

EIN ELEKTRONISCHES LABORBUCH IN EINER FORSCHENDENGRUPPE EINFÜHREN



TECHNISCHE  
UNIVERSITÄT  
DARMSTADT

# ELN – GOOD PRACTICES AND LESSONS LEARNED

RDA Deutschland e.V. Tagung 2023

WHAT IS AN ELN AND WHAT SHOULD IT PROVIDE?

# ELECTRONIC **LAB** NOTEBOOK



Bild: Polina Tankilevitch, pexels.com



# WITH SO MANY TOOLS – ARE THERE **BEST PRACTICES?**



eLabFTW



openBIS  
Biology Information System



<LAB FOLDER>



Bild: Lukas, pexels.com

THE CONSEQUENCES OF THE WHOLE ENDEAVOUR MAY BE SUMMARIZED AS FOLLOWS: THE PREDICTED CHANGES BROUGHT ABOUT BY A FAIR DATA INFRASTRUCTURE WILL NOT REPLACE SCIENTISTS, BUT SCIENTISTS WHO USE SUCH AN INFRASTRUCTURE MAY REPLACE THOSE WHO DON'T.

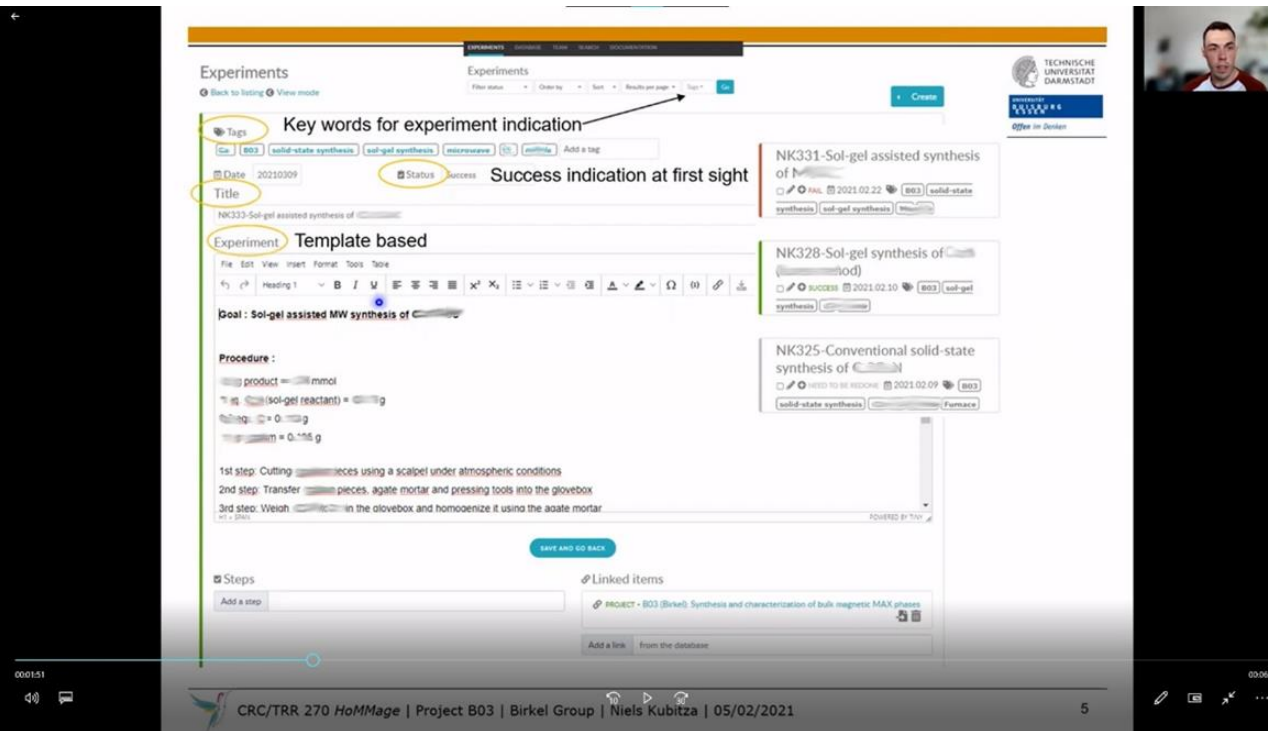
Scheffler, M., Aeschlimann, M., Albrecht, M. et al. „FAIR data enabling new horizons for materials research.“ **Nature** 604, 635–642 (2022). <https://doi.org/10.1038/s41586-022-04501-x>

# SUPPORTING STRUCTURES ARE ESSENTIAL FOR SUCCESS

technical support demand is manageable; real challenge is lack of RDM rules and guidelines.

Motivation and awareness are underestimated; additional effort must be met with incentives and added value.

Practical training offers and accompanying structures are important; establishing routines necessary.



Experiments

Tags: **Key words for experiment indication**

Date: 20210309

Status: **Success** **Success indication at first sight**

Title: **Template based**

Experiment: NK333-Sol-gel assisted synthesis of ...

Goal: Sol-gel assisted MW synthesis of ...

Procedure:

1st step: Cutting ... pieces using a scalpel under atmospheric conditions

2nd step: Transfer ... pieces, agate mortar and pressing tools into the glovebox

3rd step: Weigh ... in the glovebox and homogenize it using the agate mortar

Steps: Add a step

Linked items: PROJECT - B03 (Birkel) Synthesis and characterization of bulk magnetic MAX phases

CRC/TRR 270 HoMMage | Project B03 | Birkel Group | Niels Kubitzka | 05/02/2021

## SCIENTISTS SHOW HOW THEY INTEGRATED THE ELN INTO THEIR RESEARCH ROUTINES AND WHICH FEATURES EXCELED

In heterogenic fields of research: **gather as many perspectives as possible** in order to draft common guidelines.

Dissemination research routines, here: **video tutorials**

## Experiments – tracking a process

How to create a good experiment entry

EXAMPLE



### Mandatory

- **Title** – short title, sum up content
- **Tags** – at least Elements used
- **Links** – at least Project
- **State** – Running or Completed



### Recommended

- **Extra Fields** – Parameters, Variants
- **Attachments** – raw files, process data
- **template-based** – team-shared

- Better to have **minimal** none at all.
- Edits can **add information**
  - „Skeleton entries“ can
- Use Extra Fields for complex parameters, external I
- Cooperate on templates

# „YOUNG RESEARCHERS WANT SPECIFIC GUIDELINES“

But during introduction of an ELN those are **often lacking**.

**Too ambitious guidelines** collide with reality of practice

One approach: **minimal mandatory framework**, supplemented by recommendations; most successful become mandatory.



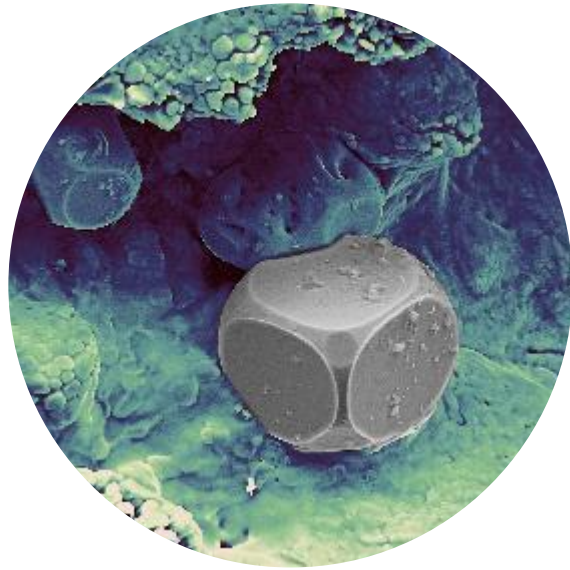
# HOW CAN **RDM TEAMS** HELP TO SPREAD ELN USAGE?





# START TEACHING RESEARCH DATA MANAGEMENT EARLY





# THANK YOU

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