

Why Open Science

Science is not
working as it
should be

- Slow, wasteful, locked away
- Ruled by commercial interests
 - Reproducibility crises
- Questionable research practices
- Closed science means people suffer

Why Open Science *now*?

Things are getting worse

We have to act **now**, as a community



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



We need science if we are going to help quickly and sustainably solve these

Who is leading the change?

Elsevier?

Springer Nature?

Organisations still stuck in a pre-digital mindset
whose primary product was developed in the 17th
Century.

We can do better.

But as individuals we are powerless to face these
tasks alone.

Our vision of the future

To help make ‘Open’ the default setting for all global research.

We want to help create a welcoming and supporting community, with good tools, teachers, and role-models, and built upon a solid values-based foundation of freedom and equitable access to research.

The way we do research has changed for good

We now have new expectations

Transparency

Not secrecy

Collaborative

Not solo

Continuous

Not discretised

We should be training ourselves

- Sustained community engagement across disciplines
 - Rethinking our mindset
 - Changing the incentive system

How do we get to where we want?

Imagine a future defined by the values of Open Science:

- **Freely available public good**
- **Rigorous and reproducible**
- **Open to ALL**
- **Isn't that just GOOD science?**

The best researchers have already
reinvented themselves into
Openness

**We need everyone to be collaborating together
if we are going to help solve the challenges
humanity faces.**

#OpenScience

@OpenScienceMOOC

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How do we fit in?

- **Community**
- **Common values**
- **Collaboration not competition**

Introducing the Open Science MOOC

A **peer-to-peer** value-based **community** that
works towards better **science for society**

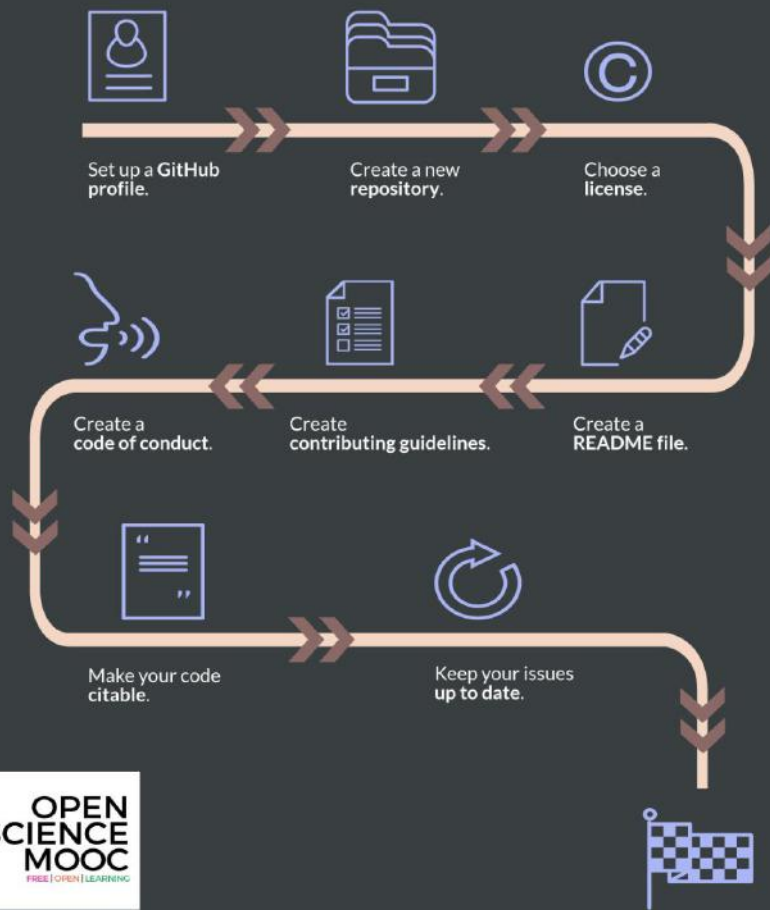
What do researchers care about?

- **Saving time and effort**
- **Problem solving**
- **Advancing research**

We give them the **knowledge** and **skills** to do
this

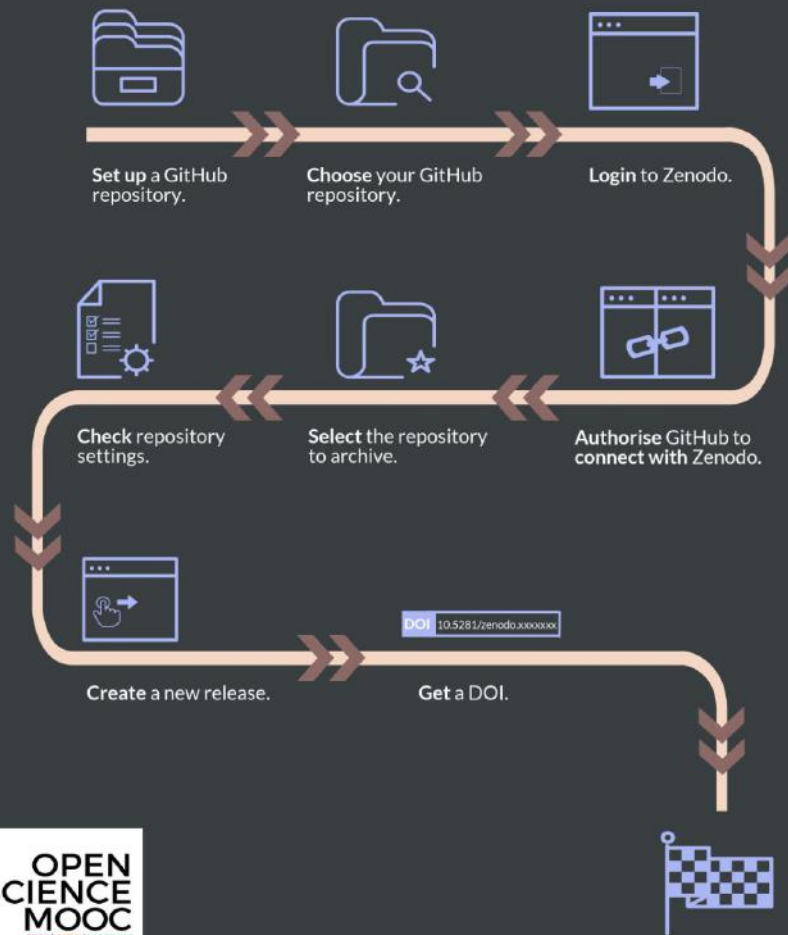
Task 1

Getting started with GitHub



Task 2

Making your code citable with Zenodo.



A fully interactive learning style

This allows learners to actually edit the MOOC content for this module. **Nice.**

Learning is based on **participation** and **collaboration**.

OPTIONAL ADVANCED/AWESOME STEP

Alright, so you just pushed some content to your first repo, awesome! Now let's put it into practice for a real project. Like, the one you are participating in right now. Let's try this out:

1. Go to the repositories for this project on [GitHub](#)
2. Fork the repository to your own GitHub account. The URL for this should be:
`https://github.com/OpenScienceMOOC/Module-5-Open-Research-Software-and-Open-Source.git`
3. Head into RStudio, go to **File > New Project**, choose *Version Control*, select *Git*, and then paste the forked repository URL found in your copy of the repository. You now have your own versioned copy of this whole module. Neat. Save this somewhere on your local machine.
4. Now, you need to tell Git that a different version of this project exists. Open up the *Shell*, and enter the command: `git remote add upstream https://github.com/OpenScienceMOOC/Module-5-Open-Research-Software-and-Open-Source`
5. What you just did was name the original branch here `upstream`, just to keep things simple for now. Now, create a new **branch** to document your changes to this independent of the main branch. Enter the command: `git checkout -b proposed-changes master`
6. You just created a new branch called `proposed-changes` where you can now edit all of the content and files to your heart's delight. Hopefully, the structure of this project is simple enough for you to navigate around. All of the raw files for the MOOC can be found in the `content_development` folder, and this is `Task_3.md`.
7. If you scroll to the bottom of `Task_3.md`, you should see a place where you can edit in your name and affiliation. Add these in, and then go through the commit procedure detailed above. If you see anything else that needs editing too, feel free to add them in too!

Modular learning



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Open for re-use

Open Research Software and Open Source

Open Research Software and Open Source

STATUS: The first release for this module is now ready, and has been published on Zenodo:

DOI [10.5281/zenodo.1325081](https://doi.org/10.5281/zenodo.1325081)

To cite this work, please use the following:

Tennant, J. et al. (01/08/2018) Open Science MOOC: Module 5, Open Research Software and Open Source (Version 1.0) Zenodo. <https://doi.org/10.5281/zenodo.1325081>

Rationale Software and technology underpin modern science. There is an increasing demand for more sophisticated open source software, matched by an increasing willingness to share research tools. These developments come with a specific ethical, legal and economic challenges that impact upon research workflows. This module will introduce the necessary tools and concepts that can be openly accessed and re-used by others.

Learning outcomes

- The researcher will be able to define the characteristics of open source research software, and the ethical, legal, economic and research impact arguments for and against open source.
- Based on community standards, researchers will be able to describe the quality requirements of sharing and re-using open code.
- The researcher will be able to use a range of research tools that utilise open source software.
- Individual researchers will be able to transform code designed for their personal use into code that is accessible and re-usable by others.



We are not alone



Some of our Production Team

Production team



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Dr. Kevin M Moerman

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We are guided by passion

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Chile



Open MOOC-ers ▾ 🔔

○ jon.tennant

📁 All threads

Starred

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Channels

events

funding

general

introductions

module1principles

module3-repro-res

module5opensource

moocdularity

platform

promotion

random

researchers_oath

Direct Messages

♥ slackbot

○ jon.tennant (you)

♂ brucec

○ chjh

♂ Danny Colin

○ Flavio Azevedo

#general

☆ | 👤 225 | 🔒 2 | <https://opensciencemooc.github.io/site/>



🔍 Search



Monday, September 3rd



jon.tennant 2:22 PM

How's everyone doing after a nice weekend? 😊

Today, I'm gonna be working on improving the style and language of these files: https://github.com/OpenScienceMOOC/Module-5-Open-Research-Software-and-Open-Source/tree/master/content_development#in-markdown-format Does anyone have any suggestions they would like to see?



GitHub

[OpenScienceMOOC/Module-5-Open-Research-Software-and-Open-Source](https://github.com/OpenScienceMOOC/Module-5-Open-Research-Software-and-Open-Source)



Module 5: Open Research Software and Open Source. Contribute to OpenScienceMOOC/Module-5-Open-Research-Software-and-Open-Source development by creating an account on GitHub.



dasaptaerwin 2:24 PM

Hi @jon.tennant I'm on my way to OpenUp meeting in Brussel. :). Good luck with the OpenMOOC. Indonesia Open Science Team has put it as one of important reference in promoting openscience in Indonesia.



2



jon.tennant 2:58 PM

Oh, fantastic! Congratulations again on winning the award to get there. I hope it's a great conference 😊

And thank you for your ongoing support of the MOOC 😊



Egon 6:05 PM

for Module 5, the bits with tasks about setting up GitHub... what is the URL of the live online version? I can only find the GitHub repo pages for these pages...



jon.tennant 8:41 PM

The live version isn't quite up yet

But you can run them as jupyter notebooks which look kinda cool



eolson 11:02 PM

joined #general.



Message #general



<https://openmooc-ers-slackin.herokuapp.com/>

Skeptical? You should be.

But it's not as new as you think.

Science was founded on openness.

We closed it down.

It's time to open it up again.

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Status

- **In development**
- 225 Slack community members
 - 3000 Twitter followers
 - 45 strategic partnerships
- Agile development so people are already using content
 - Iterative feedback is our design

Already making ripples



Huajin Wang 8:36 PM

Sure thing. I can definitely be a test use case! 😊



jon.tennant 8:37 PM

That would be absolutely perfect, thank you so much 😊

It's had hundreds of eyes on it already, and people using it, advantage of working in the open, but I don't think anyone has actually tested it yet..

Which is important, as there's no point launching something with a crappy user experience..



Huajin Wang 8:42 PM

How long does it take to go through one module?

I can arrange to test one module during the semester. I'm a librarian at Carnegie Mellon btw!



Egon 4:03 PM

oh, and I'm going to use the MOOC in my teaching in the next two months, starting with the Git stuff



jon.tennant 4:04 PM

Legendary! @Egon - if you have any feedback or comments on it for now, would love to know. Perhaps even providing feedback on it via Git could be a good training exercise



Egon 4:05 PM

yes, sure 😊

I do expect to send pull requests...



jon.tennant 4:05 PM

I still have a bit of work to do on them, creating screencasts to guide learners, and improving some of the text content. Going to add another soon on integrating Git and R too. : fun..

That would be awesome, thanks Egon! 😊

Carnegie Mellon and Maastricht University

And we haven't even started promotion yet...

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How do you want to shape your
identity as a scientist?

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We will give them the power to achieve that

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People not profits!

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entrepreneurs, policymakers, citizen scientists,
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We are here for you.

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Melanie Imming, & Jon Tennant. (2018, June 8). Sticker open science: just science done right. Zenodo. <http://doi.org/10.5281/zenodo.128557>

Thanks!

- **GitHub:** <https://github.com/OpenScienceMOOC>
- **Website:** <https://opensciencemooc.eu>
- **Twitter:** [@OpenScienceMOOC](https://twitter.com/OpenScienceMOOC)
- **Email:** info@opensciencemooc.eu

 **CODE OCEAN**



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