Summary

PhD students in Chemistry will learn hands-on Research Data Management (RDM) skills transferable to their research practices. They will contextualize their research into RDM best practices (day 1), discover appropriate tools (day 2) and work on a project (day 3) for the course accreditation.

Content

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DAY 1: RDM GOOD PRACTICES & EPFL SOLUTIONS
Main scope: PhDs will contextualize their current lab RDM practices in light of FAIR principles
Topics that could be included in the final proposal:
- Contextualize the FAIR data principles in the field of Chemistry
- Differentiate between raw data, processed data and code
- Data formats, exporting & conversion
- Data access & re-use from data repositories
- Differentiate between storage, back-up and preservation solutions
- Compare ELNs, Box, Google Drive and other collaborative online tools
- Organization, file naming and documentation
- Discover metadata for research data
- Deal with proprietary data and licensing
- Data archiving, publishing and re-use via data repositories (discover re3data.org and dataset search engines)
- Discover the SNSF DMP as a guideline

DAY 2: TOOLS HANDS-ON
Main scope: PhDs will install and discover software and/or platforms to improve their current RDM practices
Possible tools to choose from for the final proposal:
- Versioning:
  -- Git (command line, GitHub, GitLab, GitTortoise, "")
- Syncronization tools
- Collaboration:
  -- ELN (EPFL ELN, SLlMs, OpenBis, ...)
  -- Cloud solutions (Switch, EPFL GDvive, OwnOloud, ...)
  -- Collaborative writing tools (Authorea, Overleaf, HackMD, ...)
- Metadata
- Cookbooks
- Databases
-- Protocols management
- Data manipulation
-- Data visualization for publication
-- Open tools for data analysis
-- Data formats converters

DAY 3: PROJECT
Main scope: PhDs will use recently discovered tools to plan their RDM activities for a real research project
- TBD for the final proposal

Learning Outcomes
By the end of the course, the student must be able to:

• Define Data Life-Cycle of his/her research
• Identify Specific softwares
• Apply RDM good practices