Electronic Lab Notebooks: Solutions for Paperless Research

The Office of Scholarly Communication held a dedicated event on electronic lab notebooks 13 January 2017 at the Department of Engineering. The event was accompanied by a vibrant discussion on Twitter #elncam - here is the recording of that discussion!

by Marta Teperek  6 days ago  18 Views

Getting started!
Great blog post by @niamhpage about #ELNs - might be of interest to #elncam attendees
unlockingresearch.blog.lib.cam.ac.uk/?p=1232
9:57 PM - 15 Jan 2017

Attending an all day workshop on electronic lab notebooks!
training.cam.ac.uk/osc/event/2011…. Follow us at #elncam @CamOpenData
10:06 AM - 13 Jan 2017

We have started the discussion with a sli.do poll to have a better feeling for the audience. Most of attendees were researchers.

Watch these excellent talks live now - Electronic Lab Notebooks: doing paperless research #elncam data.cam.ac.uk/electronic-lab…
10:43 AM - 13 Jan 2017

Attendees at our #elncam event: 49% researchers, 33% support staff, 13% librarians and 5% providers - @Slidoapp #7739
10:03 AM - 13 Jan 2017
Haven't been at an event before where Slido is used. It's interesting having a live poll to watch while waiting for #elncam to start.
9:58 AM - 13 Jan 2017

I am one of the 11% of Librarians at #elncam, 57% are researchers & 28% are support staff so far, with people from the UK and even Denmark.
10:06 AM - 13 Jan 2017

Our first speaker was Al Downie, the Head of IT at the Gurdon Institute at the University of Cambridge

Good morning from #elncam where we're discussing ELN wish lists in the snow! First up is Alistair Downie from the Gurdon Institute
10:13 AM - 13 Jan 2017

Welcome to our first speaker - Al Downie @GurdonInstitute - institutional perspective on ELN and results of his researcher survey #elncam
10:10 AM - 13 Jan 2017
We're getting going at #elncam with Al Downie from @GurdonInstitute talking about his survey on Electronic Lab Notebooks
10:10 AM - 13 Jan 2017

ELN wish list from the Gurdon Institute #elncam
10:14 AM - 13 Jan 2017

You can't get the benefits of ELNs without 100% commitment which is a big risk, a leap of faith - Al Downie #elncam
10:15 AM - 13 Jan 2017
Al Downie from @GurdonInstitute Risks of an ELN include dependence, loss of access and difficulty of disengagement #elncam
10:16 AM - 13 Jan 2017

Alistair Downie looks at risks to consider when buying into an institutional ELN package #elncam
10:16 AM - 13 Jan 2017

Al Downie - large number of DIY solutions and growing discomfort regarding lack of discoverability @GurdonInstitute #elncam
10:19 AM - 13 Jan 2017
The question of trust - Evernote and Dropbox have gained the trust of users in a way that ELN's haven't yet #elncam
10:19 AM - 13 Jan 2017

The quality and the usefulness of ELNs depends a lot on the organisation of the individual and team #elncam
10:19 AM - 13 Jan 2017

Al summarised for us the results of his excellent survey about Electronic Lab Notebooks conducted across the School of Biological Sciences (345 responses!)
Survey of interest across SBS

345 responses from 13 Departments:

- Biochemistry
- Pathology
- IPCN
- Psychology
- Zoology
- Sainsbury Laboratory
- Systems Biology Centre
- Genetics
- Pharmacology
- Plant Sciences
- Vet Medicine
- Gordon Institute
- Stem Cell Institute

Survey of ELN thoughts across the School of Biological Sciences #elncam

10:20 AM - 13 Jan 2017
In survey @GurdonInstitute, surprisingly, complexity and cost as main reasons for not using ELNs. #elncam

10:23 AM - 13 Jan 2017

1
Interesting priorities in choosing not to commit. cost &
complexity are relatively easy to resolve #elncam
10:23 AM - 13 Jan 2017

80% of PIs and researchers would like ELN to be offered by the
institution #elncam
10:24 AM - 13 Jan 2017
Ease of use, security and reliability - top 3 ELN requirements for researchers @Cambridge_Uni - Al Downie @GurdonInstitute #elncam
10:26 AM - 13 Jan 2017

Clear interest across school at all levels for an ELN just need a push with guidance or direction. #elncam
10:27 AM - 13 Jan 2017

A single package couldn't meet all these needs, so do you aim for 70% satisfaction? #elncam
10:27 AM - 13 Jan 2017
Our second speaker was Dr Marko Hyvonen from the Department of Biochemistry at Cambridge, who provide the Principal Investigator's perspective on Electronic Lab Notebooks.
Recognise this? Marko Hyvonen worries this stash of paper notebooks will eventually crash onto his desk! #elncam

10:33 AM - 13 Jan 2017

Paper lab books - variety of quality, full of electronic data printed out, easy to destroy, not searchable, disappear

@HyvonenGroup #elncam

10:35 AM - 13 Jan 2017
<table>
<thead>
<tr>
<th>Note no.</th>
<th>Date</th>
<th>Title</th>
<th>Continued from page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13 January 2017</td>
<td>Work for Sherlock Holmes</td>
<td></td>
</tr>
</tbody>
</table>

Marko Hyvonen  
mh256@cam.ac.uk

Marta Teperek  
@martateperek

Trying to find information in colleagues' hard copy lab books is a task for a detective ...  
@HyvonenGroup  
#elncam

10:33 AM - 13 Jan 2017

Sarah Burton  
@harasanotrub

Copious notes, 3 tissues and one presentation in, am finding lots of parallels with  
#ebooks: mostly, it's about choice  
#elncam

10:34 AM - 13 Jan 2017
Issues with manual lab books (not least the reliance on post it notes for indexing) #elncam
10:35 AM - 13 Jan 2017

Issues with manual lab books - raw data missing, illegible handwriting, materials are ageing, not searchable etc.
@HyvonenGroup #elncam
10:35 AM - 13 Jan 2017

Finding data is the key issue with hard copy lab books
@HyvonenGroup - no search button! #elncam
twitter.com/CamOpenAccess/…
10:36 AM - 13 Jan 2017

1 2
Rory Macneil
@rory_macneil

#eln.cam @camopenaccess Marko Hyvonen PI Dept of Biochem. No link to data from paper lab book. And big data out on servers.
10:37 AM - 13 Jan 2017

Christopher Brown
@chriscb

99% of their data is electronic/computerised in variety of formats/standards. Data management less than ideal.
@HyvonenGroup #eln.cam
10:38 AM - 13 Jan 2017

Cambridge OpenAccess
@CamOpenAccess

File naming protocols are great for data management in a group, but not everyone complies #eln.cam
10:39 AM - 13 Jan 2017

Marta Teperek
@martateperek

How do you find the right image if they are named image1, img2, img3? file naming conventions key to find information
@HyvonenGroup #eln.cam
10:39 AM - 13 Jan 2017
#elncam @camopenaccess Marko Hyvonen. What should be in eln. When to move data to ELN? How to create permanent links to data outside ELN.
10:40 AM - 13 Jan 2017

The ELN #elncam
10:43 AM - 13 Jan 2017
Requirements for ELN solution for Marko Hyvonen's group in the Dept of Biochemistry @Cambridge_Uni #elncam

10:46 AM - 13 Jan 2017

Excellent talks on electronic lab notebooks this morning - tweeting as @CamOpenAccess #elncam

10:47 AM - 13 Jan 2017

Lots of data stored in physical lab books that are not searchable or linked to electronic files? Why not use ELN? #phdchat #elncam

10:47 AM - 13 Jan 2017
Features Marko Hyvonen's group wouldn't expect or want from an ELN #elncam
10:49 AM - 13 Jan 2017

Want a simple ELN with the features required but doesn't include the things you don't want or need (such as "bells and whistles") #elncam
10:51 AM - 13 Jan 2017

Bells & whistles reduce productivity in the lab. The more difficult the software the more difficult it'll be to change peoples habits #elncam
10:51 AM - 13 Jan 2017
Aslam Ghumra
@aslamghumra
Agree with marko hyvonen #elncam that an eln should record data and is not an analysis tool.
10:51 AM - 13 Jan 2017

Marta Teperek
@martateperek
Interesting - people buy-in across the group - the top issue to overcome in ELN implementation @HyvonenGroup #elncam
10:51 AM - 13 Jan 2017

Rory Macneil
@rory_macneil
#elncam @camopenaccess Marko Hyvonen PI Dept of Biochem. Best is university/school wide solution. local support. training.
10:52 AM - 13 Jan 2017

Cambridge OpenAccess
@CamOpenAccess
MH's group think a Uni-wide solution generic enough to serve different disciplines would make ELNs achievable, just a question of ££ #elncam
10:53 AM - 13 Jan 2017
@HyvonenGroup is scanning all the old lab notebooks for backup and to introduce some form of searchability #elncam
11:05 AM - 13 Jan 2017

Old data in paper labbooks can be scanned for £10 per 200 page book. Affordable way to preserve in PDF format #elncam
10:55 AM - 13 Jan 2017

And if you're not convinced that the ELNabled lab is the future... #elncam
10:56 AM - 13 Jan 2017

https://storify.com/martateperek/electronic-lab-notebooks-solutions-for-paperless-research
We next welcomed Jan Krause from EPFL and the Swiss National Research Data Management project providing a swiss perspective on Electronic Lab Notebooks.

Our third speaker today is @noctuel from @EPFLlibrary and representing the swiss national RDM project #elncam

#elncam Jan Krause EPFL Switzerland @CamOpenData SLims and open BIS

Jan Krause from EPFL (Switzerland) - two most common tools: SLims (commercial solution) and openBIS (homemade) #elncam
First selection based on disciplinary & technical requirements:

Second selection involving detailed analysis based on end users requirements (interviews and evaluation weighted by feature) and price:

Third selection, tendering and live demos:

SLims

Head Quarters: EPFL Innovation Park. Other Customers: Oulagen, Sophia Genetics, FDA, Unilabs, Swiss hospitals.

Marta Teperek
@martateperek

Neat approach to selecting the ELN provider @EPFLlibrary @noctuel #elncam
11:11 AM - 13 Jan 2017

Marta Teperek
@martateperek

SLims used @EPFLlibrary allows users connect their protocols, inventory and results in one place @noctuel #elncam
11:13 AM - 13 Jan 2017
Marta Teperek
@martateperek

openBIS - homemade ELN solution - allows using @ProjectJupyter notebooks to run code and reproduce results straight away! @noctuel #elncam
11:17 AM - 13 Jan 2017

Marta Teperek
@martateperek

Either you are in control (for open source software), or the software controls you (proprietary software) @noctuel #elncam
11:18 AM - 13 Jan 2017

Rosie Higman
@RosieHLib

Really helpful to hear the experiences of @noctuel in implementing ELNs, lots of lessons for us to learn from at #elncam
11:21 AM - 13 Jan 2017

Aslam Ghumra
@aslamghumra

High number of FTE’s required for an open source solution? #elncam
11:23 AM - 13 Jan 2017
The last talk in the practitioners’ session was from Kieren Lovell from the University Information Services at the University of Cambridge who spoke about data security.
Sarah Burton
@harasanotrub

Best and most interesting bio from a speaker ever: Kieren Lovell from @Cambridge_Uni UIS #elncam
11:39 AM - 13 Jan 2017

Hannah Haines
@bettymoonwalks

Kieran Lovell just providing the best speaker biog ever - I'd trust my data management to a nuclear sub veteran! #elncam
11:38 AM - 13 Jan 2017

Open Data Cambridge
@CamOpenData

This talk will look at things that have happened recently that have compromised stored data #elncam
11:35 AM - 13 Jan 2017

Open Data Cambridge
@CamOpenData

There are problems with both locally hosted and cloud ELN solutions - Kieren Lovell #elncam
11:38 AM - 13 Jan 2017
Local or cloud data storage? Questions to ask about any data storage arrangement #elncam

11:42 AM - 13 Jan 2017

Kieren Lovell: sometimes policies are so strict that they are pointless - nobody adheres to them anyway. #elncam

11:40 AM - 13 Jan 2017

2

Passwords: think passphrase not password, 3 random words together or use Lastpass Kieren Lovell #elncam

11:50 AM - 13 Jan 2017
Kieren Lovell: All successful hacks at Cambridge since May 2015 were due to human error - password like 'Password123' or 'Cambridge' #elncam
11:43 AM - 13 Jan 2017

Good password advice - recommended to use three random, memorable words that you don't ever write down #elncam
11:51 AM - 13 Jan 2017

Even if researchers think their data/research isn't important, the reputational damage of security attacks on the university is huge #elncam
11:47 AM - 13 Jan 2017

Interesting hearing about security issues and anecdotes here at @Cambridge_Uni #elncam
11:48 AM - 13 Jan 2017
Three classes of research data according to Home Office regulations introduced by Kieren Lovell #elncam

11:48 AM - 13 Jan 2017

University Information Services offer compliance checks to help with your data security #elncam

11:50 AM - 13 Jan 2017

Kieren: sometimes the rules are complex and difficult to interpret - the IM is there to help with guidance! #elncam information-management.uis.cam.ac.uk twitter.com/martateperek/s...

11:52 AM - 13 Jan 2017

3  1
Frightening: Email is as secure as a postcard - Kieren Lovell
#elncam
11:52 AM - 13 Jan 2017

Kieren from UIS is recommending passphrases over passwords, as do xkcd xkcd.com/936/ #elncam
11:52 AM - 13 Jan 2017

Important to remember that public wifi is not secure. Use a vpn service - @Cambridge_Uni vpn not compatible with iPhone or iPad #elncam
11:53 AM - 13 Jan 2017
Can use a modified Raspberry Pi: pineapple as a VPN #elncam
11:53 AM - 13 Jan 2017

Antivirus software is important to have, but it won't cover you against everything #elncam
11:55 AM - 13 Jan 2017

Postdocs seem to be the most targeted people in the @Cambridge_Uni for cyber attacks, followed by with finance and admin #elncam
11:58 AM - 13 Jan 2017

Confidence is key 1). Kieren Lovell once got in to secure area with slice of cheese rather than a security card! #elncam
12:00 PM - 13 Jan 2017
The first session after lunch offered providers' perspective on Electronic Lab Notebooks and was kicked off by Professor Jeremy Frey from the University of Southampton who developed Lab Trove - an open source electronic lab notebook.
First speaker of the afternoon session is @profechem introducing an open source ELN @labtrove labtrove.org #elncam
1:17 PM - 13 Jan 2017

We are streaming live again this afternoon, with improved picture, sound and slide share cam.adobeconnect.com/osc #elncam
1:16 PM - 13 Jan 2017

We started by looking at what academics would like from ELNs, now we're hearing about possible solutions from providers #elncam
1:07 PM - 13 Jan 2017

Jeremy Frey @profechem on developing an open source ELN to support open and interdisciplinary science #elncam
1:10 PM - 13 Jan 2017
The 'why' story behind the research you are doing is important, lab books tend to focus on the 'what' @profechem #elncam

Mention of LabTrove funded by E-Science prog and @Jisc - flexible open source web based solution for researchers #elncam @profechem

Nice functionality in @labtrove ELN - all links created are bidirectional (appear from both places) - @profechem #elncam

Interesting use case: @profechem is using @labtrove ELN also as a place to report problems and create agendas for lab meetings #elncam
ELN do not work on their own, it is one part of a whole digital ecosystem in the lab which needs to be considered.

Nice demo by @profchem using @amazonecho to check the temperature in the lab! #elncam

Jeremy Frey @profchem at ELNCam: lab notebooks seldom record why an experiment was done. Something for an ELN template to enforce?

The next speaker was Rory MacNeil from Research Space talking about his integrated solution for Electronic Lab Notebooks.

Now we're hearing from Rory MacNeil @ResearchSpace on the importance of being connected #elncam
Open Data Cambridge
@CamOpenData

@ResearchSpace is a connected ELN. acts as link between data & tools used in research and a conduit between research and publishing #elncam
1:42 PM - 13 Jan 2017

Christopher Brown
@chriscb

Rory Macneil on RSpace - "connected" ELN linking between data & tools used in research and a conduit between research and publishing #elncam
1:42 PM - 13 Jan 2017

Marta Teperek
@martateperek

@ResearchSpace can connect various storage space, including @onedrive @googledrive and @Dropbox - @rory_macneil #elncam
1:43 PM - 13 Jan 2017

Aslam Ghumra
@aslamghumra

ELN, a researchers narrative which links research/data using tools to help with research and publishing. #elncam
1:48 PM - 13 Jan 2017
An ELN should enhance your existing workflow and integrate with other tools you use - Rory Macneil. A modular solution? 
#elncam
1:51 PM - 13 Jan 2017

Getting data out is critical to support the publishing workflow - ELN should be conduit rather than silo #elncam
1:52 PM - 13 Jan 2017

@chriscb reminds me a lot of the @jisc codesign discussions about the research environment of the future. Are ELNs the solution? #elncam
1:52 PM - 13 Jan 2017

#elncam Hadn't heard of @SlackHQ before. Useful communication tool. 
1:53 PM - 13 Jan 2017
If you are a PI moving institutions you can move your data from one @researchspace to another #elncam
1:54 PM - 13 Jan 2017

Designed for use in university labs, @ResearchSpace allows lab admins and PIs to see but not edit all lab entries #elncam
1:57 PM - 13 Jan 2017

@PHerterich @Jisc Indeed. That's why I'm here! Lots of useful information that reinforces much of the research env discussion.
#elncam
1:57 PM - 13 Jan 2017

#elncam Integration of ELNs with repositories, other ELNs, ORCID is going to be extremely useful.
1:57 PM - 13 Jan 2017

The last (but surely not least!) speaker in the providers' session was Dan Ormsby from Dotmatics, who were also the sponsors of the event. Dan spoke about Dotmatics ELN - a professional solution, particularly useful for researchers who think about commercialising their research or concerned about IP.
Now we're hearing from Dan Ormsby from @dotmatics, an established provider. They have kindly sponsored us today #elncam
2:08 PM - 13 Jan 2017

Audience comment: the ideal is NOT to replace the labbook as a journal. You want to record then & there, i.e. take photos on phone #elncam
2:36 PM - 13 Jan 2017

After the break we will be breaking into focus groups, reporting back at 15:45 #elncam
2:31 PM - 13 Jan 2017

After a quick coffee break, we had three focus group discussions, chaired by Ian Bruno, Rosie Higman, Marko Hyvonen and Kieren Lovell.

Focus group 1: managing the supplier lock in risk #elncam
2:31 PM - 13 Jan 2017
Big thanks to Kieren Lovell for chairing the focus group on supplier lock in #elncam
4:27 PM - 13 Jan 2017

Focus group 2: sustainability of ELN solutions #elncam
2:32 PM - 13 Jan 2017
Many thanks to Ian Bruno from @ccdc_cambridge for chairing the focus group on sustainability of ELN solutions #elncam
4:26 PM - 13 Jan 2017

Focus group 3: human element of ELN implementation #elncam
2:33 PM - 13 Jan 2017

Due to massive interest in focus group on human element of ELN implementation we had to split it into two! #elncam
4:21 PM - 13 Jan 2017
And here is the other human element of ELNs focus group #elncam. Thank you @RosieHLib & @HyvonenGroup for facilitating
4:23 PM - 13 Jan 2017

Finally, we moved on to the panel discussion with all the speakers, chaired by Chris Brown from Jisc

Many thanks to @chriscb @jisc for chairing our #elncam panel discussion
4:09 PM - 13 Jan 2017
1

The panel discussion will now be chaired by Christopher Brown of @Jisc #elncam
4:10 PM - 13 Jan 2017
Exciting! @jisc invites researchers to vote: What should next-generation research look like? jisc.ac.uk/rd/get-involve…
#elncam @chris
4:12 PM - 13 Jan 2017

What should a next-generation research environment look like?
We think it’s time to define the future of research environments and determine how such environments can support the current and future
jisc.ac.uk

We're wrapping up with Ian Bruno from @ccdc_cambridge giving closing remarks, thanks to all who have come & followed along #elncam
4:49 PM - 13 Jan 2017

A big thank you to @martateperek and @CamOpenData for organising such a great ELN event #elncam
6:23 PM - 13 Jan 2017
Kirstie Whitaker
@kirstie_j

Lovely #MozWow reunion with @PHerterich in Cambridge after #elncam (she) and #FriendlyGithub (me) @MozillaScience
8:32 PM - 13 Jan 2017 · Market Deeping, England

Poonam (Hiwal) Yadav
@pooyadav

It is a real pleasure hearing your talk Neil @npch at @MooreLib, very engaging & informative #researchsoftware #elncam @CamOpenData twitter.com/npch/status/82...
11:16 AM - 16 Jan 2017

Poonam (Hiwal) Yadav
@pooyadav

Lesson learnt: we should publish our code + data with our publication for reproducibility #elncam @CamOpenData #ResearchSoftware
11:21 AM - 16 Jan 2017