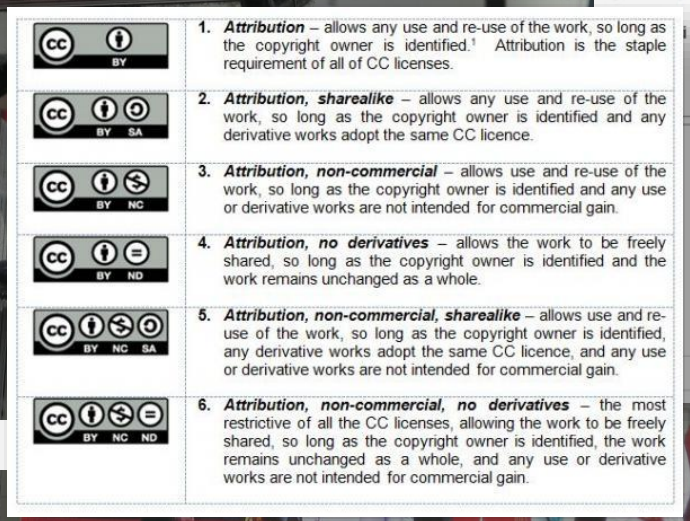
COINVOLGERE LA SOCIETÀ CIVILE NELLA RICERCA (DALL’INIZIO)

CSI Italia

...mantenendo i «diritti»

ALCUNI DIRITTI RISERVATI

TUTTI I DIRITTI RISERVATI



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…disseminando in modo diverso

Ten steps to innovative dissemination

1. Get the basics right
Define your objectives, map your audience(s), target and frame your messag
bring this together into a dissemination plan of what you'll release and when

2. Keep the right profile
Use personal websites, social media accounts, researcher identifiers and aca
social networks to make you and your research visible.

3. Encourage participation
In the age of Open Science, don't just broadcast, go for multi-directional dissemination. Invite & engage with others to participate & collaborate.

4. Open science for impact
Open Access publications and preprints mean more citations. In addition, publishing datasets, software and peer reviews increase your number of citable research outputs.

5. Remix traditional outputs
Give traditional outputs like research articles and books an impact-boost with accompanying lay-summaries, press-releases, blogs, and visual/video abstracts.

6. Go live
In person dissemination doesn't just have to be at stuffy conferences – hit the road and take part in science festivals, science slams, TEDx talks, science festivals, or roadshows.

7. Think visual
Disseminate findings through art or multimedia interpretations. Let your artistic side loose or use new visualisation techniques to produce intuitive, attractive data displays.

8. Respect diversity
Research should reach all who might benefit. Respect inclusion in scientific dissemination by creating messages which reflect gender, demography and ability diversity.

9. Find the right tools
Choose media, format and dissemination strategy based on your communication objectives. Find tools via, e.g., the OpenUP Hub: openuphub.eu/disseminate/services

10. Evaluate, evaluate, evaluate
Assess your dissemination activities. Are they having the right impact? If not, why not?

PLOS COMPUTATIONAL BIOLOGY

OPEN ACCESS

EDITORIAL

Ten simple rules for innovative dissemination of research

Tony Ross-Hellauer, Jonathan P. Tennant, Vilté Banelyte, Edit Gorogh, Daniela Luzi, Peter Kraker, Lucio Pisacane, Roberta Ruggieri, Electra Sifacaki, Michela Vignoli

Published: April 16, 2020 • https://doi.org/10.1371/journal.pcbi.1007704

Article | Authors | Metrics | Comments | Media Coverage

Apr. 2020

…con una diversa idea di «impatto sociale»

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Open science

From Wikipedia, the free encyclopedia

Open science is the movement to make scientific research (including publications, data, physical samples, and software) and its dissemination accessible to all levels of an inquiring society, amateur or professional.[2] Open science is transparent and accessible knowledge that is shared and developed through collaborative networks.[3] It encompasses practices such as publishing open research, campaigning for open access, encouraging scientists to practice open notebook science, and generally making it easier to publish and communicate scientific knowledge.

The six principles of open science[1]

Open Science can be seen as a continuation of, rather than a revolution in, practices begun in the 17th century with the advent of the academic journal, when the societal demand for access to scientific knowledge reached a point at which it became necessary for groups of scientists to share resources[4] with each other so that they could collectively do their work.[5] In modern times there is debate about the extent to which scientific information should be shared.[6] The conflict that led to the Open Science movement is between the desire of scientists to have access to shared resources versus the desire of individual entities to profit when other entities partake of their resources.[7] Additionally, the status of open access and resources that are available for its promotion are likely to differ from one field of academic inquiry to another.[8]

…LA PAROLA A EMMA!
“IF YOU ARE NOT
DOING WHAT
YOU LOVE,
YOU ARE
WASTING
YOUR TIME.”
… grazie e… ora tocca a voi!