STOCKS Training: The embedded Electronic Lab Notebook

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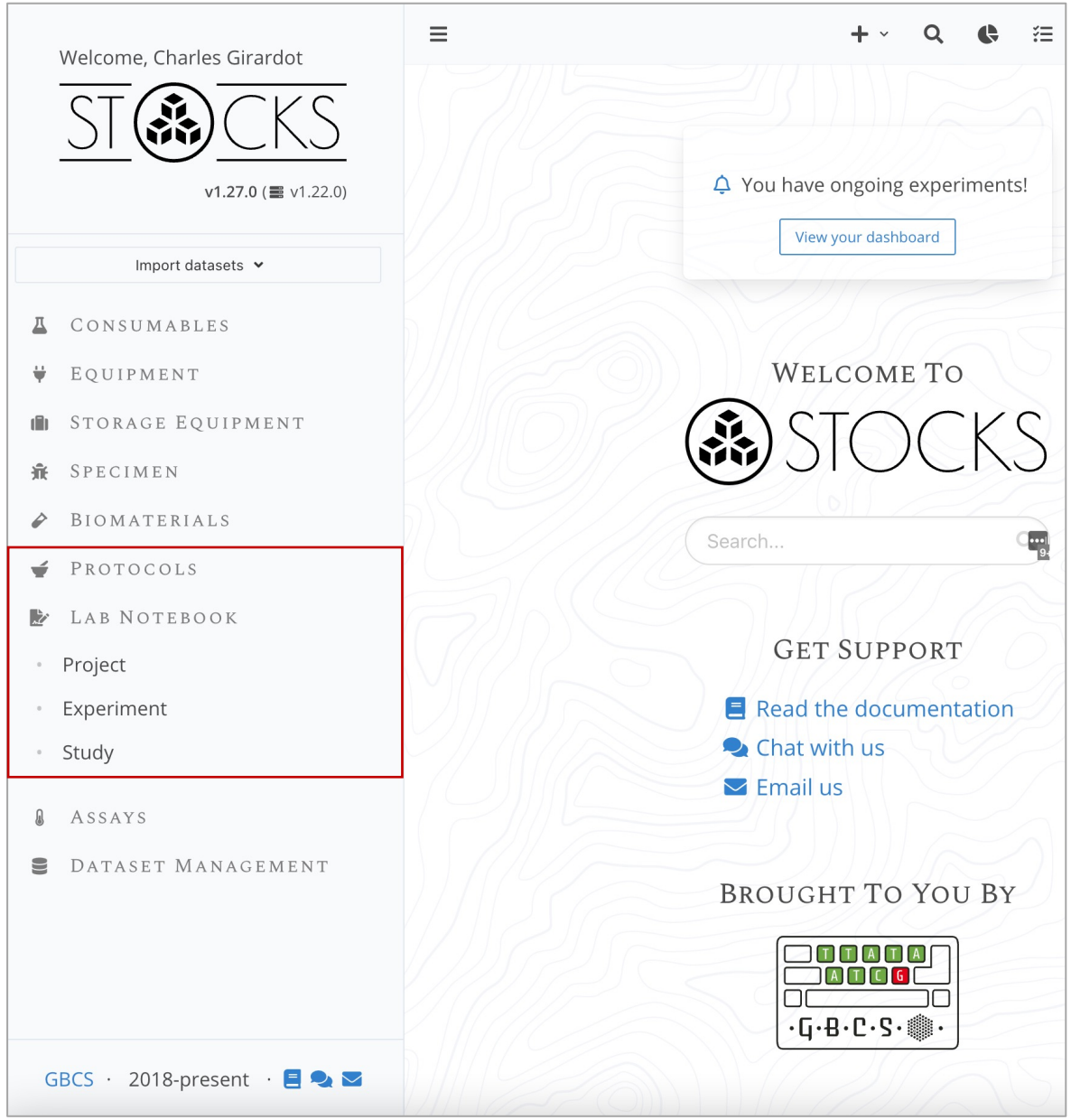
Genome Biology Computational Support (GBCS)

Your ELN is composed of experiments organized into projects



- The ELN is primarily composed of **Experiments** that belong to **Projects**
- The **Protocols** are tightly related to the ELN

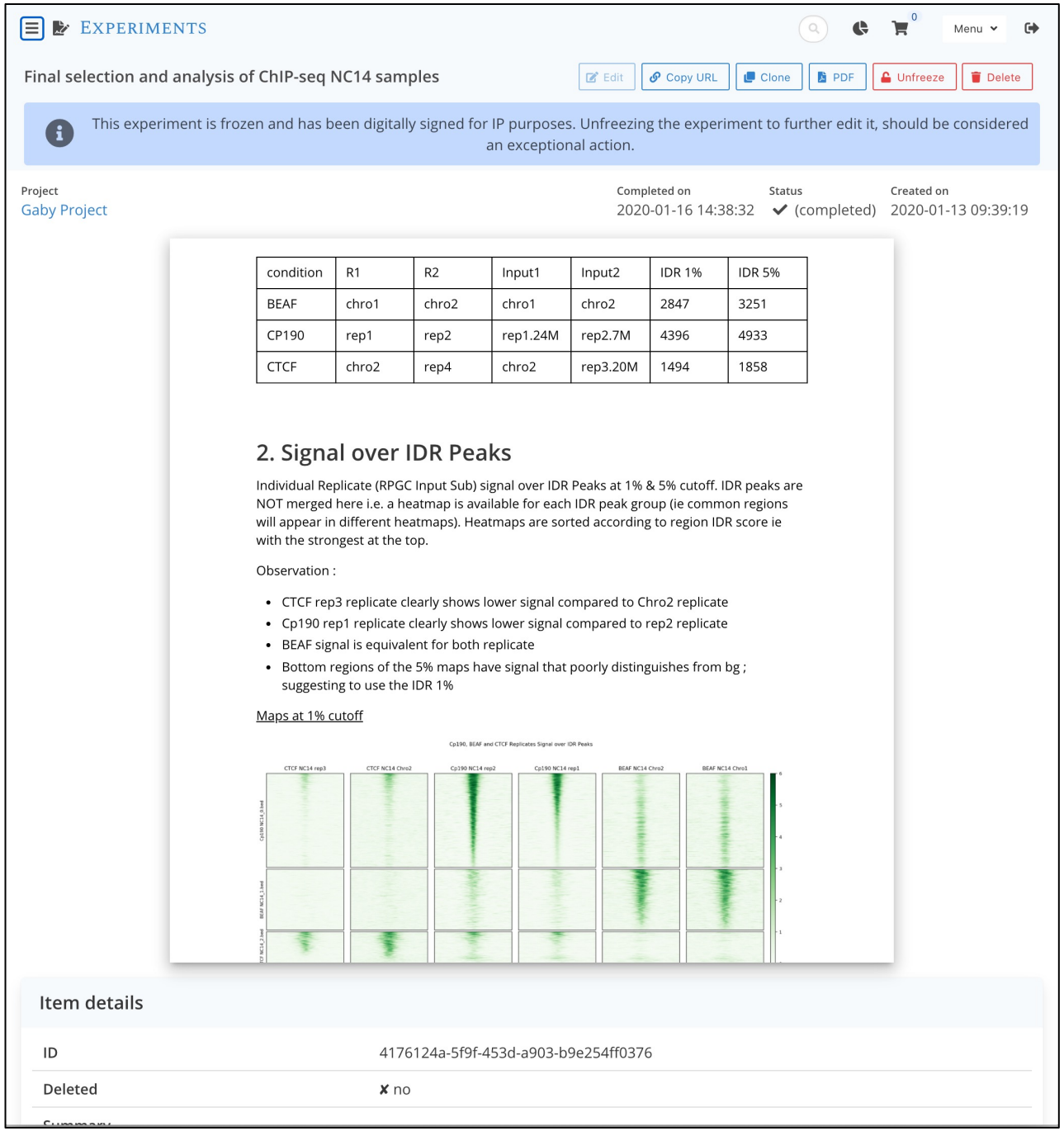
The ELN's experiment

An experiment …

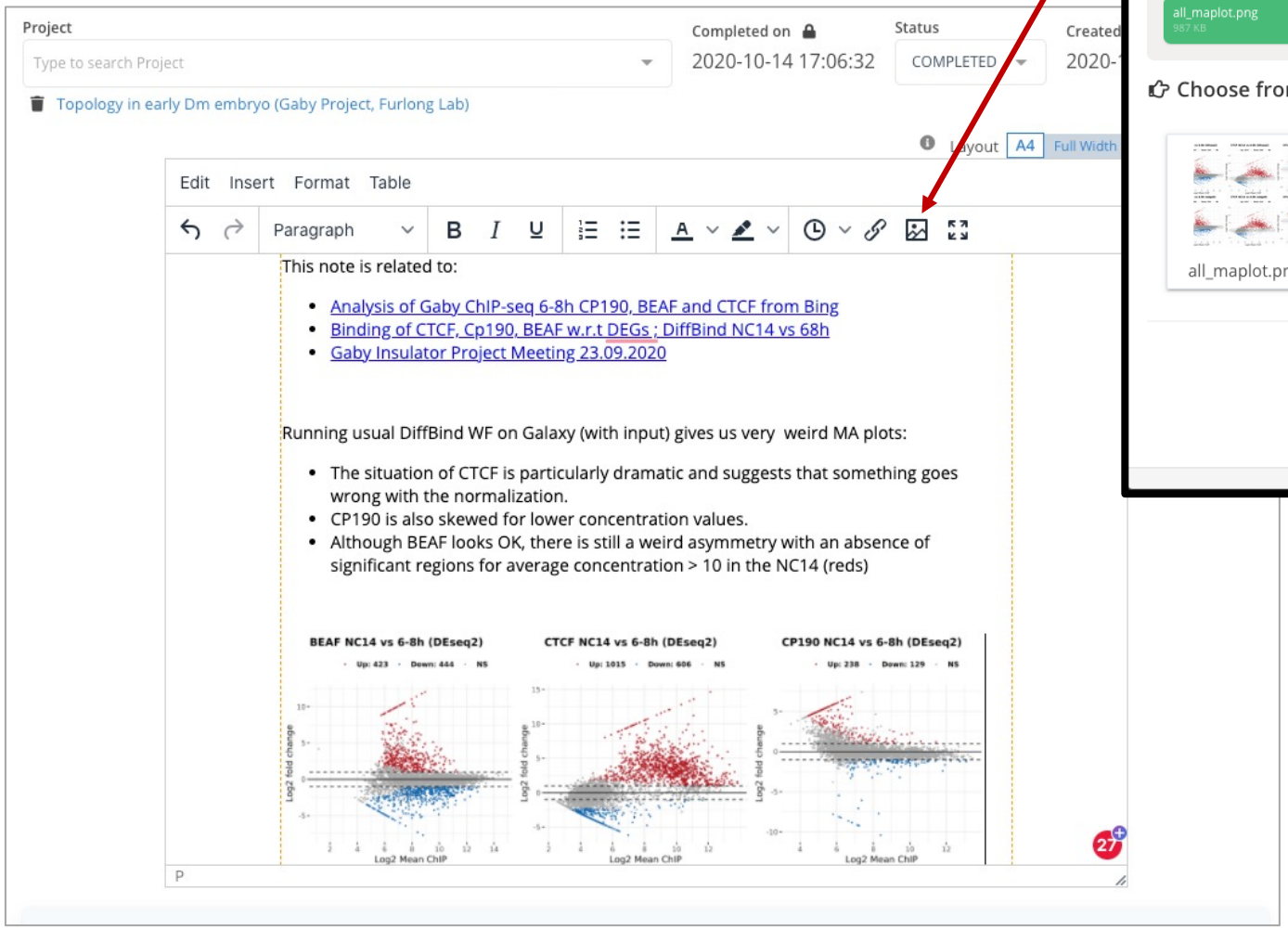
- reflects the execution of one (or more) protocol
- contains all the details not always described in the protocol
  - results and conclusions (pictures, tables…)
- belongs to one project

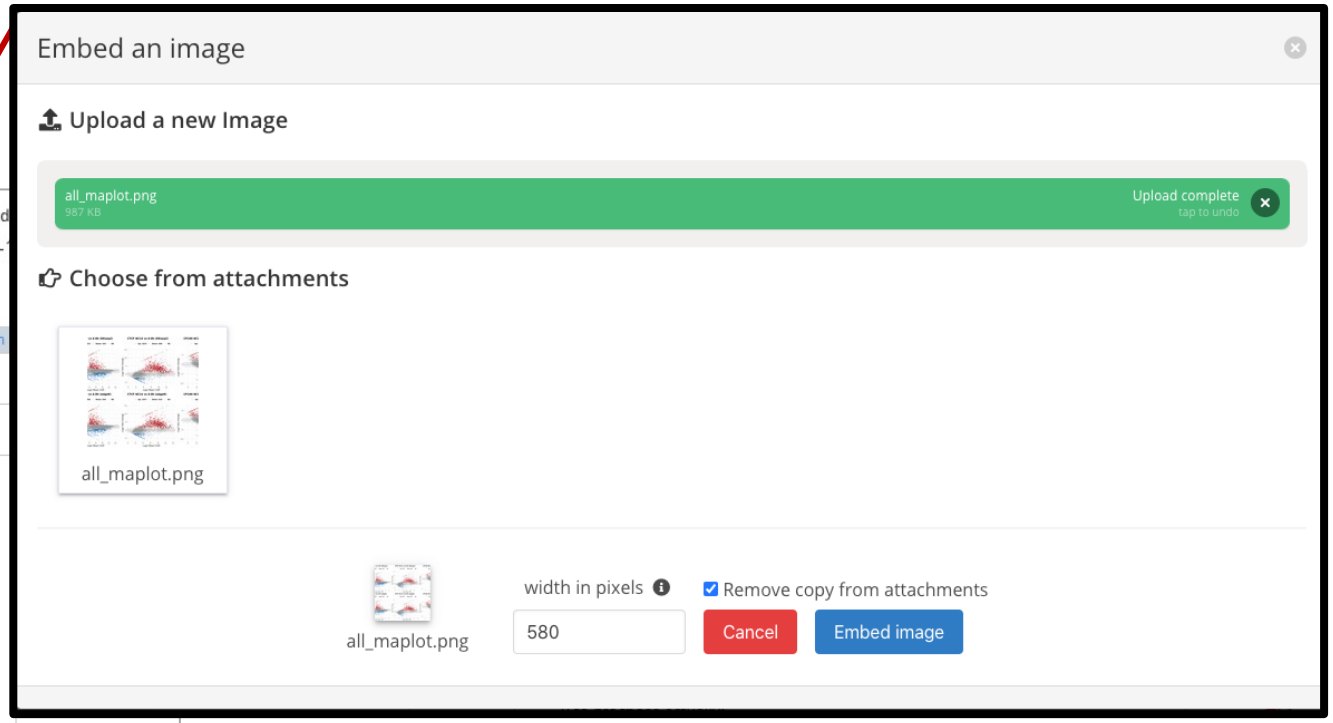
Main features:

- Word-like embedded text editor
- Insert list, tables & image (png, jpeg)
- Attach documents
- Link any items from lab inventory
- Share
- Freeze and electronic timestamping (IP protection)
- Export as PDF or Archive
- Link Samples (both **In** and **Out**)



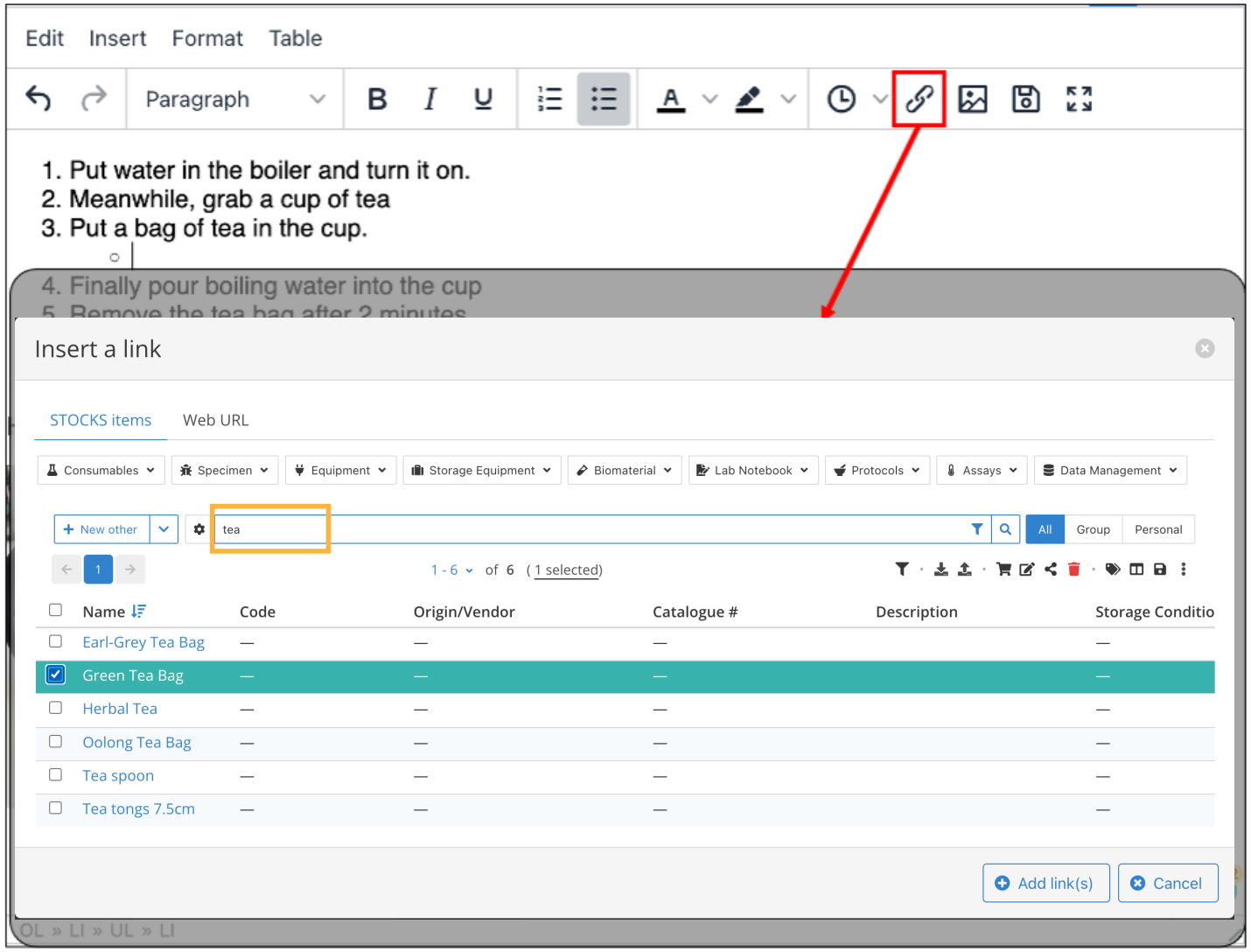
Embed pictures in your notes



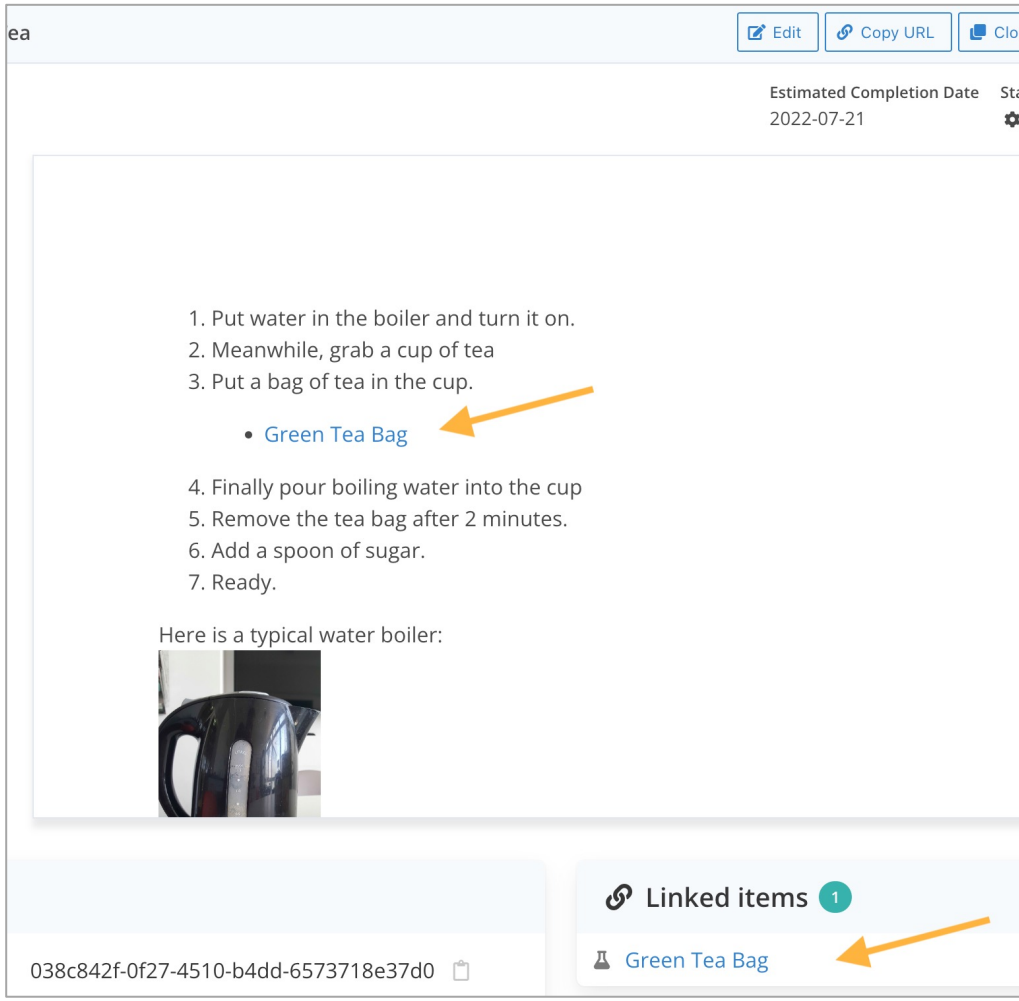


- No direct copy-paste

Reference any STOCKS items

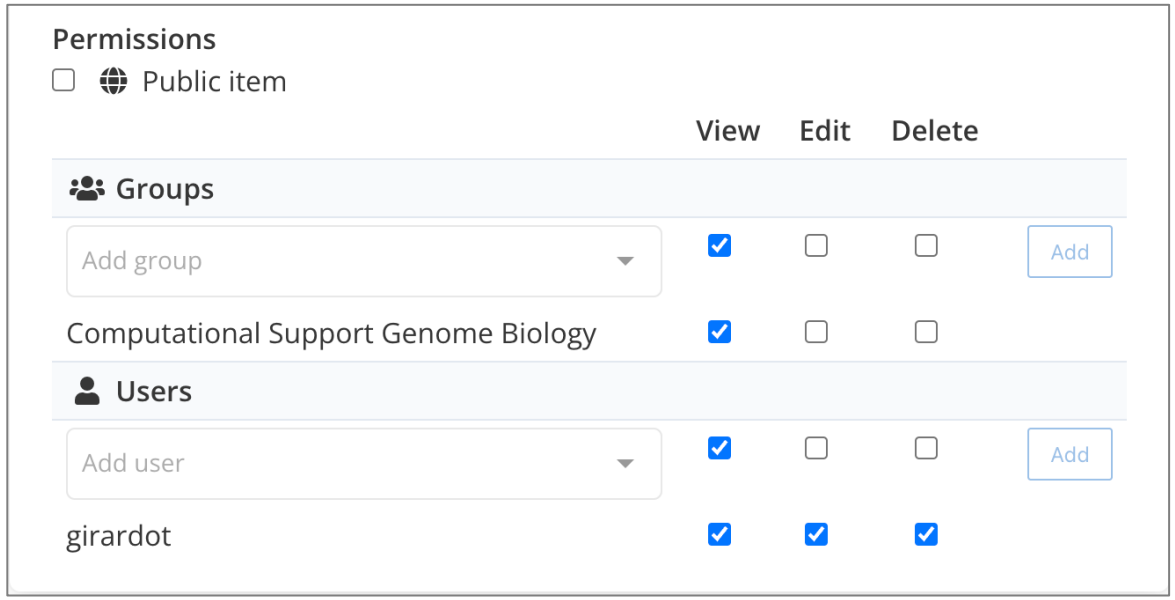


Insertion of many links at once possible



An advanced permission/sharing system

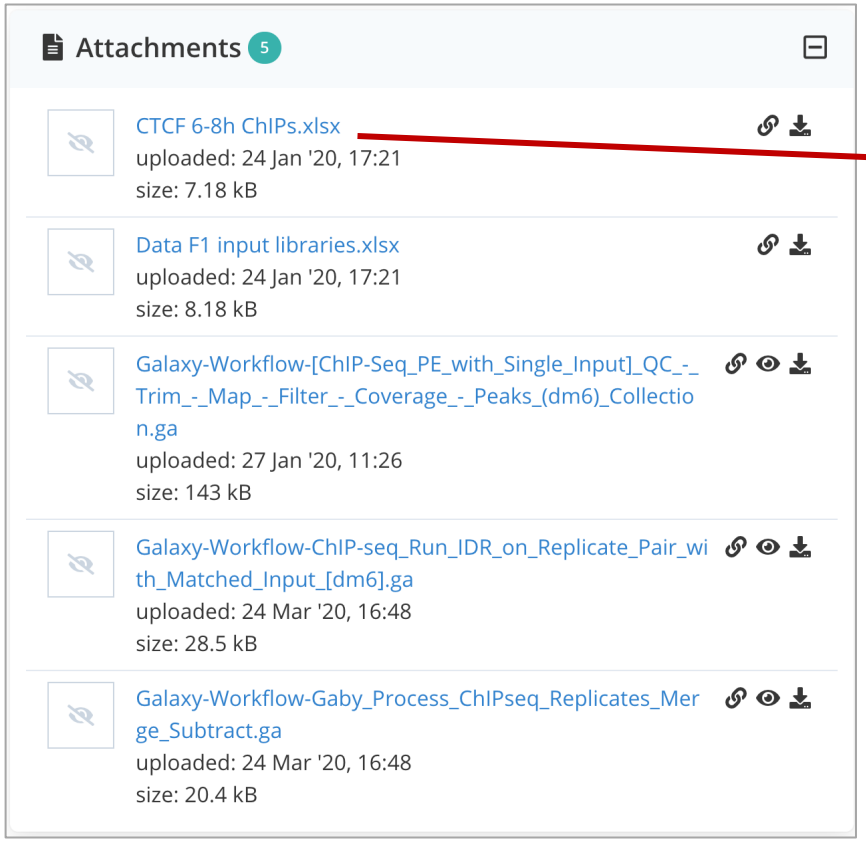
- Permissions (View, Edit, Delete) can be granted to groups or individuals
- Public Items can be **viewed** by anyone **who can log in** STOCKS

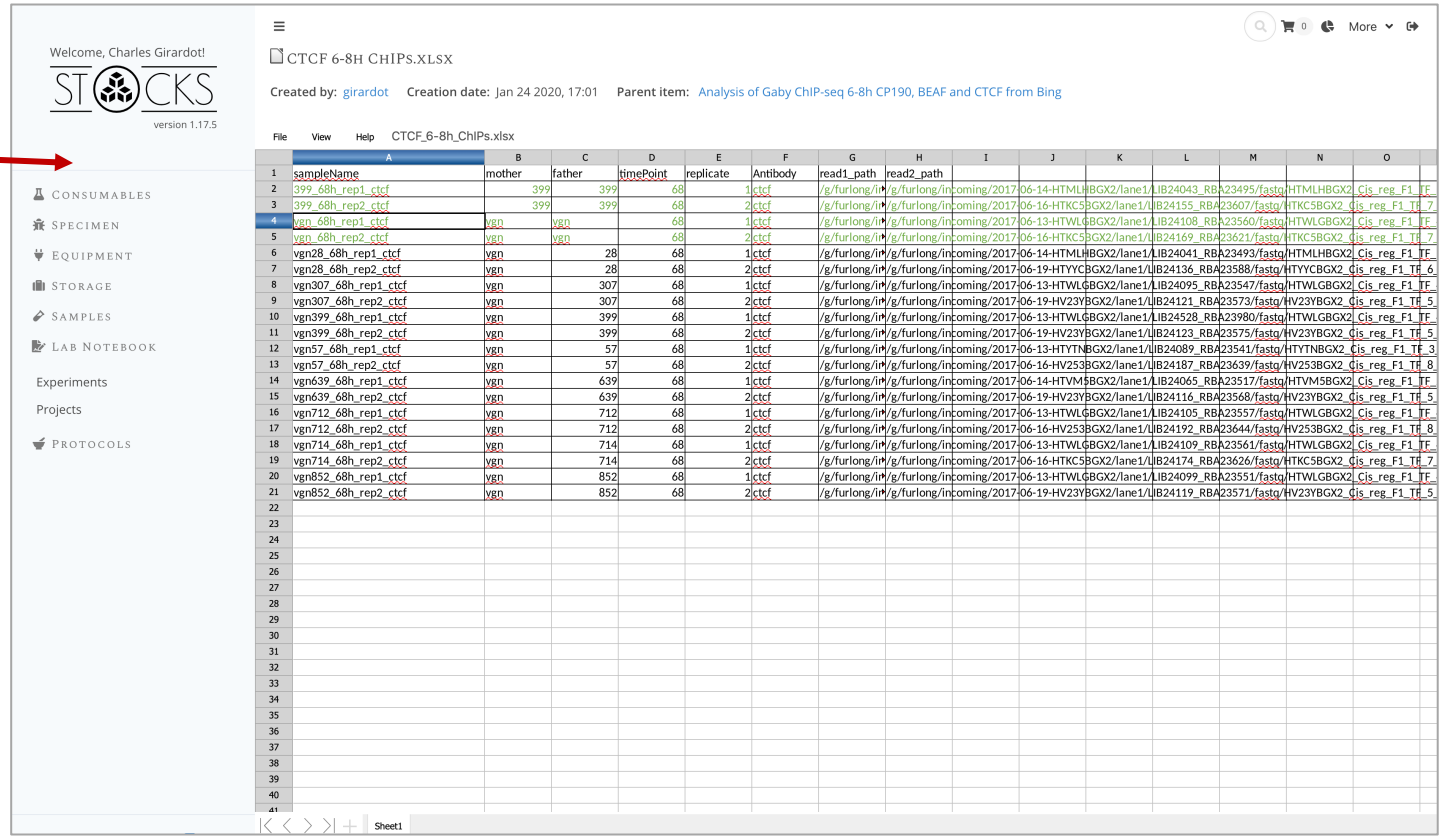


➢ Sharing your experiment in **Edit** mode is most likely **NOT** a good idea
  - STOCKS does NOT track individual edits
  - Only share experiments where authorship is NOT an issue

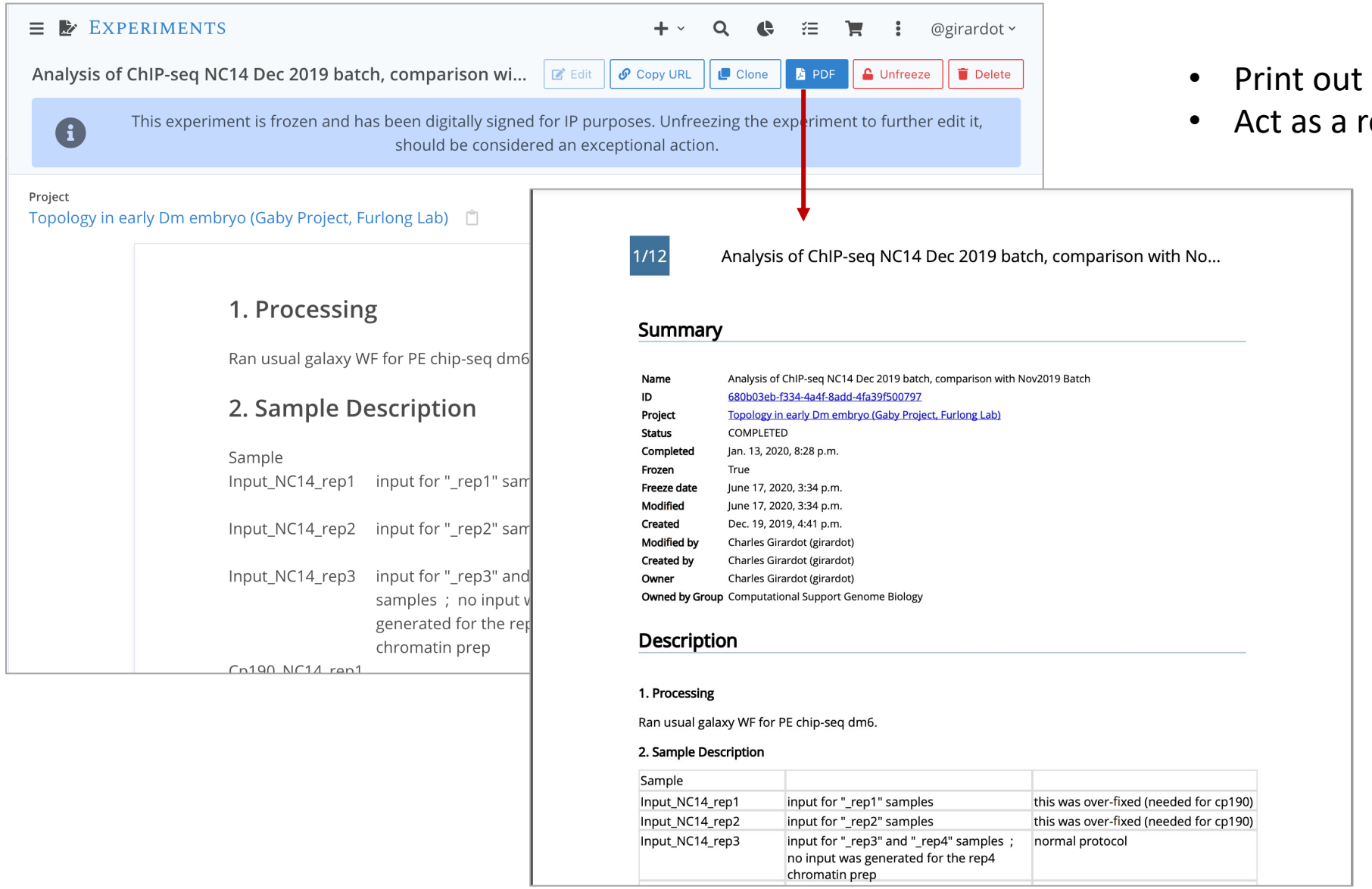
Collaborative Work & LOOL

- Available for all compatible attachments (ie office docs)
- Supports collaborative work
- Experiment's permissions apply



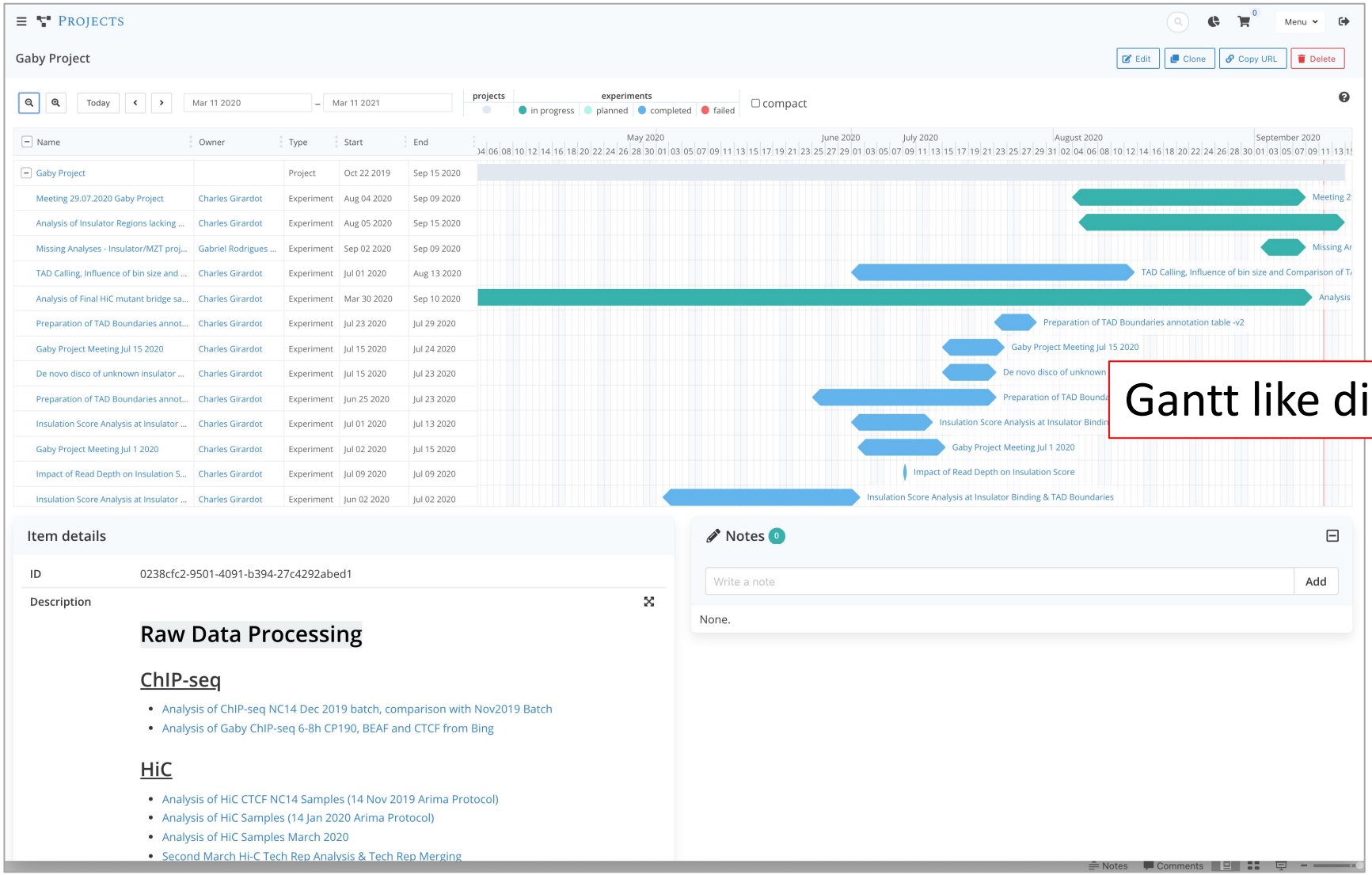


Export experiment as PDF



- Print out when needed at the bench
- Act as a report to e.g. email

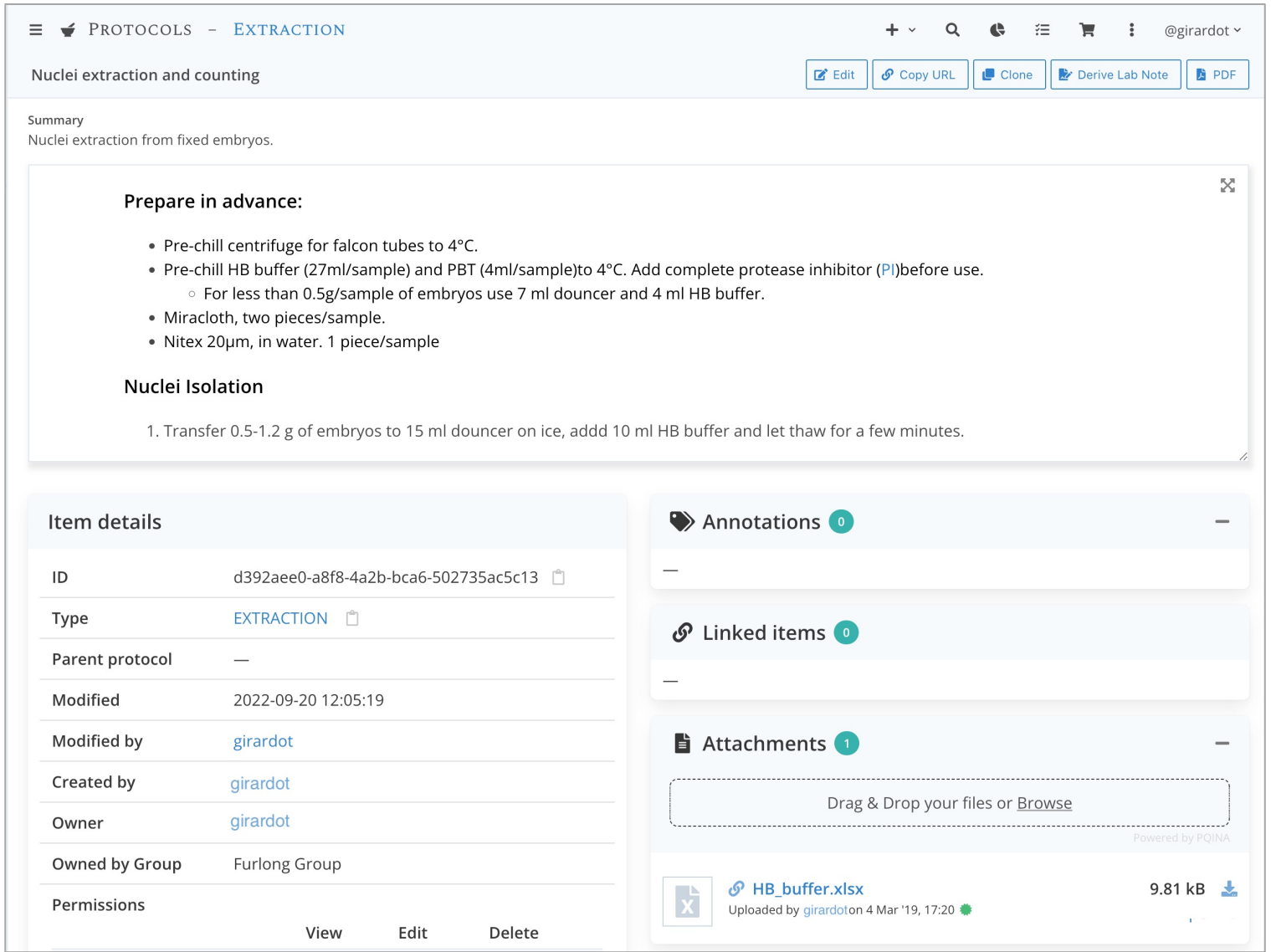
Projects group related experiments



Gantt like display of all experiments

Protocols have similar characteristics as experiments

=> A protocol describes how to perform an experiment

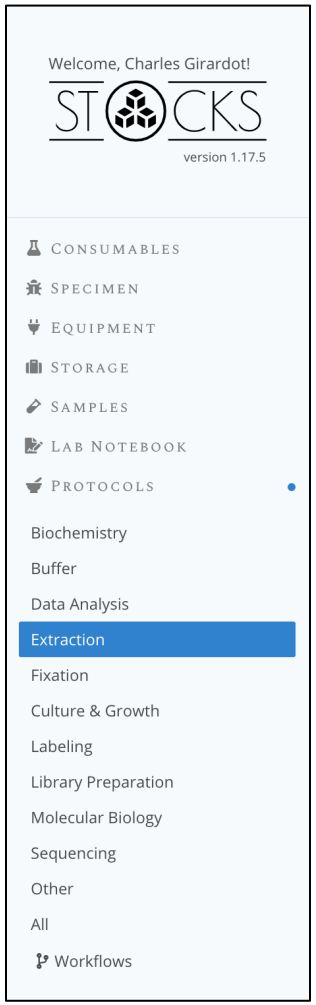


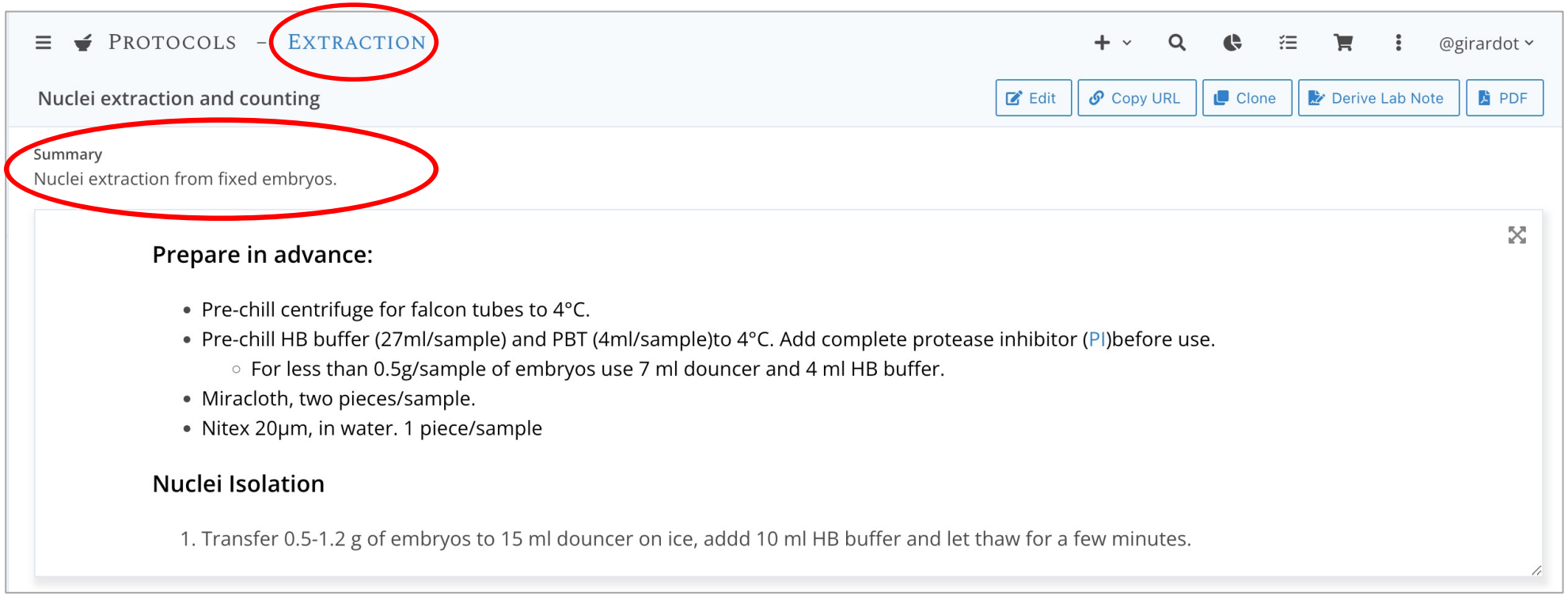
Like experiments:

- Formatted text with images, tables …
- Linked Items
- Permissions/Sharing
- Attachments

- Copy-paste from e.g. word documents usually works but is not guaranteed (double check !!)

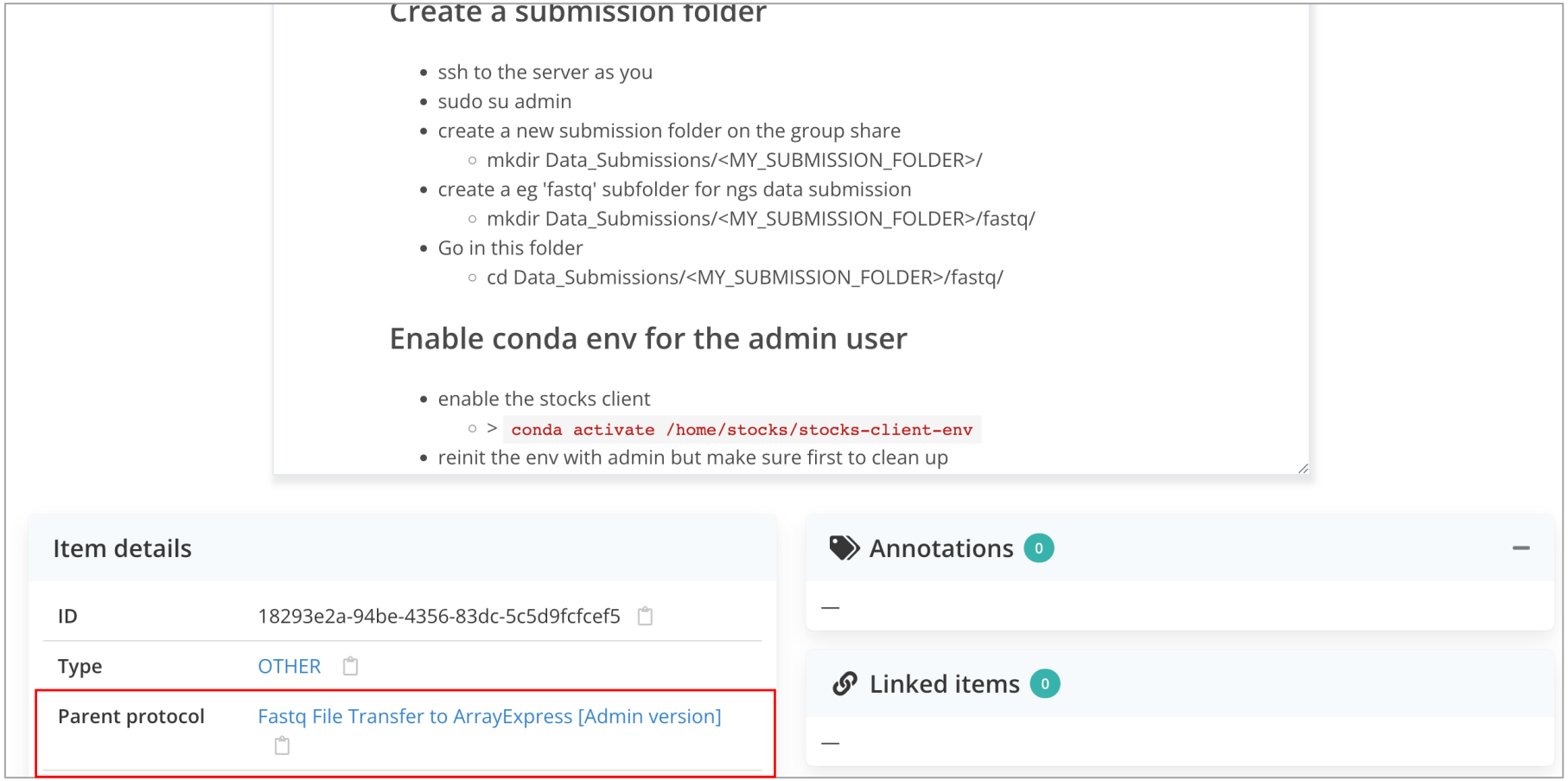
Protocols type and summary to support data deposition





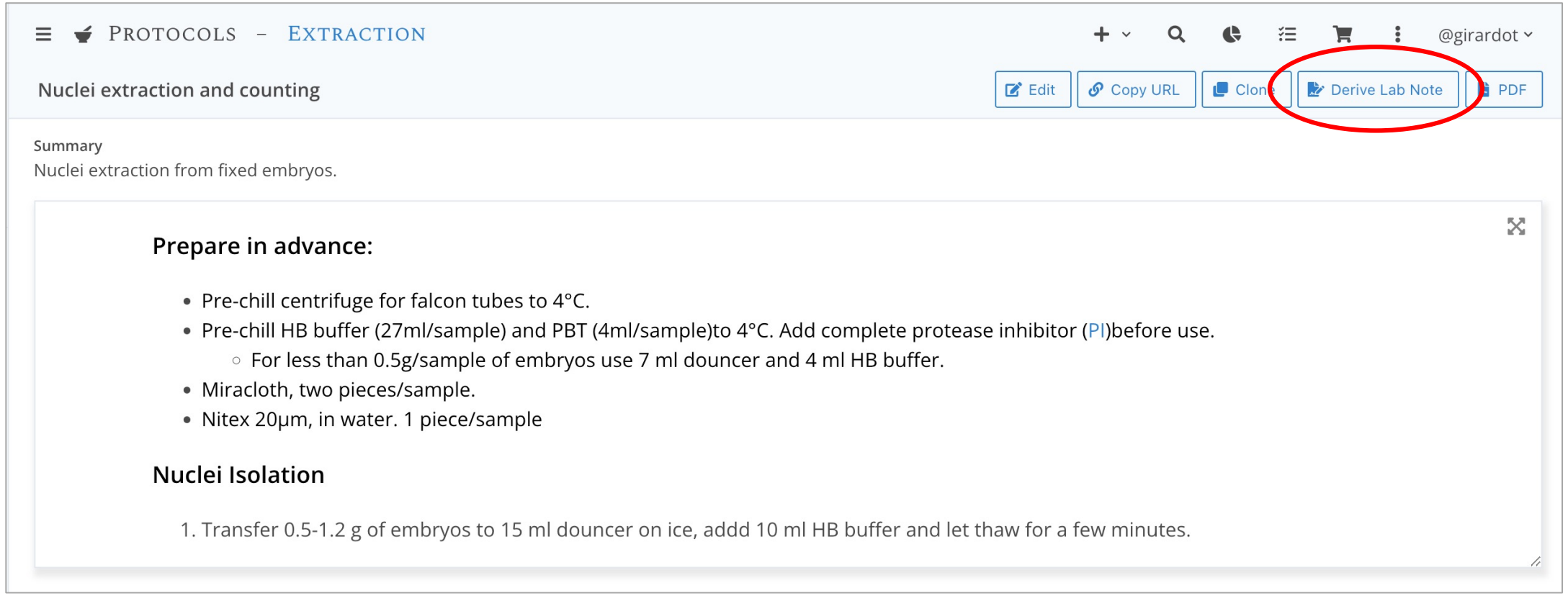
- Different **protocol types**
  - ✓ Match public repo types
  - ✓ More types can be added by your admin
- **Summary**: unstructured text used for submission to public repositories
  - ✓ Experiments content are not submitted to public repositories

Protocol versioning to reflect technological development



- Reflect technical improvements
- Keep previous versions untouched
  - Important when protocols were already used and referenced

Protocols act as templates to create experiments



- Create a new experiment
- Copy the protocol content (incl. images) into the experiment
- Duplicates all attachments
  - E.g. excel spreadsheet to compute quantities …

Protocols should not be changed once used in production

- An experiment must be self-contained
  - Always “Derive Lab Note” from protocol
  - Force you to make sure protocols are uploaded
- Protocols may be linked from different places
  - Never modify a protocol that might have been used by someone
  - Make protocols read-only once released for production.
  - Make a new version if changes should be done

Experiment freezing enables IP protection

Change status

Freeze

Experiment Creation
- Status: “in progress” or “planned”
- Creation Date set
- Expected Completion Date (ECD)

Experiment Completion
- Status: “Completed” or “Failed”
- Completion Date (CD) set

Experiment Freeze
- Frozen == True
- Archive digitally time-stamped

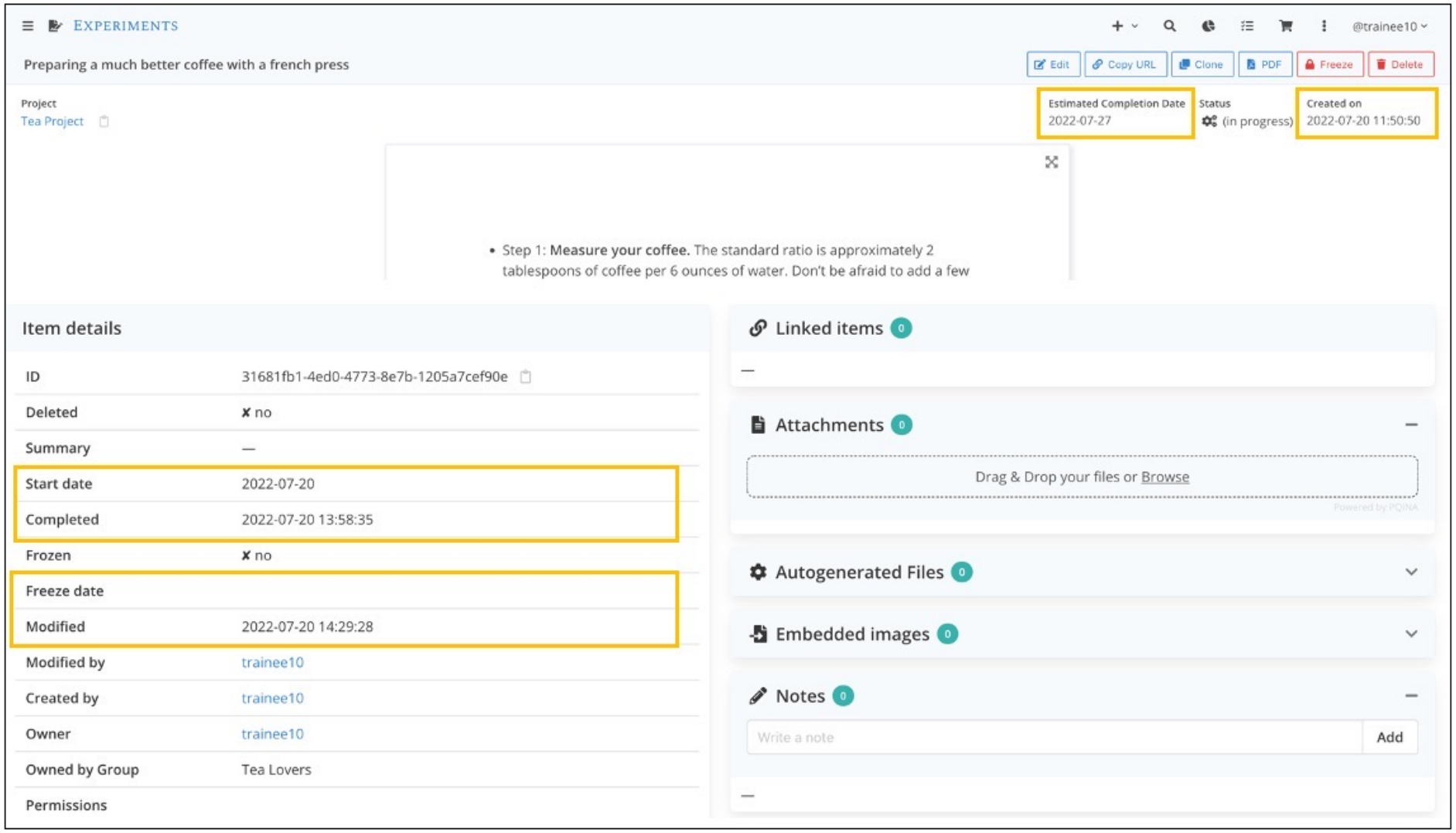
Day 0 | ECD (eg Day 7) | Completion Date (CD) | CD + 5 Days | Freezing Date | Signed Archive

Experiment Overdue

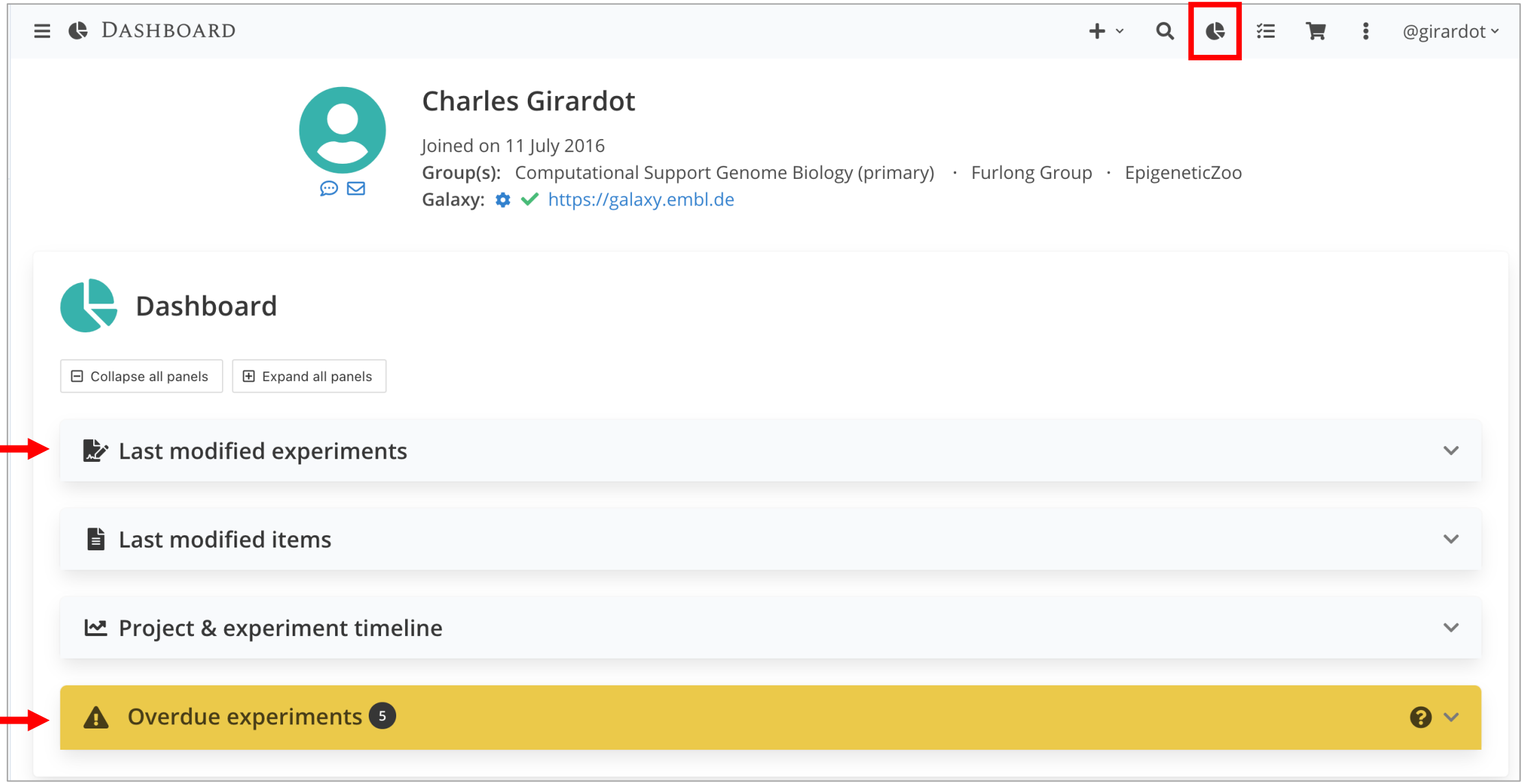
Auto-Freeze

Automatic PDF generation with timestamp every night

The many dates of an experiment



Your dashboard lists ongoing experiments



Frozen experiments can be unfrozen !

- Unfreezing is still possible
- Upon unfreezing:
  - Nightly snapshot process restart
  - No automatic freezing! Do not forget to freeze back asap.
- Do not abuse this i.e. it can get expensive in space
- Useful for experiment that last very long (with long waiting period)
  - although creating multiple experiments should be preferred.

Conclusion

- The ELN is a better solution than paper notebook
  - Searchable, editable, shareable …
  - Accessible from anywhere
- May be used without the other modules
  - Works best together with the lab inventory and protocols
  - Maximized value when also coupled with Biomaterial (samples)
- Sharing in edit/delete should be handled with care
- Once shared and/or used, protocols should not be edited

Thank you for your attention

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Questions ?