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**

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Why Open Science *now*?

Things are getting worse

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

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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.

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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.

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The way we do research has changed for good

We now have new expectations

Transparency

Not secrecy

Collaborative

Not solo

Continuous

Not discretised

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We should be training ourselves

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

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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?**

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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

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How do we fit in?

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

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Introducing the Open Science MOOC

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

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What do researchers care about?

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

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

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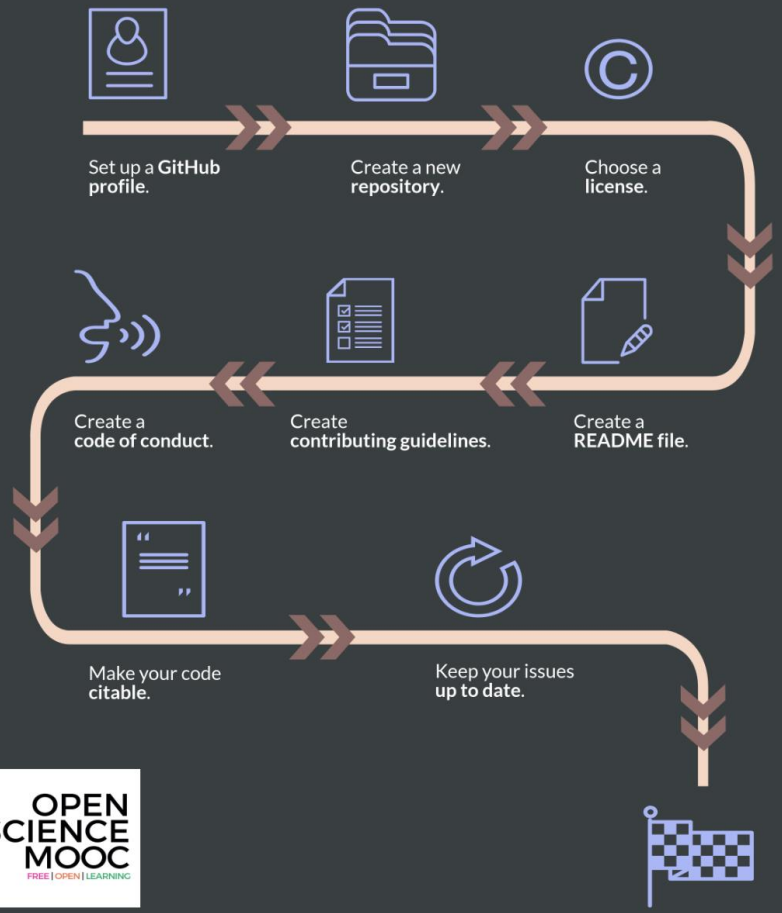
Task 1

Getting started with GitHub



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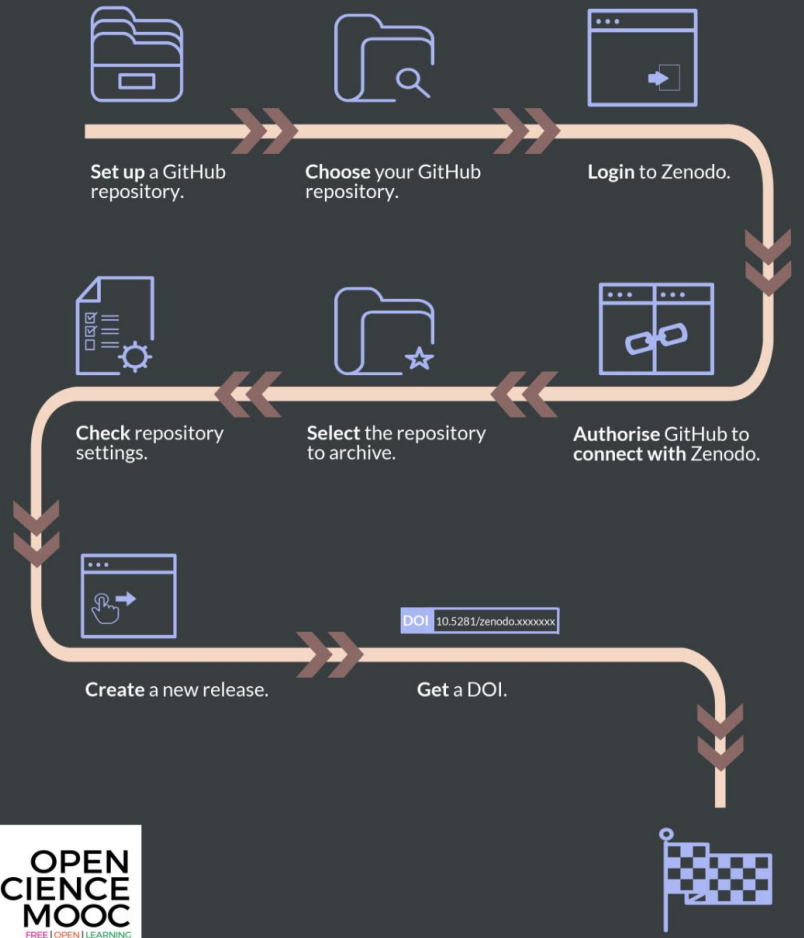
Task 2

Making your code citable with Zenodo.



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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 repositors 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 forkerd 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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Designed by: Mike Morrison

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

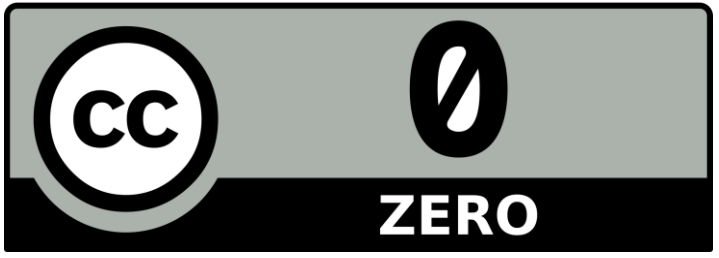
To cite this work, please use the following:

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 willingr tools. These developments come with a specific ethical, legal and economic challenges that impact upon research workflows. This module will introduce the necessary tools r 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 agair
- 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

Alex Morley
Open Sourceror
UK

Bastian Greshake Tzovaras
Participatory scientist
Berkeley, CA, USA

Bruce Caron
Culture Work Architect
USA

Daniel S. Katz
Open Source Collectivist
USA

Danny Colin
Webdev Wizard
Canada

Dr. Gareth O'Neill
Language Lubber
Amsterdam

Jo Havemann
Research in Africa Highlighter
Germany

Dr. Kevin M Moerman
Open Sourceror
USA

We are guided by passion

Steering committee

Bianca Kramer
Steering Committee
Netherlands

Bruce Becker
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Switzerland

Nicolas Schmelling
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Paola Masuzzo
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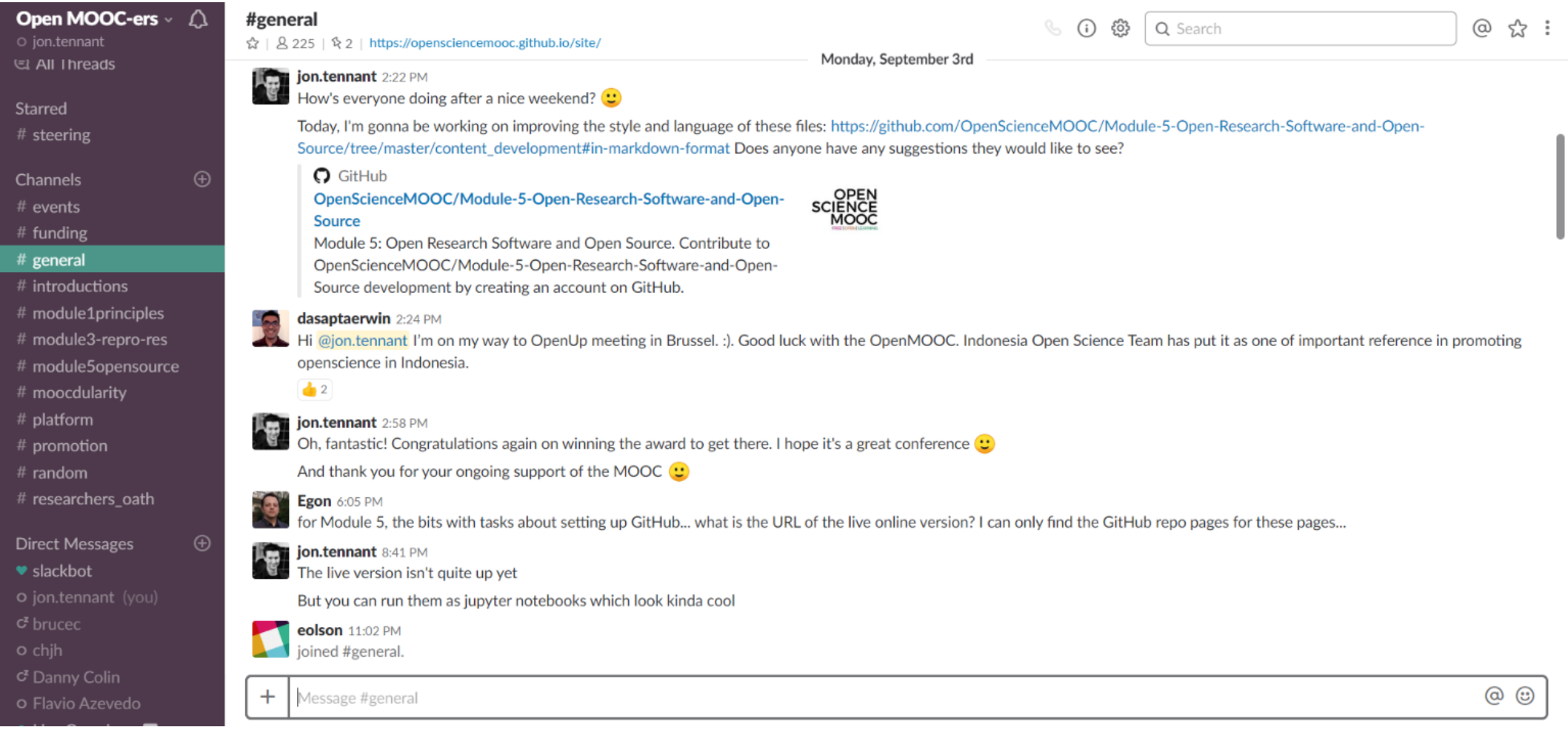
Ricardo Hartley
Steering Committee
Chile



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

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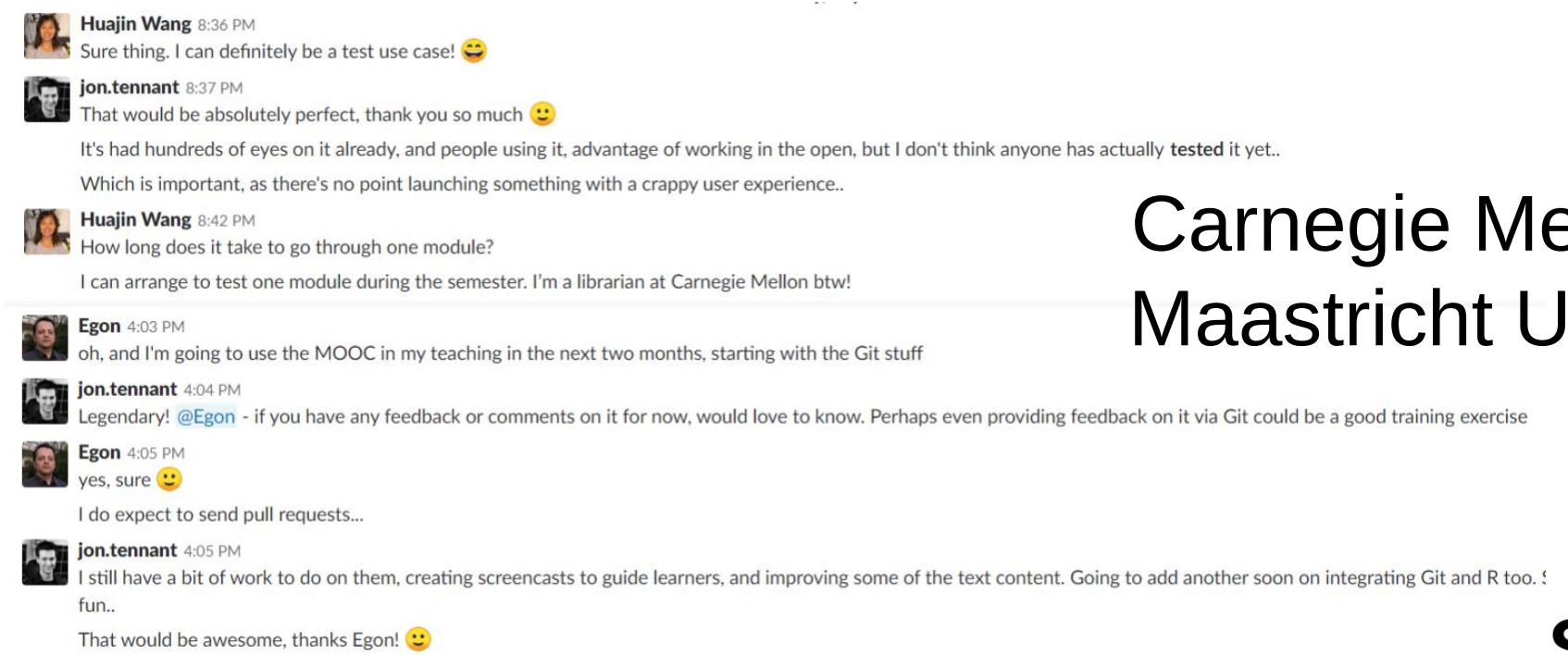
Already making ripples



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. S
fun..

That would be awesome, thanks Egon! 🙂

Carnegie Mellon and Maastricht University

And we haven't even started promotion yet…

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We will give them the power to achieve that

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People not profits!

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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
- **Email**: info@opensciencemooc.eu