

UA Repository

Zenodo - Why, what and how?

Item Type	Conference presentation
Authors	Plomp, Esther
Citation	Plomp, E. (2025, February 14). Zenodo - Why, what and how? Data Umbrella. Zenodo. https://doi.org/10.5281/zenodo.14852437
DOI	10.5281/zenodo.14852437
Journal	Data Umbrella
Download date	2026-05-12 09:31:02
Link to Item	https://hdl.handle.net/20.500.14473/1432

Zenodo - Why, what and how?

Esther Plomp
14 February 2025

The Zenodo logo is displayed in white lowercase letters on a solid blue rectangular background.

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Why Zenodo?

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



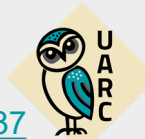
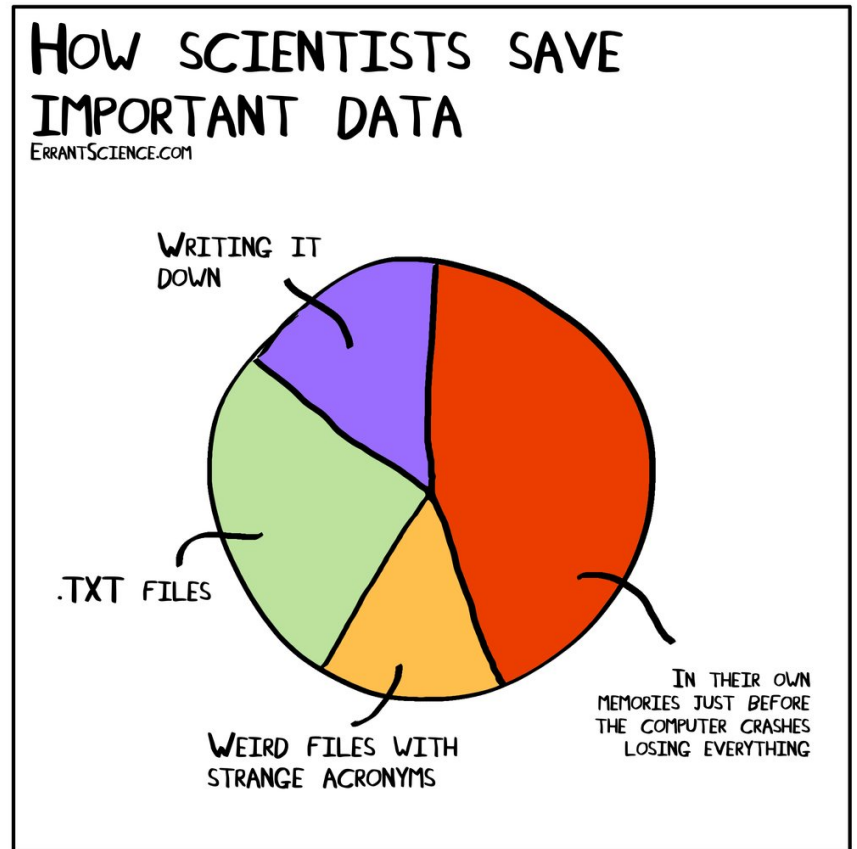
404

This is not the
web page you
are looking for.



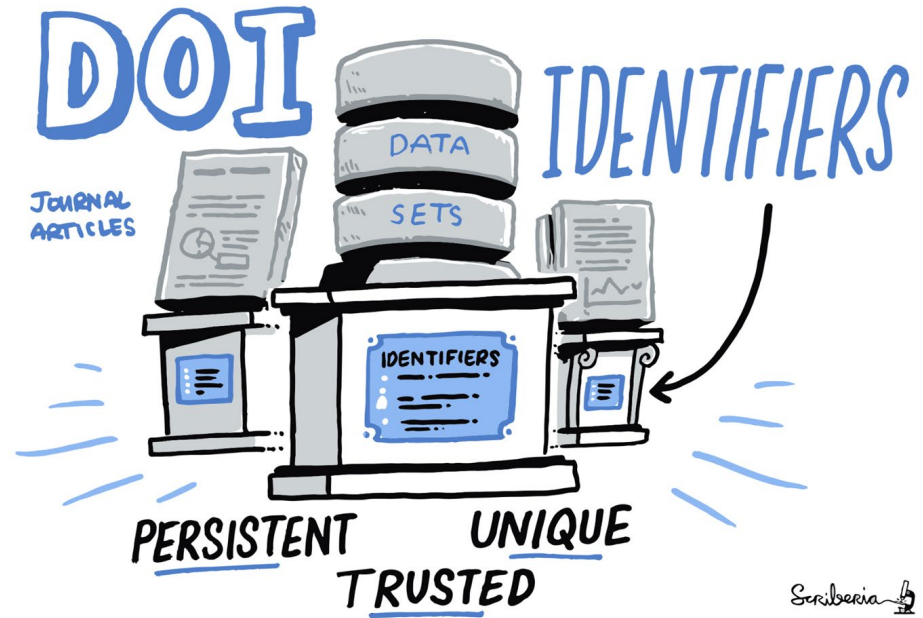
Preservation of Research Outputs

We need to consider how to share our research outputs in a manner that they are persistently available



Digital Object Identifier

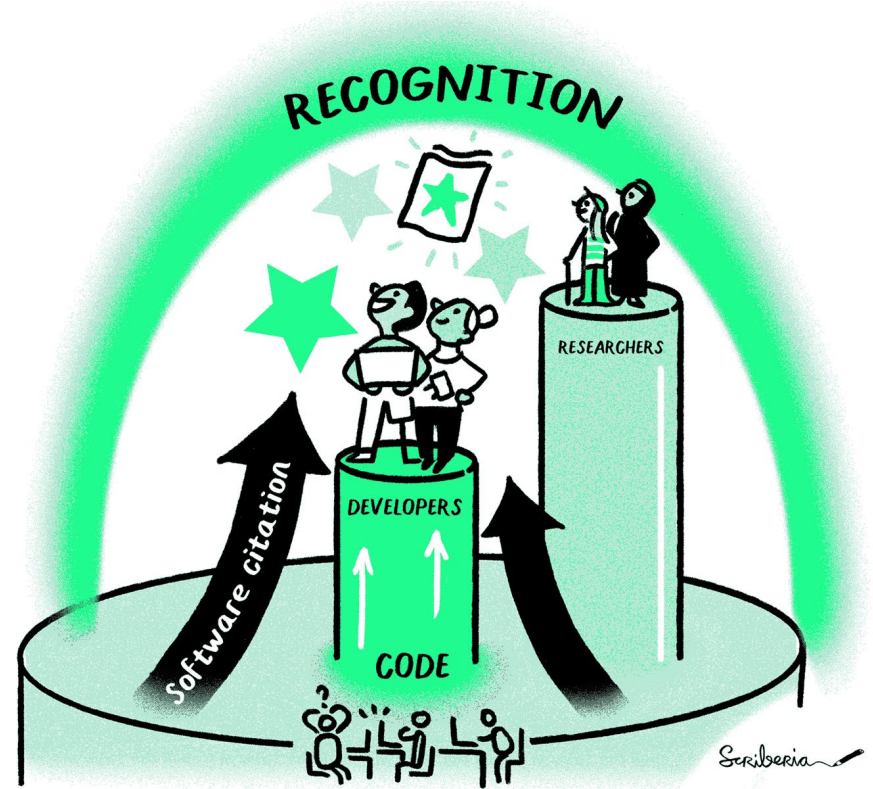
Persistent and unique identifier
- So no 404s!



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Making research outputs citable!

DOIs make it easier to cite outputs and keep track of how research is being used.



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Making research outputs available!

Data available upon request **does not work**

"We received no response to 41.3% of our data requests" - [Tedersoo et al. 2021](#)

Data availability decreases by 17% per year: 'research data cannot be reliably preserved by individual researchers' - [Vines et al. 2014](#)



MadScientist
@MadS100tist

"Data will be available upon request"



<https://knowyourmeme.com/memes/agnes-harkness-winking>



[10.5281/zenodo.14852437](https://zenodo.org/record/14852437)

Data not available upon request:

Data requests are successful **4.5 to 38%** of the time

- Only “**38%** of the researchers sent their data.. [Vanpaemel et al. 2015](#)
- We received only one of ten (**10%**) raw data sets requested. [Savage and Vickers 2009](#)
- ..less than one-third (**33%**) of the contacted authors sent us the requested data. [Dutra dos Reis et al. 2021](#)
- ..**73%** of the authors did not share their data. [Wicherts et al. 2006](#)
- ..only 7/157 research articles shared their data sets, **4.5%**. [Rowhani-Farid and Barnett 2016](#)
- Data were recoverable online or through direct data requests for **30%** of this sample. Data recovery declines exponentially with time since publication, halving every 6 years,.. [Minocher et al. 2021](#)
- ..only **17%** shared data upon request. [Hussey 2023](#)

‘Research data cannot be reliably preserved by individual researchers’ - Vines et al. 2014

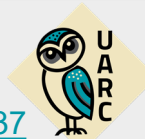
Zenodo does all of this for you!

Outputs are stored persistently, citable and are available!

<https://zenodo.org/>

Why use Zenodo?

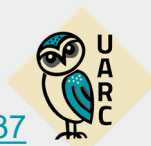
- **Safe** — your research is stored safely for the future in CERN's Data Centre for as long as CERN exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds.
- **Open or closed** — Share e.g. anonymized clinical trial data with only medical professionals via our restricted access mode.
- **Versioning** — Easily update your dataset with our versioning feature.
- **GitHub integration** — Easily preserve your GitHub repository in Zenodo.
- **Usage statistics** — All uploads display standards compliant usage statistics



[10.5281/zenodo.14852437](https://zenodo.org/10.5281/zenodo.14852437)

What is Zenodo?

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Zenodo - background



- Built and developed by researchers, to ensure that everyone can do Open Science
- Zenodo was launched in 2013
- Managed by CERN, European Organization for Nuclear Research, based in Switzerland
- The name is derived from Zenodotus, the first librarian of the Ancient Library of Alexandria and father of the first recorded use of metadata



Celebrating our 10th Anniversary



Zenodo



- Welcomes **research from all over the world**, and from **every discipline** (*necessary to understand the scholarly process*)
- **Free for uploads up to 50 GB** (can contact them about bigger uploads)
- Zenodo **does not impose any requirements** on format, size, access restrictions or licence.



Zenodo = Open Source



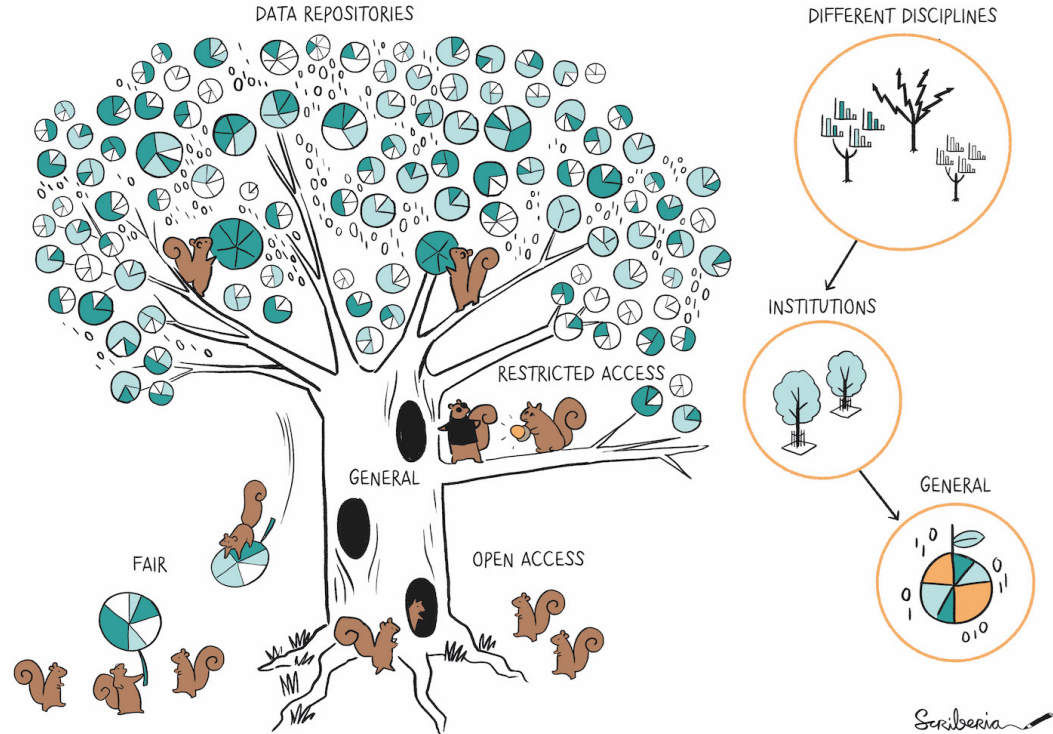
- Zenodo code is itself open source, and is built on the foundation of the [Invenio](#) digital library (also open source).
- Everything is shared openly in [GitHub](#), and contributions to any aspect are welcomed from anyone.



Data repository

Zenodo is a **general** data repository

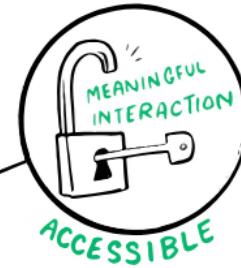
A repository is a place where digital objects can be stored and shared with others in accordance with **FAIR principles**



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Findable

Descriptive metadata and persistent identifier



Accessible

Data could be openly available OR authentication and authorisation procedures are necessary

Interoperable

Data needs to be integrated with other data and interoperate with applications or workflows



Reusable

Documentation and license



Scriberia 

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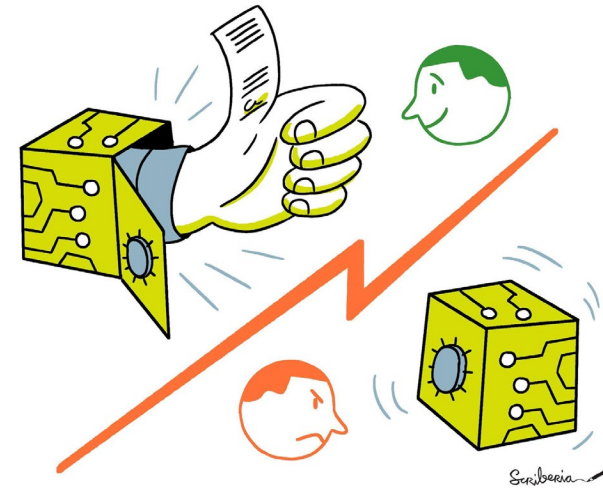
<https://book.the-turing-way.org/reproducible-research/rdm/rdm-fair>

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)

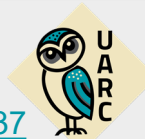


Licenses

- Formalised agreement of **what reusers can do** with the data/software
- If there is no license it doesn't mean it can be reused - the opposite!
- Software and data have different licenses
 - [Software license chooser](#)
 - [Data license chooser](#) or [Open Data Commons](#)
- Check your funder requirements or collaborator preferences if you have a choice (Horizon Europe requires CC0/CC-BY)

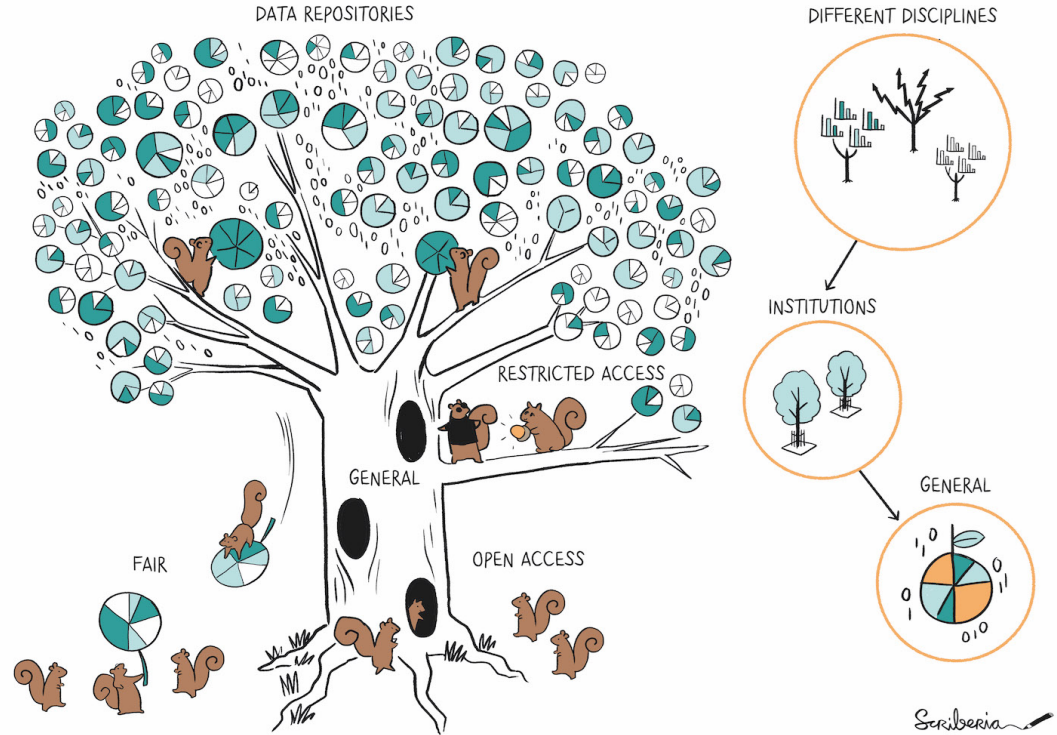


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Data repositories support FAIR

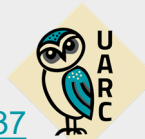
Persistent identifier, metadata fields, record that can be accessed, license can be assigned



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<https://book.the-turing-way.org/reproducible-research/rdm/rdm-repository.html>

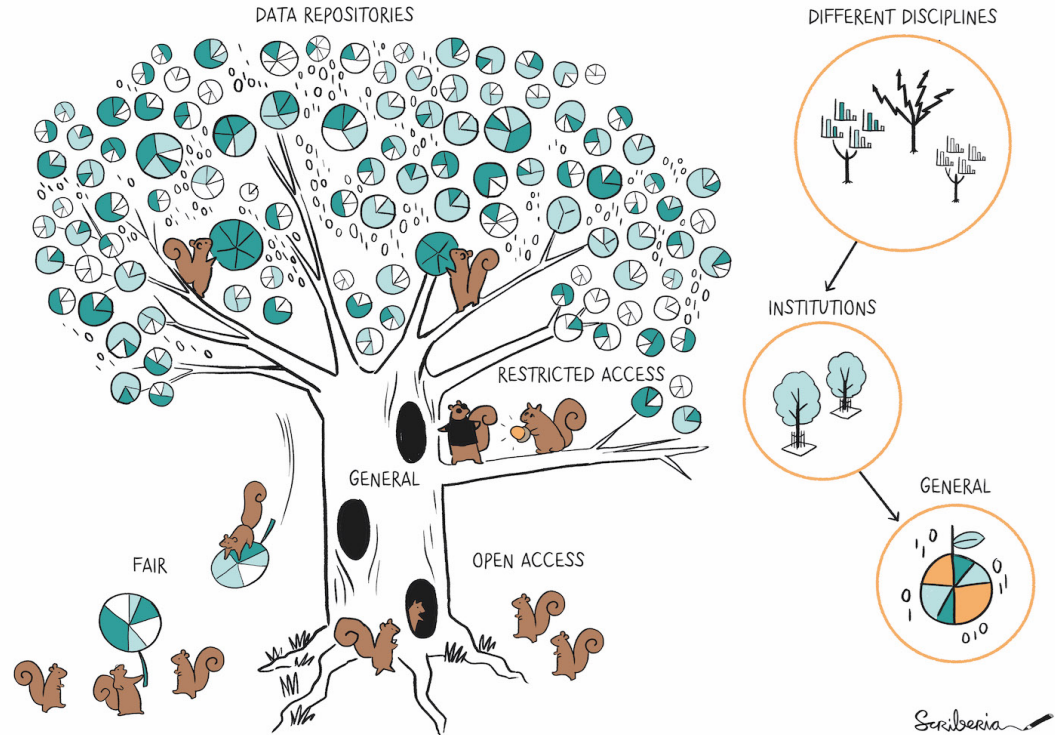
[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Other data repositories

Zenodo is not the only data repository!

Check [re3data](#) or [FAIRsharing](#) for other data repositories



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Why not supplementary materials?

Not always associated with a research article

Publisher requirements

Data control:
Supplementary materials cannot be updated

Impact:
Data/code are primary research outputs - should not be hidden in supplementary materials

Interoperability:
Not all file formats/sizes are always allowed

Availability:
Supplementary materials may be behind a paywall & no persistent identifier

Not aligned with FAIR principles!

How do I use Zenodo?

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)





Research. Shared! Sign up today

Citeable. Discoverable


Uploads get a Digital Object Identifier (DOI) to make them easily and uniquely citeable.


Communities

Accept or reject uploads to your own community (e.g workshops, EU projects, institutions or entire disciplines).

Trusted Research Data Management

Built on top of CERN's expertise in managing 100s of petabytes of research data from the Large Hadron Collider.

 Sign up with GitHub

 Sign up with ORCID

 Sign up with OpenAIRE

— OR —



Sign up

Sign up



University of Aruba



Sign in to ORCID

Don't have your ORCID iD yet? [Register now](#)

Email or ORCID iD

For example: joe@institution.edu or 0000-1234-5678-9101

Password

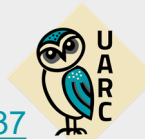
Sign in to ORCID

ORCID

Unique ID for you as a
researcher

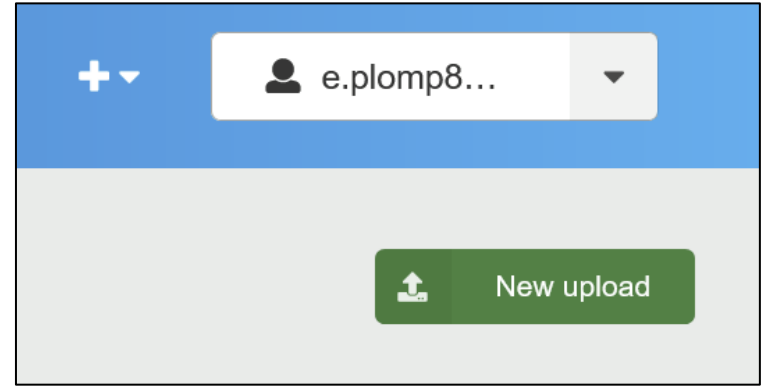
<https://orcid.org/>

[10.5281/zenodo.14852437](https://zenodo.org/doi/10.5281/zenodo.14852437)



Create a new item

- + (top right), or **Dashboard** and then 'new item' top right



Basic information

All fields with a * are mandatory:

- Digital Object Identifier
- Resource type
- Title
- Publication date
- Creators

Basic information

Digital Object Identifier *

Do you already have a DOI for this upload? Yes, I already have one No, I need one

Copy/paste your existing DOI here...

A DOI allows your upload to be easily and unambiguously cited. Example: 10.1234/foo.bar

Resource type *

Title *

+ Add titles

Publication date *

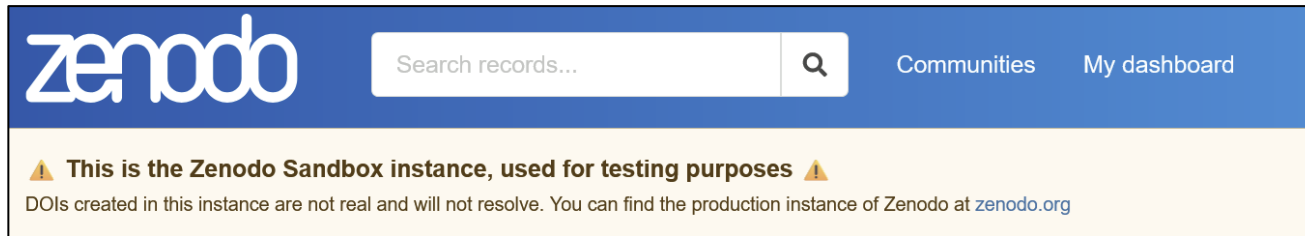
2025-02-13

In case your upload was already published elsewhere, please use the date of the first publication. Format: YYYY-MM-DD, YYYY-MM, or YYYY. For intervals use DATE/DATE, e.g. 1939/1945.

Your output will be automatically assigned the CC-BY-4.0 license. You can change this (see slide 16)!

Zenodo sandbox

If you want to upload a test first, use the sandbox environment: <https://sandbox.zenodo.org>



The screenshot shows the Zenodo website interface. At the top left is the 'zenodo' logo. To its right is a search bar with the placeholder text 'Search records...' and a magnifying glass icon. Further right are two navigation links: 'Communities' and 'My dashboard'. Below the navigation bar is a yellow warning banner with a triangle icon on the left and right. The text in the banner reads: '⚠ This is the Zenodo Sandbox instance, used for testing purposes ⚠' followed by 'DOIs created in this instance are not real and will not resolve. You can find the production instance of Zenodo at zenodo.org'.

How do I use Zenodo and GitHub?

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



GitHub + Zenodo

Sharing software via GitHub alone is not following the **FAIR principles**

- No DOI, no long term preservation

Share a version of the repository on a data repository!



More details:

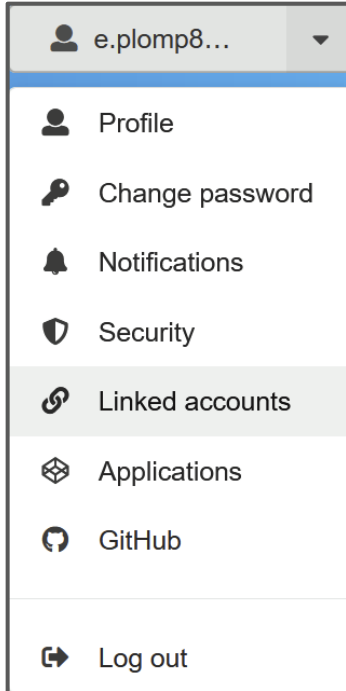
<https://www.youtube.com/watch?v=pjsbBQY00aE&t=1s>

<https://guides.github.com/activities/citable-code/>

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Link your GitHub account



- In the **Menu**, go to **Linked accounts**
- Click **connect** for the service that you would like to connect
- Authenticate on the platform
- Afterwards you should see a green tick and the option to disconnect:



Get started with GitHub/Zenodo

A user menu dropdown for the user 'e.plomp8...'. The menu items are: Profile, Change password, Notifications, Security, Linked accounts, Applications, GitHub, and Log out.

In the **Menu**, go to **GitHub**

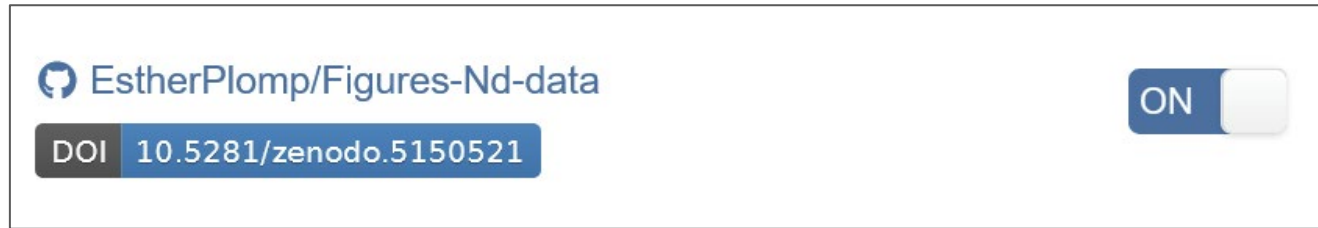
The screenshot shows a 'Get started' guide with three steps:

- 1 Flip the switch**
Select the repository you want to preserve, and toggle the switch below to turn on automatic preservation of your software.
 ON (example)
- 2 Create a release**
Go to GitHub and [create a release](#). Zenodo will automatically download a .zip-ball of each new release and register a DOI.
- 3 Get the badge**
After your first release, a DOI badge that you can include in GitHub README will appear next to your repository below.
DOI [10.5281/zenodo.8475](#) (example)

You should see your GitHub repositories

Preserve a repository on Zenodo

Flip the switch on, which looks like this:



Now, whenever you release a new version of your GitHub repository, it will be copied over to Zenodo!

How it looks like on GitHub

The screenshot shows a GitHub repository page for 'Figures-Nd-data' by user EstherPlomp. The repository is public and has 1 branch, 1 tag, 0 stars, and 1 fork. The main branch is selected. The file list includes folders for Data, Images, and Script, and files for CITATION.CFF, LICENSE, and README.md. The README section is visible, showing a DOI: 10.5281/zenodo.5150521. The repository description is 'Data and code underlying the figures of the article 'Neodymium isotopes in modern human dental enamel: an exploratory dataset for human provenancing''. The right sidebar shows repository statistics and options like 'About', 'Readme', 'MIT license', 'Cite this repository', 'Activity', '0 stars', '2 watching', and '1 fork'. There is also a 'Releases' section with one release titled 'First release to make the script c...' on Jul 31, 2021.

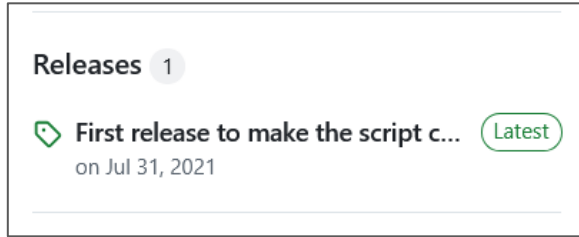
File/Folder	Commit Message	Time Ago
Data	Delete readme.md	4 years ago
Images	Delete software-publishing.jpg	3 years ago
Script	update based on reviewer comments	4 years ago
CITATION.CFF	add doi	4 years ago
LICENSE	Initial commit	4 years ago
README.md	update doi article	3 years ago

<https://github.com/EstherPlomp/Figures-Nd-data>

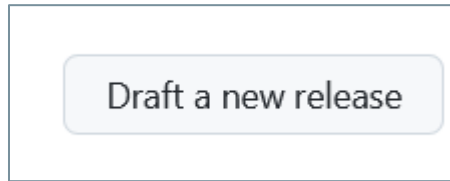
[10.5281/zenodo.14852437](https://zenodo.org/record/14852437)



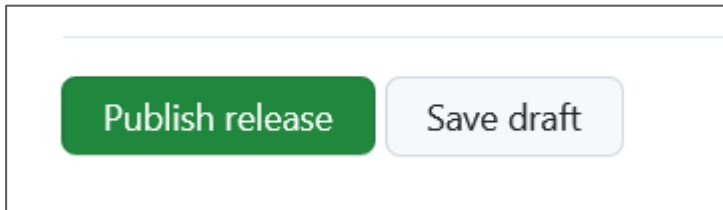
GitHub: set up a new release



Select **Releases** on the main repository page



Select **draft a new release** on the top right





Fill out the metadata fields and select **Publish release** below the form

How it looks on Zenodo:

Published July 31, 2021 | Version v1.0.0






Software Open

EstherPlomp/Figures-Nd-data

Esther Plomp¹ ; Joshua C. Peterson²  [Show affiliations](#)

Data and code underlying the figures of the article 'Neodymium isotopes in modern human dental enamel: an exploratory dataset for human provenancing'

Files

EstherPlomp/Figures-Nd-data-v1.0.0.zip	>
 EstherPlomp/Figures-Nd-data-v1.0.0.zip	
EstherPlomp-Figures-Nd-data-dfc357f	
 CITATION.CFF	435 Bytes
 Data	
 Nd-data-Figure1.csv	2.4 kB

Edit

New version

Share

101 VIEWS 7 DOWNLOADS

Show more details

Versions

Version v1.0.0 Jul 31, 2021
10.5281/zenodo.5150521

Cite all versions? You can cite all versions by using the DOI 10.5281/zenodo.5150520. This DOI represents all versions, and will always resolve to the latest one. [Read more.](#)

Adding the DOI button in your README

Details

DOI
DOI 10.5281/zenodo.3941066

Resource type
Software

Publisher
Zenodo

1. Select the **DOI button** on Zenodo
2. Copy the Markdown text
3. Add Markdown text to your README file on GitHub

Markdown

```
[![DOI](https://zenodo.org/badge/DOI/10.5281/zenodo.3941066.svg)](https://doi.org/10.5281/zenodo.3941066)
```

How do I use Zenodo in my research article?

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Linking research objects



How do you link the data, code and article together?

- [Linking Research Objects – The Turing Way](#)

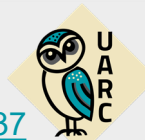
Always check whether the persistent identifier of the data/code is listed in the article ([Data Availability Statement](#)) and in the references! It is important to [cite data like articles](#).



This illustration is created by Scriberia with The Turing Way community. Used under a CC-BY 4.0 licence. DOI: [10.5281/zenodo.3332807](https://doi.org/10.5281/zenodo.3332807)

<https://book.the-turing-way.org/communication/citable/citable-linking.html>

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Example Linking of Research Objects

Data availability

All data underlying the results are available as part of the article and no additional source data are required.

Software availability

Software available from: <http://bioconductor.org/packages/HDCytoData>

Source code available from: <https://github.com/lmweber/HDCytoData>

Archived source code at time of publication: <https://doi.org/10.5281/zenodo.3551051>²⁶

Licence: MIT License

From:

<https://doi.org/10.12688/f1000research.20210.2>

How do I use Zenodo to share presentations?



[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)

Reserve a DOI

Reserve a DOI so that you can already use it in your presentation/research article

Select **No I need one** in the DOI section, then press **Get a DOI now!**

Digital Object Identifier *

Do you already have a DOI for this upload? Yes, I already have one No, I need one

You do not need to upload/publish any files yet - you can add the DOI to your slides, save your presentation and then upload the presentation to Zenodo.

The DOI alone is not a link!

You can add <https://doi.org/> in front of any DOI to make the DOI a link

Example: [10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437) has the link

<https://doi.org/10.5281/zenodo.14852437> embedded in the numbers.

Thank you!

esther.plomp@ua.aw

[10.5281/zenodo.14852437](https://doi.org/10.5281/zenodo.14852437)



Resources

- [Zenodo tutorial - How to use and upload your research](#)
- [Getting Started with Zenodo | What's Next on My Open Science Journey? Part 3](#)
- [Comparte tus datos con GitHub y Zenodo](#)

