

SSI Fellowship application 2021 – Emma Karoune

Hello, I am Dr Emma Karoune and this is my Software Sustainability Institute Fellowship application video.

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I am an open archaeobotanist, which means I am an archaeologist that specialises in analysing plant remains from archaeological sites and palaeoecological deposits. My interest in archaeology is very much inspired by Indiana Jones and a family holiday I had as a child to Egypt. I'm an open archaeobotanist because I apply open science practices to all my work to make my research more sustainable.

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I usually work as an independent postdoctoral researcher in collaboration with a number of different organisations such as Historic England and the Botanical Society of Britain and Ireland but at the moment I am working in a short-term role at The Alan Turing Institute as a Community Manager for the DECOVID project. This is a project that aims to use reproducible workflows to examine patient data from a number of hospitals to answer important questions about Covid-19.

I am also a contributor to The Turing way and have taken part in the last bookdash to write a new chapter for the Guide to collaboration on getting started with Github.

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I have spent the past year developing an open project to assess open science practices in my particular field, phytolith research, which is a sub-discipline of archaeobotany focused on analysing microscopic plant remains to address questions such as past human plant use, environmental and climate change. This is a concerted effort to try to change the research culture to a much more sustainable way of working.

My assessment of open science practices found that the number of open access publications was poor, and data and metadata sharing needed significant improvement.

I then embarked on a project to address these issues through the Open Life Science mentoring program. The aim was to raise awareness of the lack of open science in my field through talks and blogs, to start to work on accessibility of open science skills and to form a working group.

The working group is now very active and has been made an official committee in the International Phytolith Society. We have just applied for funding through the European Open Science Cloud to initiate a FAIRification project that I hope to start after my work at the Alan Turing Institute.

I am also developing a project to construct open reference collections for phytolith researchers with Historic England that will have an open reproducible workflow. This is a project that is fully open from the start and can be seen on my project page.

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My plan for the SSI Fellowship is to work on improving accessibility to open research skills and tools for researchers in my discipline but also more widely in the research scientist community.

There is an issue currently with open science not being in the mainstream and part of this is that the current community of researchers in archaeology and beyond often feel it is too much hassle to work openly but I think it is much more about a skills gap and they actually are not sure where to start. This is particularly the case with open data and it must be addressed.

I feel that we need to meet this head on and make it clear that there is a specific skill set for working as an open scientist and therefore if we want more researchers to work in this way, we need to train them.

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My main focus is going to be the development and running of a workshop on open science skills and tools for archaeologists and palaeoecologists.

- This is to be an online workshop lasting 1 week and to focus on general aspects of open science.
- There will be a lecture each morning covering subjects such as open access, open data, the FAIR principles, Open scholarship, reproducibility, equity, diversity and inclusion.
- Then each afternoon there will be a training task to teach participants to set up a collaborative project using Github.
- The workshop will use specific examples of open work from archaeology and palaeoecology to make it more relevant to the participants.

I have support from the Association of Environmental Archaeology to run this as an official workshop through the association and this will bring the workshop to a wide audience as the association has over 1000 members most of which are based in the UK or Europe. I plan to give out a survey at the upcoming spring AEA conference to ask about what the specific training needs are and also recruit collaborators to help in the development of this workshop.

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- I plan to continue my work with The Turing Way to contribute to the revision of the guide to collaboration and also work on expanding the book in other ways to help research scientists such as capturing open workflows.
- I will be working on this with Malvika Sharan, who is a SSI fellow.

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I am also planning to promote open ways of working by talking at conferences such as the upcoming Association of Environmental Archaeology Spring conference on open science, at the European Association of Archaeology conference that has a focus on widening horizons including talks about the

digital archaeology age and also talking at the International Meeting of phytolith research about my collaborative FAIRification project.

I am also a keen blogger and so plan to promote my open ways of working through my blog - The Open archaeobotanist. I am currently writing a number of journal articles for prominent journals in my discipline on open science and the use of open science tools such as an invited article for a special edition on sustainability for the journal 'Environmental Archaeology' called 'Open env archaeology means sustainable env archaeology'.

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Thank you for listening and please check out my projects pages and blog.