Open Research Pilot case studies: sharing all research outputs and future sustainability of data repositories

In this final blog from the researchers involved in the [Open Research Pilot](#), the Jefferis group discuss their participation. During this time, their open interests have been focused particularly on how to share all outputs from the research process, and on issues around sustainability of data repositories into the future.

START OF PROJECT

Dr Greg Jefferis believes that sharing research outputs fully – including data and code – is essential to accelerate research, and he has himself benefited from others sharing unpublished research outputs during his career. He hopes to create a standard in the field of neural circuits / connectomics that echoes the very high standards of sharing amongst Drosophila researchers in the past. He, together with Matthias Landgraf (Department of Zoology), recently started a new group funded by the Wellcome Trust, focusing on Drosophila connectomics. This project is an international collaboration, and will generate outputs besides publications e.g. neuronal skeletons and analysis code, that will also have great significance for over 50 labs working in this area. With this in mind they are collaborating with [Virtual Fly Brain](#) (VFB), a Wellcome Trust-funded web resource that curates and disseminates Drosophila neuroscience data to make their research freely accessible. They already plan to release and share key data via VFB on publication, and already use practices that fit with the type of data they use and produce.

They joined the Open Research Pilot to look for ways to share additional data and interim results with collaborators, and to start a discussion on what resources are needed to maintain data repositories that are functional long-term and accessible to all.

PROJECT IN PROGRESS

As part of their effort to identify ways to easily share results with collaborators, and ultimately with their wider community, the Jefferis group also took part in the Electronic Lab Notebook (ELN) trial run by the University. Unfortunately, they did not find an ELN that worked better than the tools they already use. The trial process was, however, helpful in raising awareness in the group of the available ELNs, and in identifying the features and functionality that are the most important for the group members. Greg and his group will continue to follow the development of ELNs, as they might become relevant to them in the future.

The group became more aware of the support that the Office of Scholarly Communication (OSC) provides or can facilitate for researchers. Dr Marta Costa (the Project Lead for the group) and Greg felt that their group would benefit from some dedicated training on using GitHub, as this is an important tool in the group's research practices. The OSC doesn't run

this training but was able to ask for help from the Data Champion community that they facilitate. [Data Champions](#) are volunteers from around the University who want to help foster good data management practices. Three members were happy to collaborate to provide the Jefferis group with the training and support they needed. This benefited the group members but also proved interesting for the OSC, who were able to understand more about how or where researchers were looking for support, as Marta and Greg were initially unaware of the Data Champions and the support they could offer.

Both Greg and Marta found it fruitful to engage with the [Wellcome Open Research team](#). Specifically, they found discussions useful around how open research (including preparing, sharing and managing it) should be funded; this issue is very relevant to the subject-specific data repositories they use, such as VFB. As part of this discussion, Greg and Marta, along with Dr Lauren Cadwallader and Dr Dave Gerrard from Cambridge University Libraries and David Carr from the Wellcome Open Research Team, authored a [series of three blog posts](#) on this issue, each from a different point of view: resource, institution and funders.

Greg and Marta also found the pilot project thought-provoking because they were exposed to other research groups and their needs around open research. They found it interesting to see how the demands and practices for open research need to serve various types of data and outputs.

LOOKING AHEAD

Even prior to the pilot Greg and Marta believed that open research should be the norm. Being involved in the project has however, reinforced their view that researchers need more support to engage with and implement open research as standard practice. This support should take the form of funding, training and/or infrastructure, and should focus not only on targeting the end point of a research project, but on developing awareness and implementing an open research culture for new and existing students and staff.

From a research group point of view, Greg and Marta think it would be helpful to have training (online and/or in person) available for new staff and students. This training would need to be discipline-specific or specific for the group, for example in the case of the Jefferis group there is a need for training on writing code that can be shared and reused (similar to the training session organised during the pilot), and on data management.

From the point of view of resources such as VFB, the issue that still needs addressing is funding. There are currently no mechanisms in the UK or worldwide for the long-term support of resources that are used by an international community. In fact, some of the genomic resources funded in the US by NHGRI have recently seen their funding significantly reduced. Although the integration and curation of data that is integral to the work of groups such as this one increases data reuse and accelerates research, there is no current funding mechanism that recognises the added value of these resources. To add to the complexity of this issue, the users of these resources are international – not bound by country borders, but by research subject.

As told to by the Jefferis group to the Open Research Pilot Research Support Team.