

Digital Preservation at Oxford and Cambridge

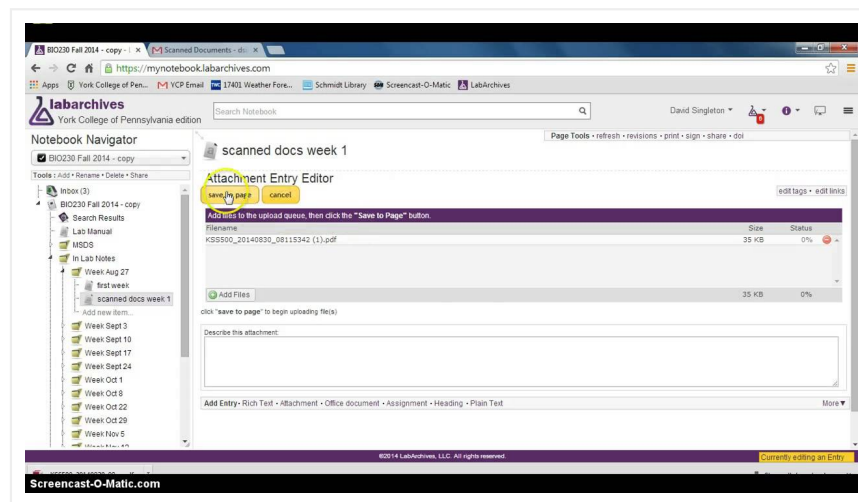
A collaborative research project to evaluate and provide sustainable recommendations for our digital preservation programmes

Electronic lab notebooks and digital preservation: part I

Posted on **2 August, 2018** by **Sarah**

Outreach and Training Fellow, Sarah, writes about a trial of electronic lab notebooks (ELN) at Oxford. She discusses the requirements and purpose of the ELN trial and raises lingering questions around preserving the data from ELNs. This is part I of what will be a 2-part series.

At the end of June, James and I attended a training course on electronic lab notebooks (ELN). IT Services at the University of Oxford is currently running a trial of [Lab Archives](#)' ELN offering. This course was intended to introduce departments and researchers to the trial and to encourage them to start their own ELN.



— Screenshot of a LabArchives electronic lab notebook

When selecting an ELN for Oxford, IT Services considered a number of requirements. Those that were most interesting from a preservation perspective included:

- the ability to download the data to store in an institutional repository, like ORA-data
- the ability to upload and download data in arbitrary formats and to have it bit-preserved
- the ability to upload and download images without any unrequested lossy compression

Moving from paper-based lab notebooks to an ELN is intended to help a lot with compliance as well as collaboration. For example, the government requires every scientist to keep a record of every chemical used for their lifetime. This has a huge impact on the Chemistry Department; the best way to search for a specific chemical is to be able to do so electronically. There are also costs associated with storing paper lab notebooks. There's also the risk of damage to the notebook in the lab. In some ways, an electronic lab notebook can solve some of those issues. Storage will likely cost less and the risk of damage in a lab scenario is minimised.

But how to we preserve that electronic record for every scientist for at least the duration of their life? And what about beyond that?

One of the researchers presenting on their experience using LabArchives' ELN stated, "it's there forever." Even today, there's still an assumption that data online will remain online forever. Furthermore, there's an overall assumption that data will last forever. In reality, without proper management this will almost

certainly not be the case. While IT Services will be exporting the ELNs for back up purposes, but management and retention periods for those exports were not detailed.

There's also a file upload limit of 250MB per individual file, meaning that large datasets will need to be stored somewhere else. There's no limit to the overall size of the ELN at this point, which is useful, but individual file limits may prove problematic for many researchers over time (this has already been an issue for me when uploading zip files to SharePoint).

After learning how researchers (from PIs to PhD students) are using ELNs for lab work and having a few demos on the many features of LabArchives' ELN, we were left with a few questions. We've decided to create our own ELN (available to us for free at during the trial period) in order to investigate these questions further.

The questions around preserving ELNs are:

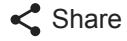
1. **Authenticity of research** – are timestamps and IP addresses retained when the ELN is exported from LabArchives?
2. **Version/revision history** – Can users export all previous versions of data? If not users, then can IT Services? Can the information on revision history be exported, even if not the data?
3. **Commenting on the ELN** – are comments on the ELN exported? Are they retained if deleted in revision history?
4. **Export** – What exactly can be exported by a user? What does it look like? What functionality do you have with the data? What is lost?

While there's potential for ELNs to open up collaboration and curation in lab work by allowing notes and raw data to be kept together, and facilitating sharing and fast searching. However, the long-term preservation implications are still unclear and many still seem complacent about the associated risks.

We're starting our LabArchives' ELN now, with the hope of answering some of those questions. We also hope to make some recommendations for preservation and highlight any concerns we find.

Anyone have an experience preserving ELNs? What challenges and issues did you come across? What recommendations would you have for researchers or repository staff to facilitate preservation?

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[\[http://www.dpoc.ac.uk/2018/08/02/elns-part-i/\]](http://www.dpoc.ac.uk/2018/08/02/elns-part-i/) .

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