

ChronosHub Webinar · 25-10-29

Designing scholarly publishing tech for everyday users

Autumne Franklin

Design by American Chemical Society



AMERICAN CHEMICAL SOCIETY



A Case Study: How We're Simplifying Research Data Sharing

Autumne Franklin

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Agenda

01 Submission Flow

02 Problem

03 Approach

04 Findings

05 Solution

06 Impact



ACS Publications' repository to store and share authors' primary research data.

chemdatabank.acs.org

A screenshot of the ACS Chemistry Databank website homepage. The page has a blue header with navigation links for "ACS Publications", "C&EN", and "CAS". The ACS Publications logo is on the left, and the ACS CHEMISTRY Databank logo is on the right, with the tagline "A collaboration with Dryad". A "Log In" button is in the top right corner. The main content area features a large heading "Advance science. Share your data." followed by a paragraph explaining the service. A blue button says "Deposit your data for free →". Below this is a section titled "How ACS Chemistry Databank works" with three columns: "Deposit Your Data", "Link to Primary Research Data", and "Curation". At the bottom, there is a section titled "Benefits of sharing your data" with two columns: "Boost your citations" and "Enhance your credibility". The background of the website features a microscopic image of plant cells on the left and a colorful molecular model on the right.

ACS Publications C&EN CAS

ACS Publications
Most Trusted. Most Cited. Most Read.

ACS CHEMISTRY
Databank
A collaboration with Dryad

Log In

Advance science. Share your data.

We are transforming chemistry research by providing researchers with immediately usable primary data through a simplified submission process, improving data usability via technology, and empowering the scientific community with accessible foundational research.

Deposit your data for free →

How ACS Chemistry Databank works

- Deposit Your Data**
If sharing, deposit prior to manuscript submission. Your data will be private during Peer Review.
- Link to Primary Research Data**
Enter your "private for peer review" link during manuscript submission in ACS Publishing Center
- Curation**
Work with human curators from Dryad to improve the usability and usefulness of your dataset.

Learn more about how ACS Chemistry Databank works →

Benefits of sharing your data

- Boost your citations**
Receive a citable DOI. Data sharing [increases your citations](#).
- Enhance your credibility**
Inspire reader confidence in your conclusions by sharing your data.
- Advance scientific progress**
- Ensure funder compliance**

AUTHOR SUBMISSION FLOW

01

Start manuscript submission in ACS Publishing Center

02

Choose ACS Chemistry Databank as their data repository

03

Log into ACS Chemistry Databank to begin their data submission

04

Describe their dataset

05

Create a README file

06

Upload the README file

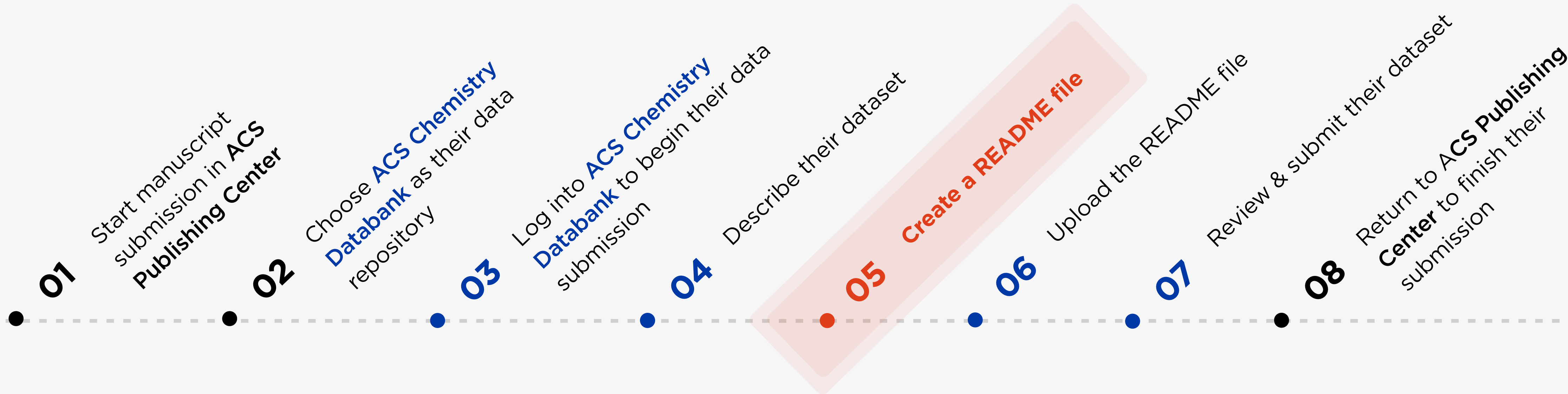
07

Review & submit their dataset

08

Return to ACS Publishing Center to finish their submission

AUTHOR SUBMISSION FLOW



The Problem

- Users must **pause their current submission**
- Users must **leave the platform**
- Most users are **unfamiliar with the format**

Primary Research Data

Do you have primary research data to share or would you be willing to deposit your data along with your submission?

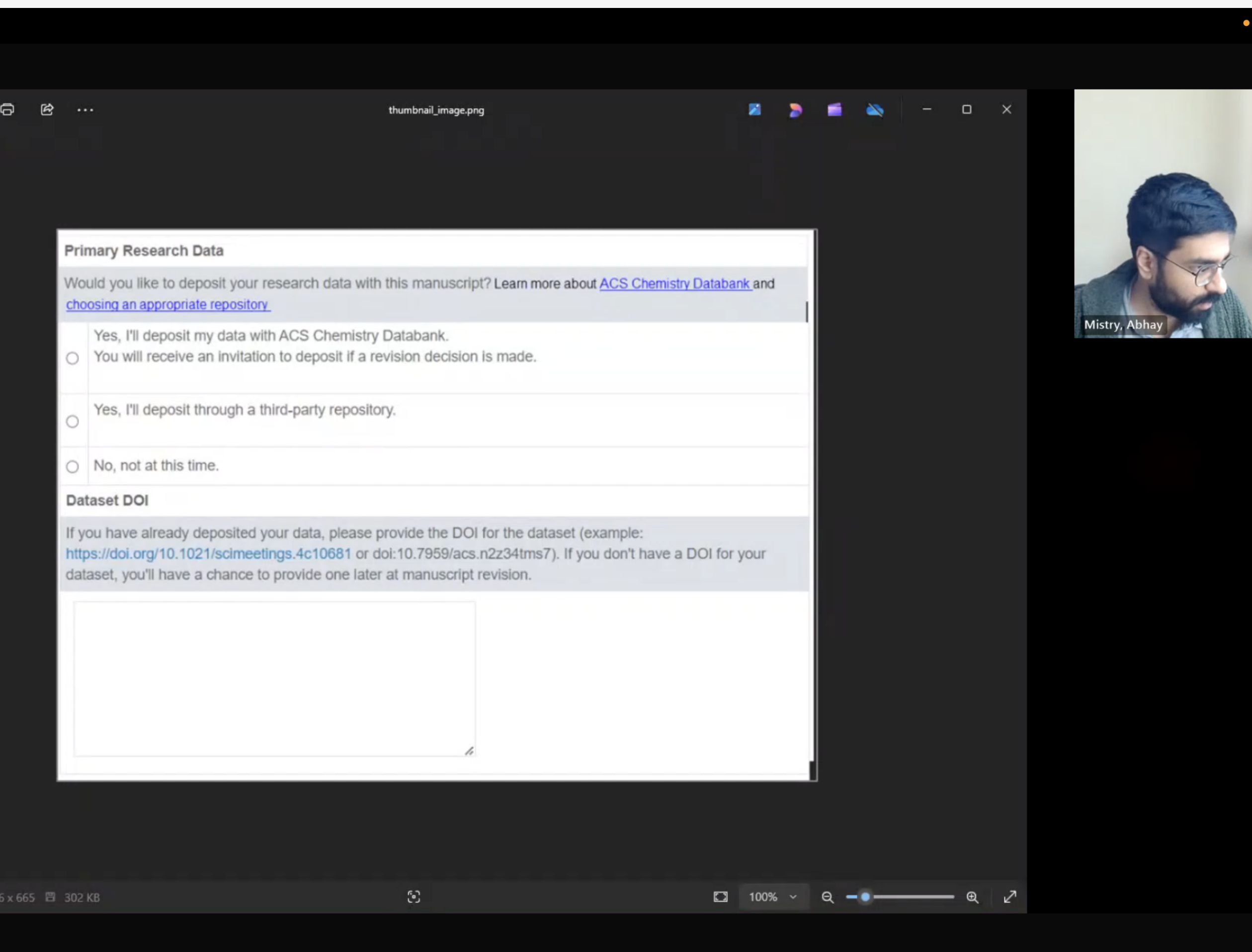
Note: If sharing research data, you must deposit before completing manuscript submission - If you still need to submit your data, please do so in [ACS Chemistry Databank](#) or an [alternative repository](#).

- I will share using ACS Chemistry Databank
- I will share using an alternative repository
- I prefer not to share

Enter the link to Primary Research Data *

Please enter the private URL. If your data is publicly accessible enter the DOI URL instead.

The primary research data sharing question in the ACS publishing center submission form.



Our Approach

Conduct remote moderated usability tests with a sample of researchers.

Team

Product Manager
Product Owner
Developer
UX Researcher
UX Designer/Researcher

Participants

8 Total Researchers

- 5 Academic (mostly post-doc)
- 3 Corporate

Tools

Dovetail

“I think some people might get **defeated** at this step and **quit.**”

“I **wouldn't** sign up to **do this again.**”

Our Findings

TASK DIFFICULTY

3.6/5

The average score was 4.3 for all other tasks, making this the lowest-performing task (1 = very difficult, 5 = very easy).

TIME ON TASK

5 minutes

Average time may have been longer without a test facilitator guiding users through the process.

GOOGLE DOC USAGE

6/8

Many participants struggled despite the instructions on how to create the README file in the UI.

DESIRED END RESULT

A **simplified** README
file creation process



IMPACT

Increased dataset
submission rate

Our Solution

✗ Unfamiliar file type

Users were largely unfamiliar with README files and the markdown format.



✓ Remove upload

In the redesign we removed the ability to upload README files.

✗ Desire for flexibility

Users found the experience to be cumbersome and rigid.



✓ Add inline editor

Users can now enter their README content in a markdown editor without leaving.

Constraints & Considerations



Quick Turnaround

Need to ensure a quick delivery to address this fairly major pain point.



Limited Dev Resources

We had one dedicated developer to work on the solution.



Resolution

Utilize an existing open source library rather than building the solution from scratch.

[Back to My Dashboard](#)[Help](#) 












1 Describe Dataset 2 README File 3 Upload Files 4 Review and Submit

Add README File

The README contains the details needed to interpret and reuse your data, including abbreviations and codes, file descriptions, and information about any necessary software. Use the template to get started. The README is the first file curators review and the most common reason datasets are returned for revision. To avoid revision requests, **ensure your README is clear, complete, and written with both experts and newcomers in mind.**

Generate and attach your README file before proceeding to the next step.

[LEARN ABOUT README FILE](#)[SEE EXAMPLE README FILE](#)[DOWNLOAD README](#)

B I           

Title of Dataset

[Access this dataset on Dryad](Dataset DOI link)

Give a brief summary of dataset contents, contextualized in experimental procedures and results.

Description of the data and file structure

This is a freeform section for you to describe how the data are structured

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Back to My Dashboard Why can't I edit certain fields? Guidance on Open Science Standards Dataset Upload Instructions

Describe Dataset 2 README File 3 Upload Files 4 Review and Submit

README File

Add a README.md File*

Please include a README file to help others use and understand your dataset. It should contain the details needed to interpret and reuse your data, including abbreviations and codes, file descriptions, and information about any necessary software. You will need to use a text editor that supports the markdown format. Ensure the file is named 'README.md' (in all caps). The file will not upload if the name doesn't follow this format.

Tip: You can use Google Docs to easily create markdown files. (File -> Download -> Markdown (.md))

LEARN ABOUT README FILE SEE EXAMPLE README FILE

Uploaded File			
Name	Size	Date Modified	Actions
README.md	1.5 KB		

BACK TO PREVIOUS STEP SAVE AND FINISH LATER PROCEED TO NEXT STEP

BEFORE

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Back to My Dashboard Help

Describe Dataset 2 README File 3 Upload Files 4 Review and Submit

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DOWNLOAD README

Title of Dataset

[Access this dataset on Dryad](Dataset DOI link)

Give a brief summary of dataset contents, contextualized in experimental procedures and results.

Description of the data and file structure

This is a freeform section for you to describe how the data are structured and how a potential consumer might use them. Be as descriptive as necessary. Keep in mind that users of your data might be new to the field and unfamiliar with common terminology, metrics, etc.

Describe relationships between data files, missing data codes, other abbreviations used. Be as descriptive as possible.

Sharing/Access information

This is a section for linking to other ways to access the data, and for linking to sources the data is derived from, if any.

Links to other publicly accessible locations of the data:

Title of Dataset

[Access this dataset on Dryad](Dataset DOI link)

Give a brief summary of dataset contents, contextualized in experimental procedures and results.

Description of the data and file structure

This is a freeform section for you to describe how the data are structured and how a potential consumer might use them. Be as descriptive as necessary. Keep in mind that users of your data might be new to the field and unfamiliar with common terminology, metrics, etc.

Describe relationships between data files, missing data codes, other abbreviations used. Be as descriptive as possible.

GENERATE README AND ATTACH TO DATASET

AFTER

P2 Participant 2 ▶ 50:40

Okay. And then now I'm. Then I overall was incredibly pleased with the ease of use. I think particularly the, the. If I describe one thing that was nice was the readme file.

P2 Participant 2 ▶ 50:50

Because that could have been onerous and you made it incredibly easy.

Assistant Professor of Biochemistry, Molecular Biology & Pharmacology, Sep 2025

P1 Participant 1 ▶ 53:50

All right. Anyway, I really like this utility. Right. Because it's. Yeah, that's really nice.

P1 Participant 1 ▶ 53:57

Say he loved the Markdown preview editor.

P2 Participant 2 ▶ 54:02

Good to know.

P1 Participant 1 ▶ 54:03

I really like that a lot. I love that. That's so nice.

P1 Participant 1 ▶ 54:10

Yeah, that's really great.

Assistant Professor of Molecular, Cellular, and Biomedical Sciences, Oct 2025

Continuous Improvement

A few things in our backlog that we plan to prioritize to improve the overall experience.

- **Add validation for README file**
- **Improve understanding of markdown**
- **Make README file editable**
- **Evangelize data sharing**

Recent Insights

In our most recent research study, we've gained new insights on differences in the tech-savviness of our authors.

Insight

Tech savvy users prefer the option to upload an existing README file.



Action

Consider **reintroducing the upload** function in a way that maintains simplicity.

Invalidate your assumptions

Even when we think we're right or it's good enough, **we can always do better.**



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Thank you!

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