Using the Open Science Framework

Enhancing Your Research Projects

Land acknowledgement:

I acknowledge that I live and work on Treaty 6 Territory and the Homeland of the Métis. I pay my respects to the First Nations and Métis ancestors of this place.

About me

Health Sciences Librarian at the University of Saskatchewan (USask)

Have been supporting open science, reproducibility, data management, and data sharing at NIH, NYU School of Medicine, and USask for >8 years

Chair of the Portage Network Data Discovery Expert Group

Kevin Read, MLIS, MAS

Today’s plan

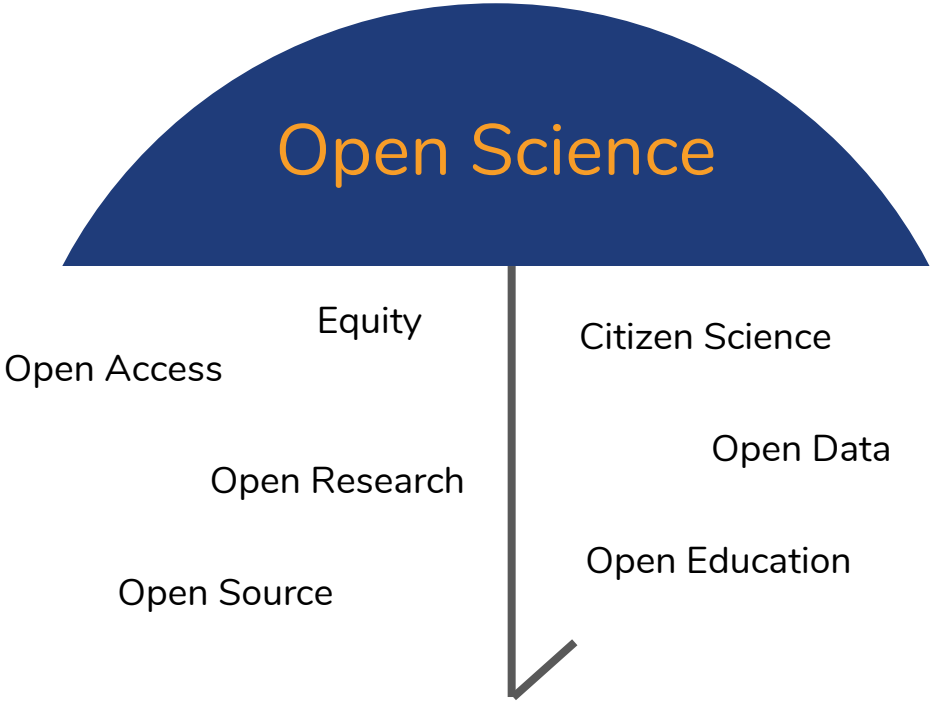
Examine the Open Science Framework (OSF) tool within the context of open science best practices

Explore the features of OSF and its capabilities

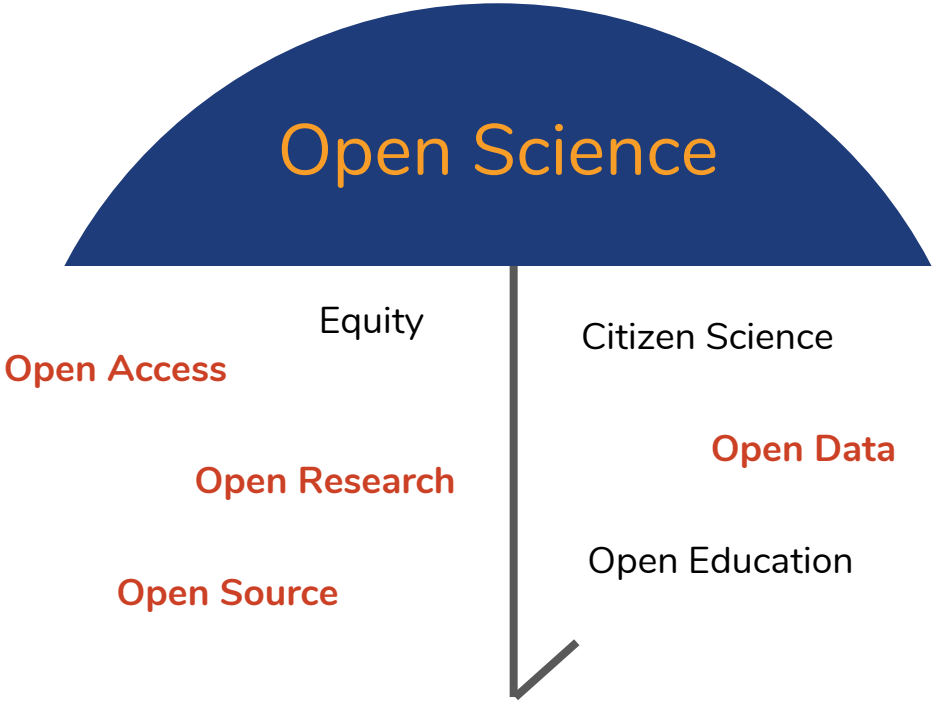
Use case studies to demonstrate how OSF can be used in practice

Highlight the advantages and disadvantages of using OSF

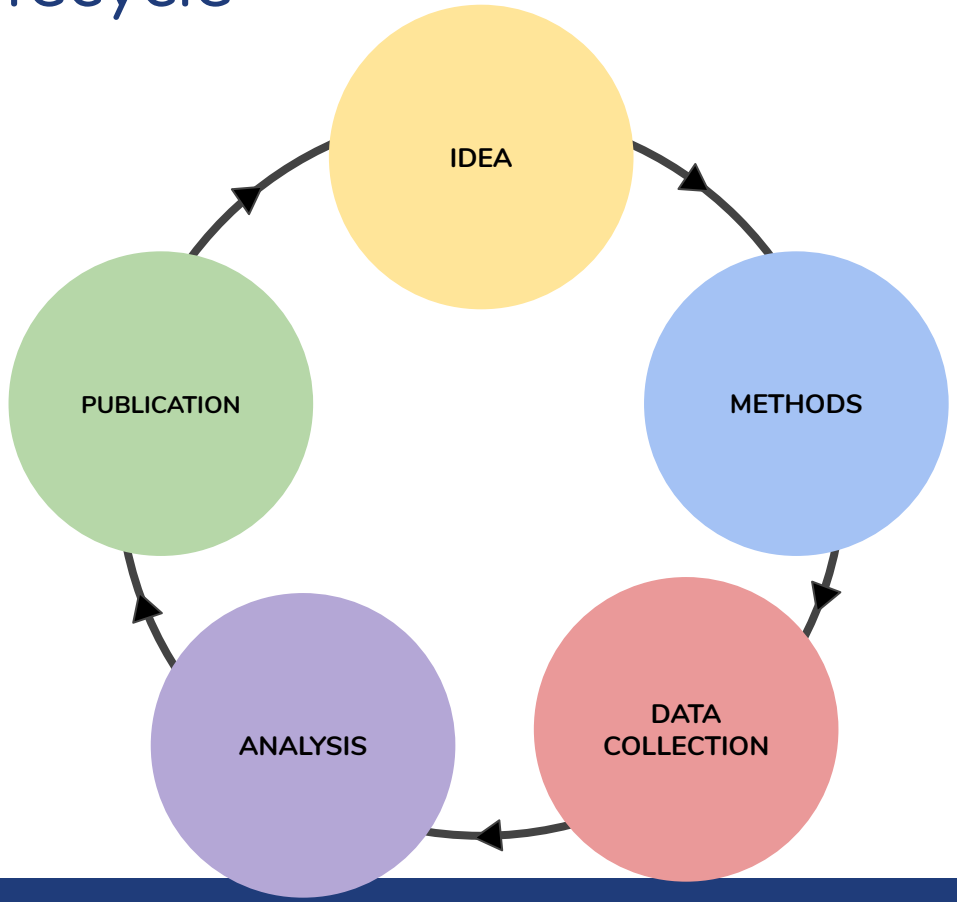
Open Science AKA...



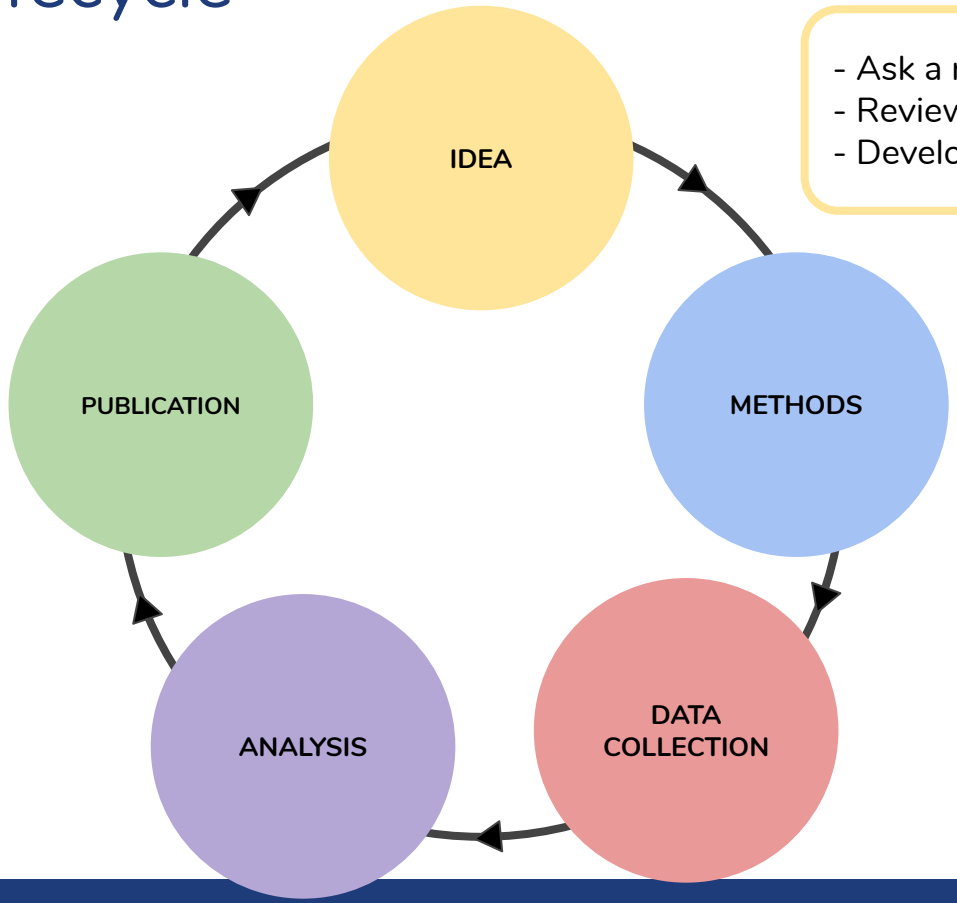
Open Science & OSF



Research Lifecycle

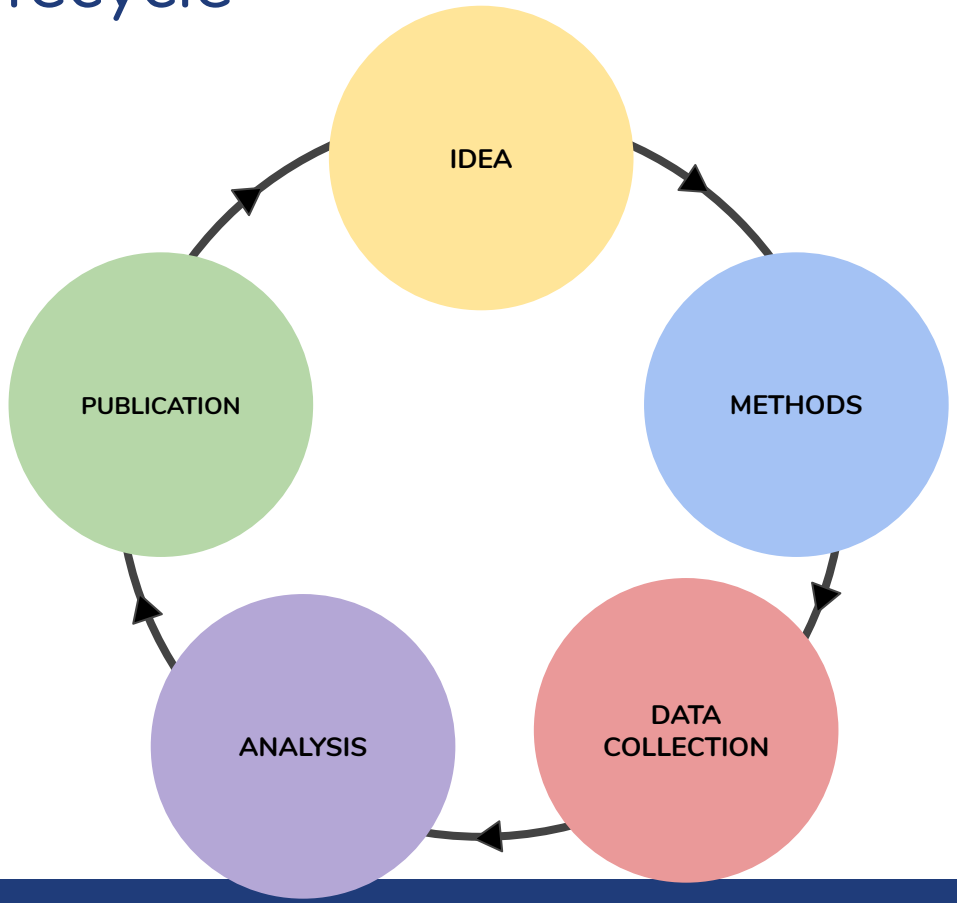


Research Lifecycle



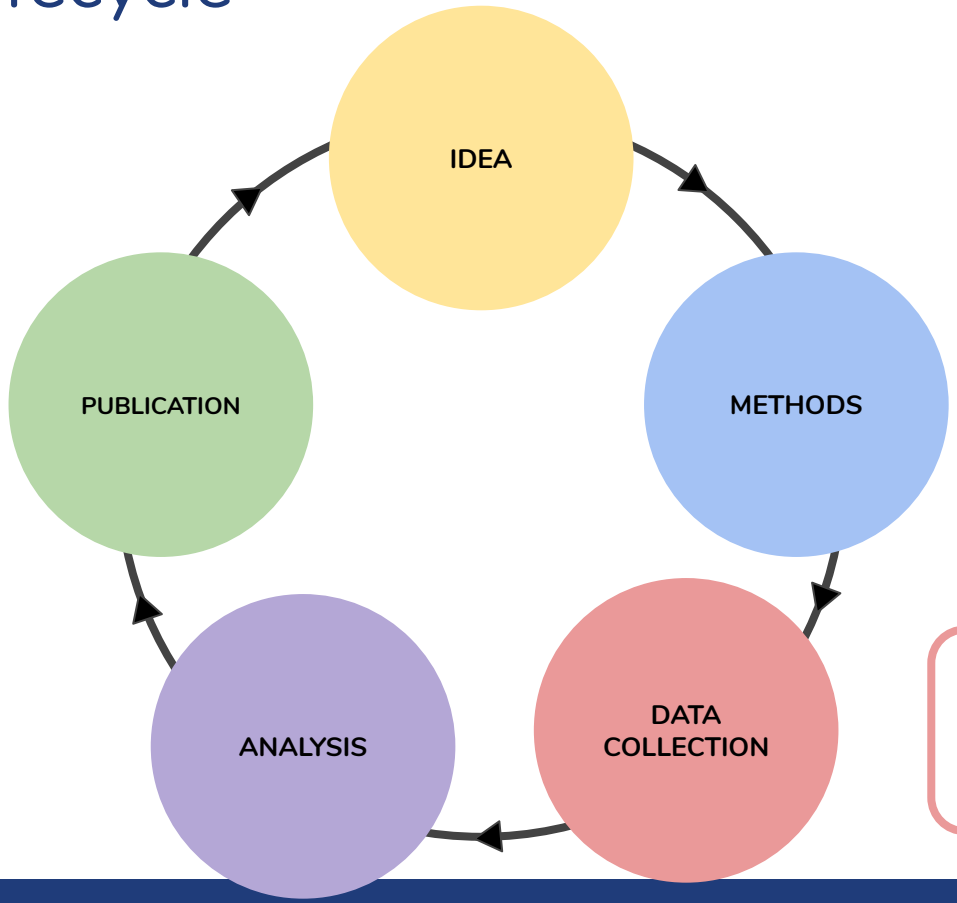
- Ask a research question
- Review existing research
- Develop hypothesis

Research Lifecycle



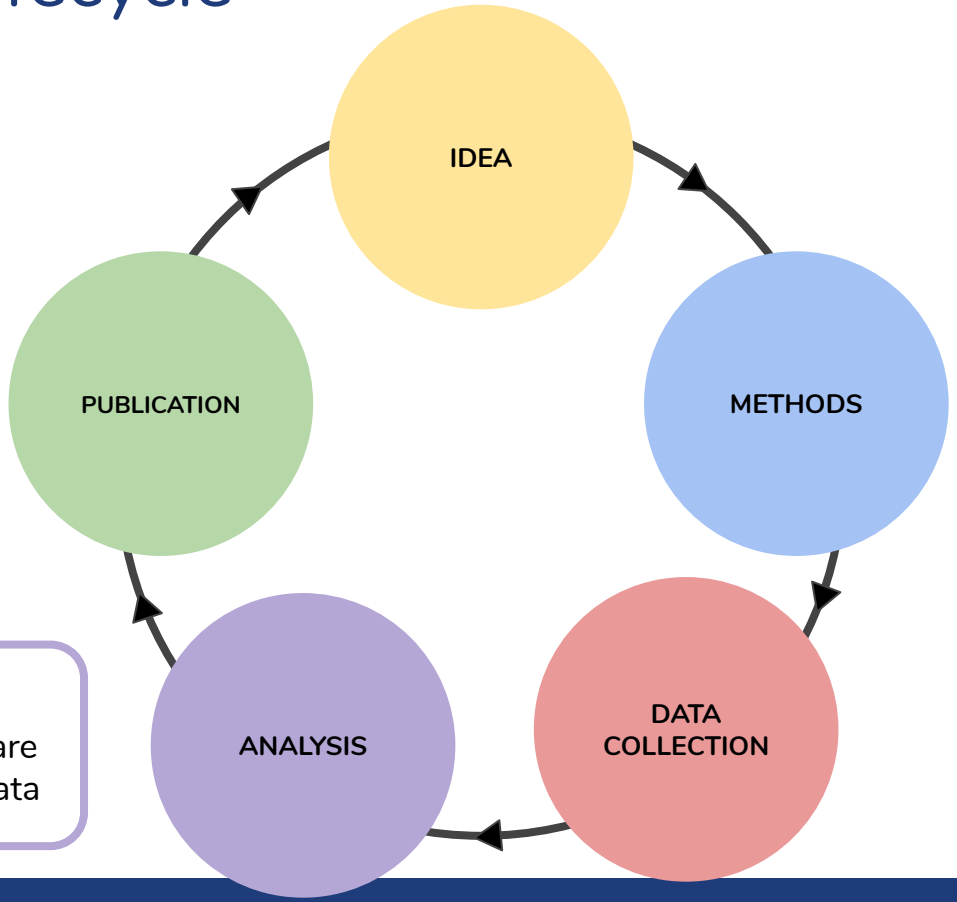
- Develop instruments
- Plan experiments
- Identify participants and/or subject(s)

Research Lifecycle



- Gather text, numbers, images, etc.
- Store data
- Describe data

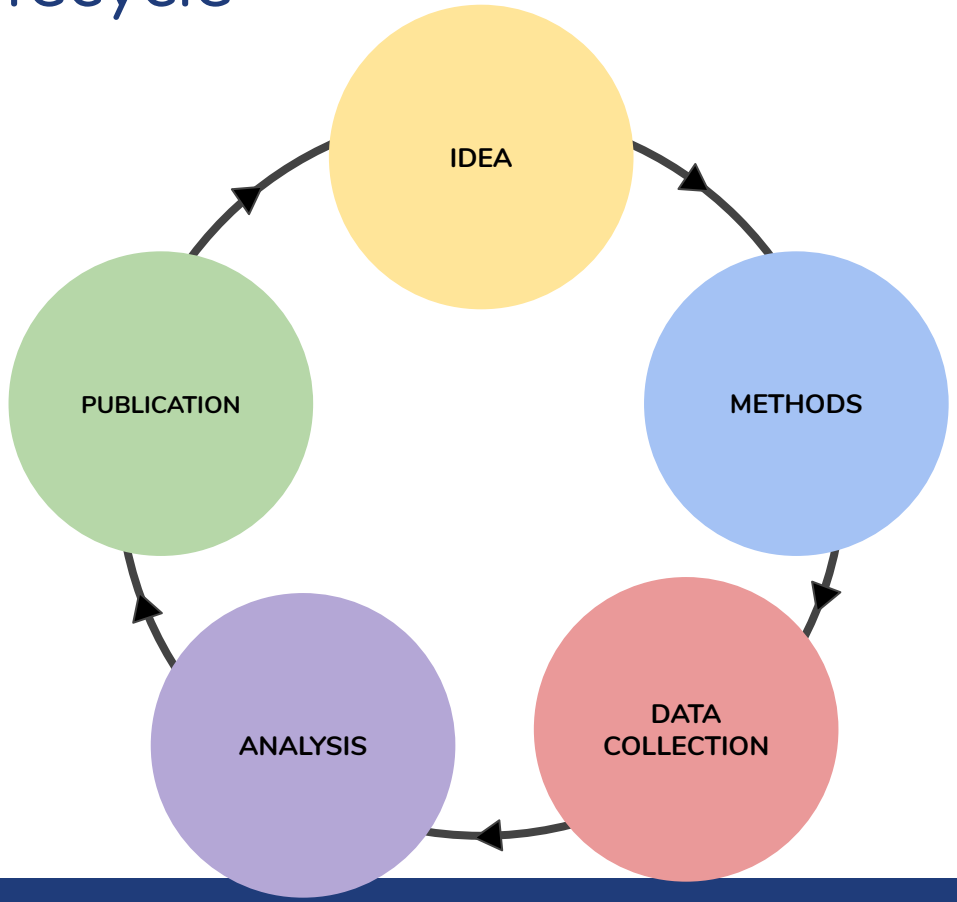
Research Lifecycle



- Build analysis plan
- Use statistical software
- Analyze/transform data

Research Lifecycle

- Present at conference
- Publish in journal
- Share research data



Research Lifecycle

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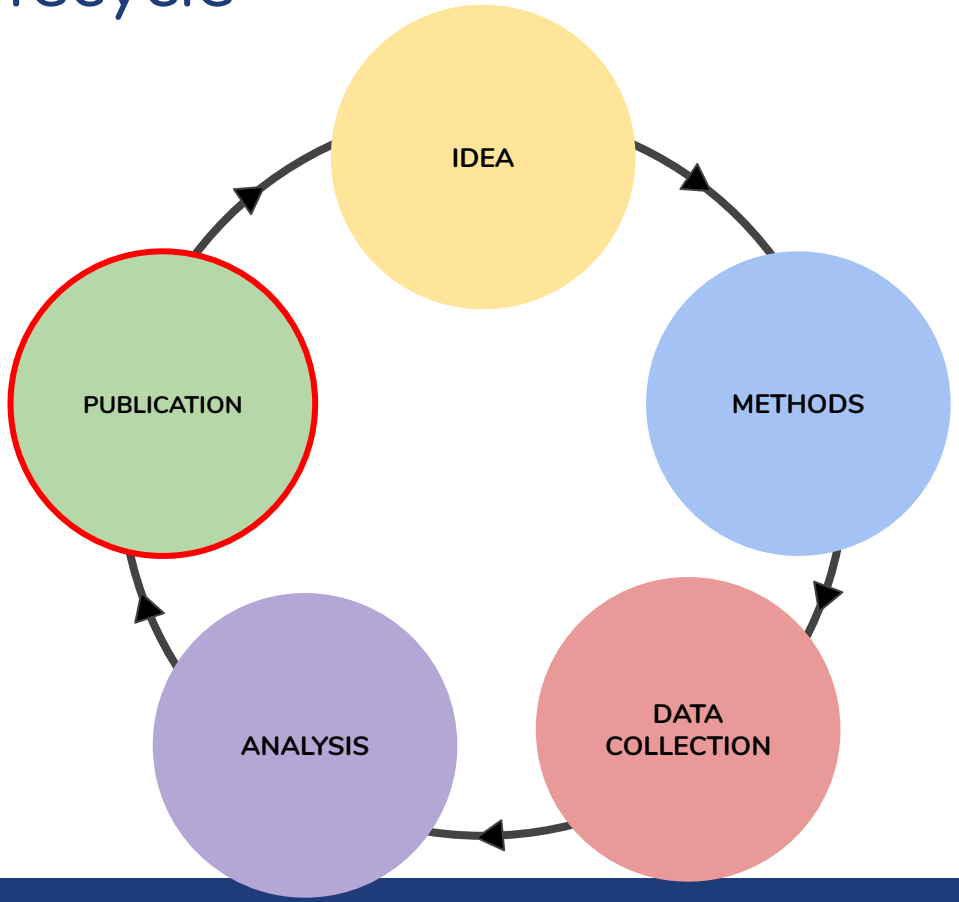
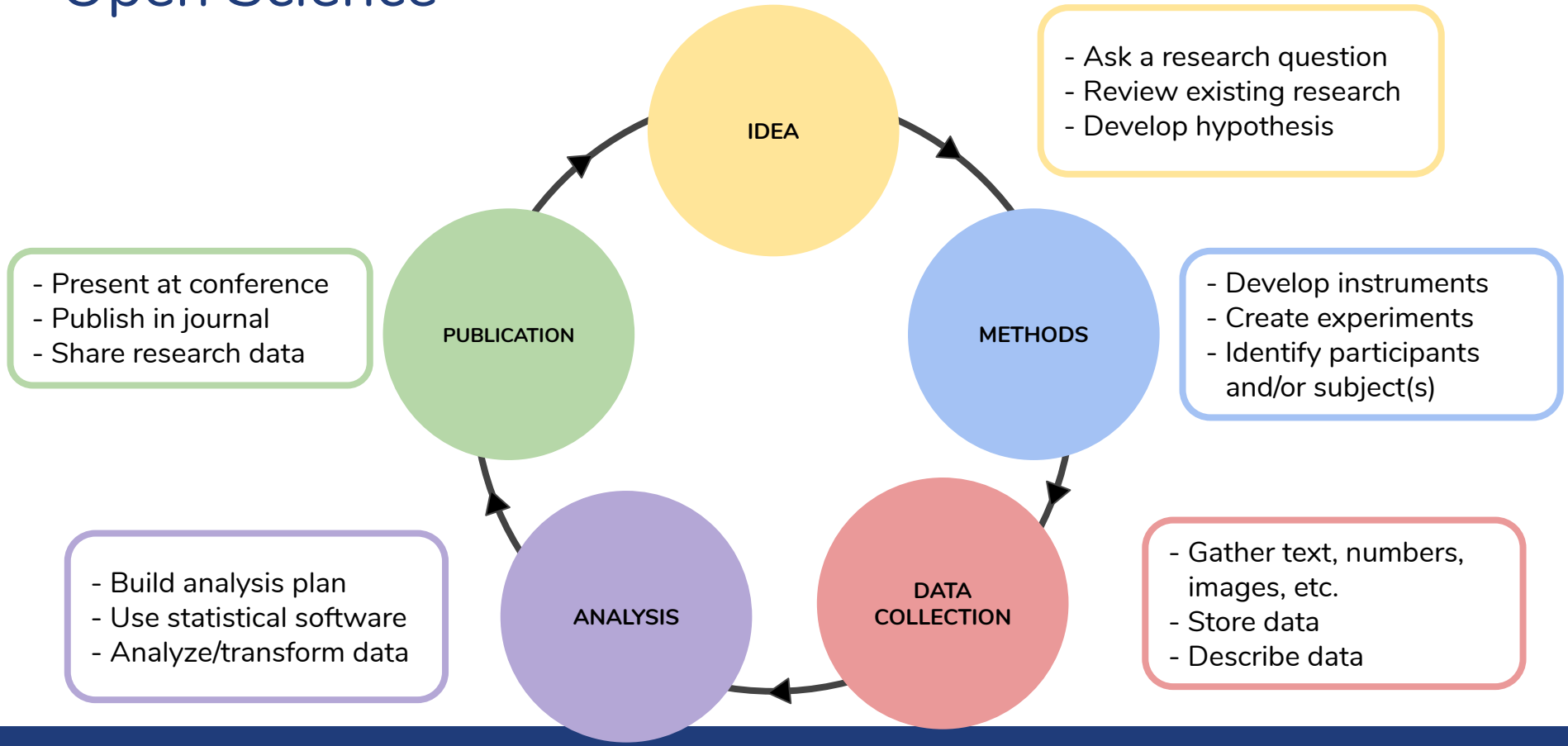
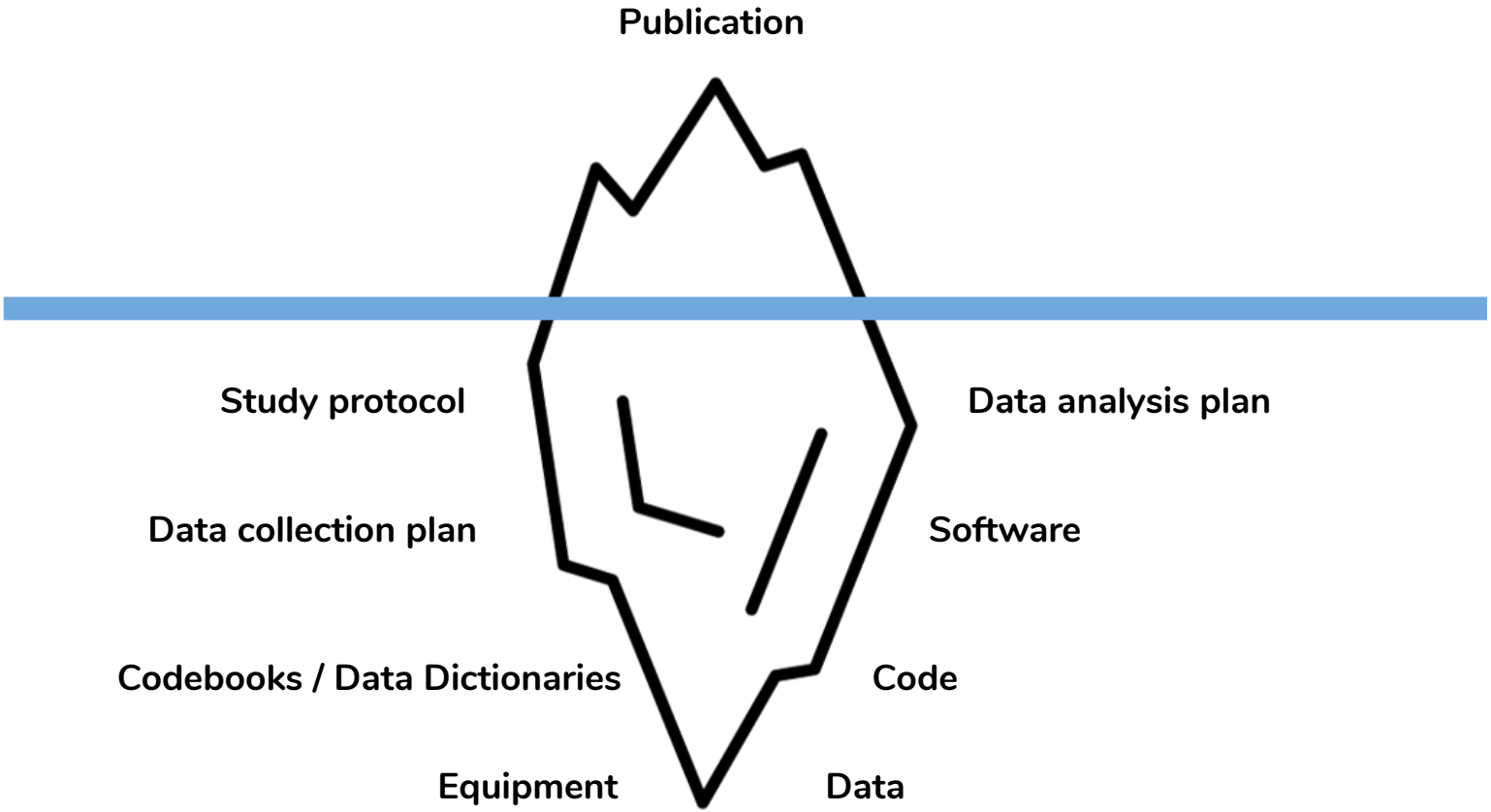


Publication

Open Science




Publication
Study protocol
Data analysis plan
Data collection plan
Software
Codebooks / Data Dictionaries
Code
Equipment
Data

Why does this matter?

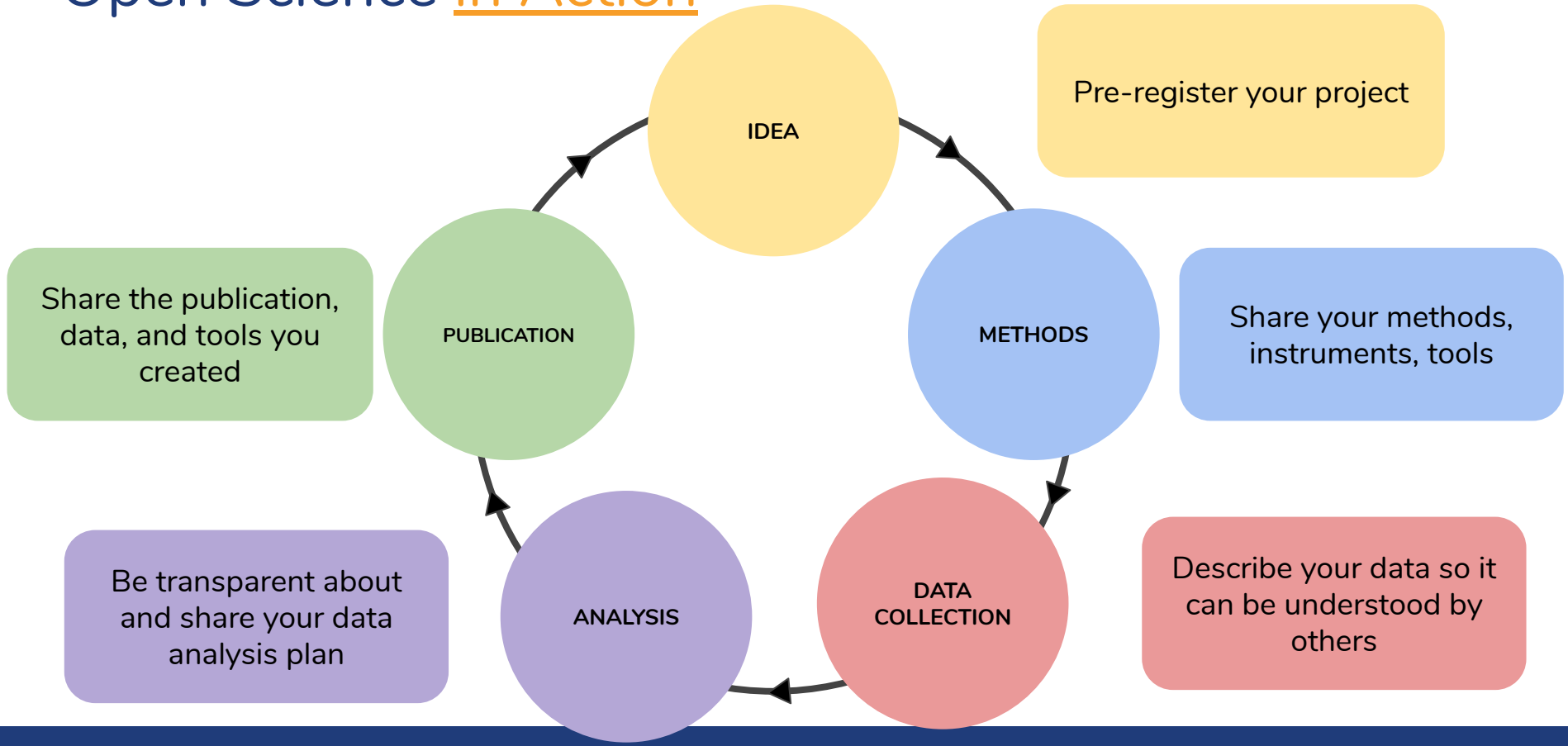
Improve transparency, reproducibility, and reuse of research

Avoid duplication of efforts

Increase the potential for collaboration

Make publicly-funded research products openly accessible

Open Science in Action



OSF: Open Science by Design

Preregistration

Preprints, Data Sharing, Software Sharing

Open Methods / Tools

Reproducibility / Reuse

Data Management

Poll:

Have you ever pre-registered a research project before you started working on it?

Poll:

Have you ever openly shared your methods, protocols, instruments, or tools before publication?

Poll:

Have you ever shared your research data before or after publication?

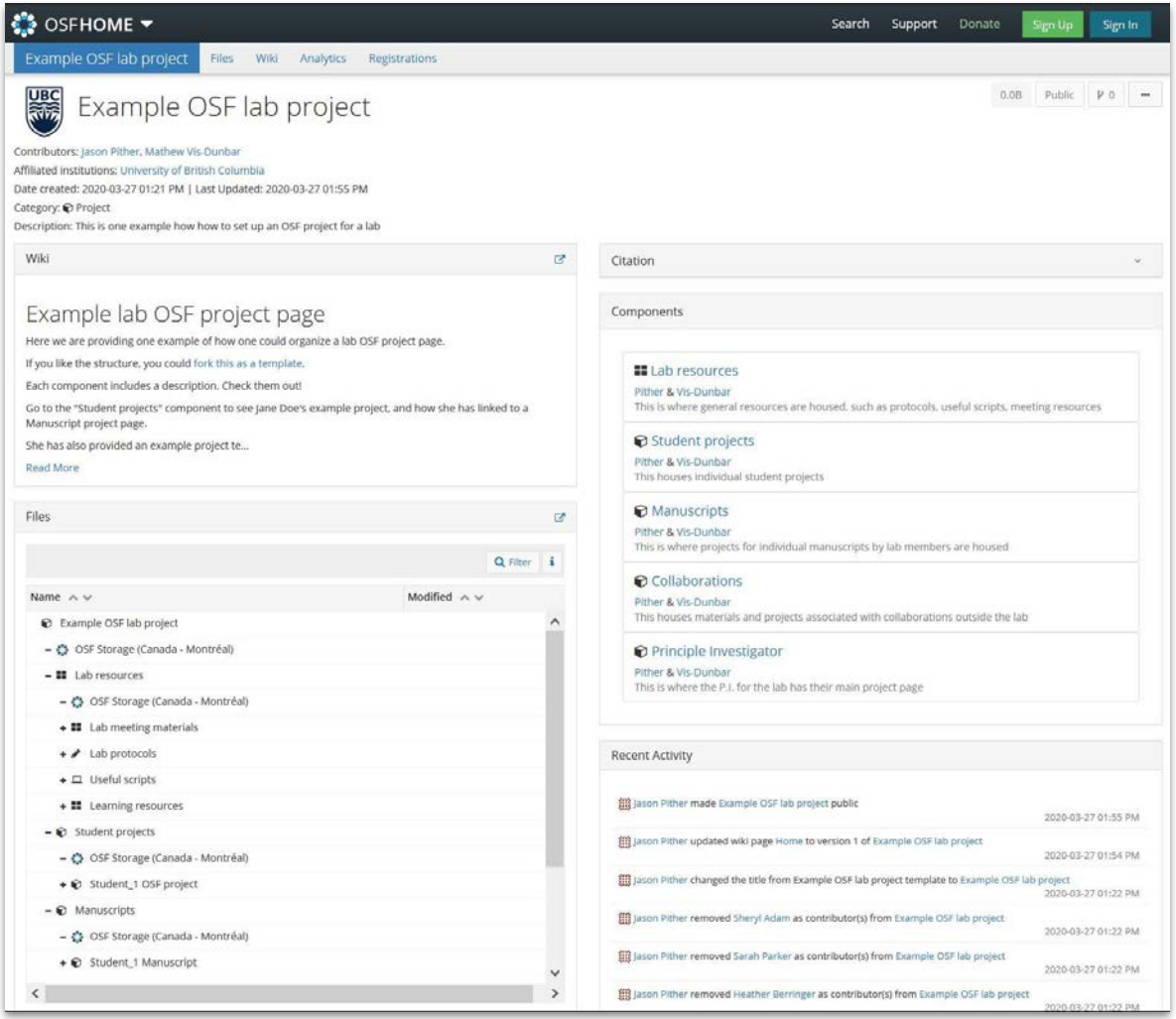
OSF Features

Open Science Framework

- Register your work
- Organize projects
- Manage collaborators
- Utilize version control
- Connect to well-known tools
- Share your work

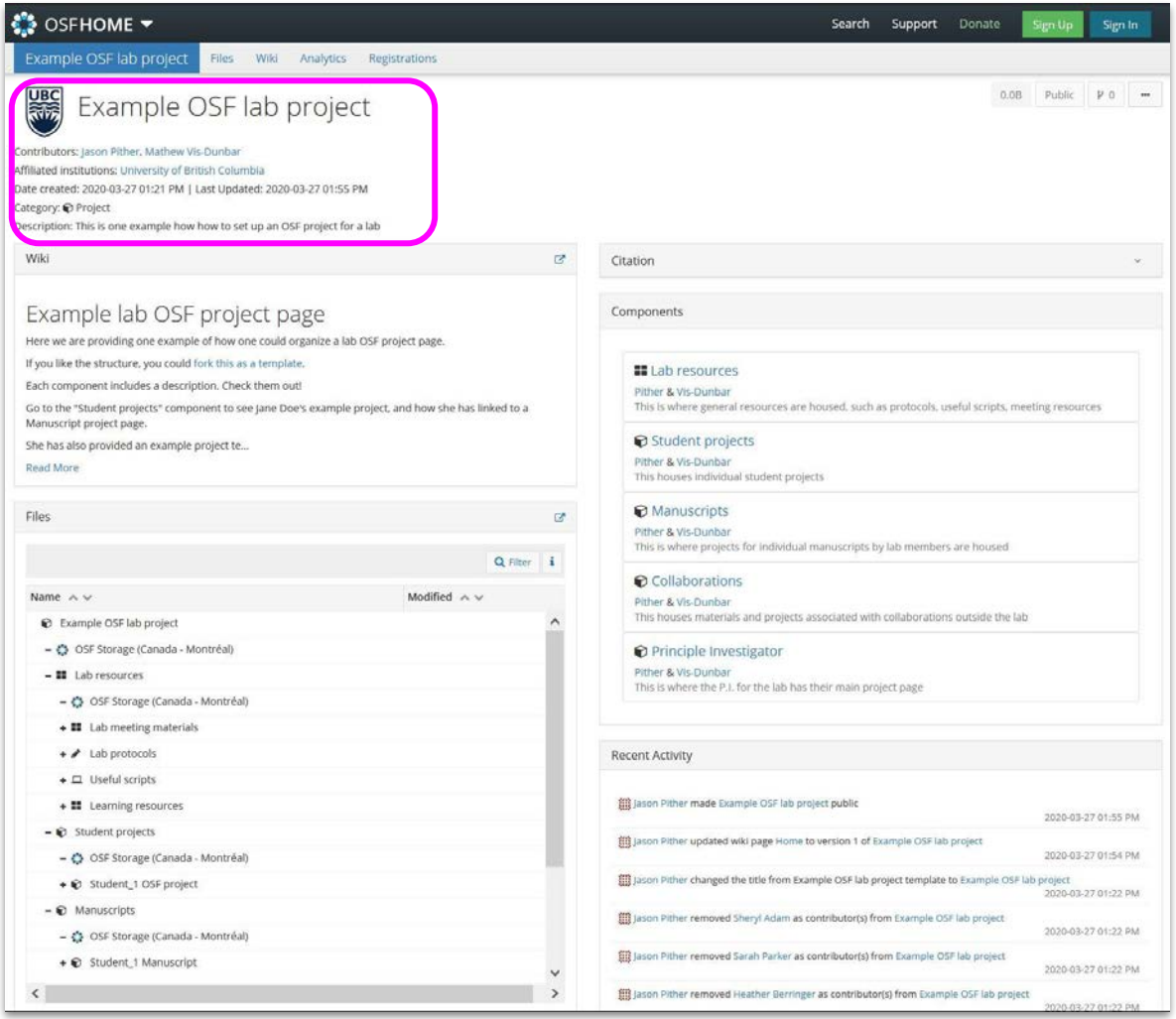
But first! The basics.

The Basics


OSFHOME
Search
Support
Donate
Sign Up
Sign In
Example OSF lab project
Files
Wiki
Analytics
Registrations
Example OSF lab project
0.0B
Public
0
Contributors: Jason Pither, Mathew Vis-Dunbar
Affiliated institutions: University of British Columbia
Date created: 2020-03-27 01:21 PM | Last Updated: 2020-03-27 01:55 PM
Category: Project
Description: This is one example how how to set up an OSF project for a lab
Wiki
Example lab OSF project page
Here we are providing one example of how one could organize a lab OSF project page.
If you like the structure, you could fork this as a template.
Each component includes a description. Check them out!
Go to the "Student projects" component to see Jane Doe's example project, and how she has linked to a Manuscript project page.
She has also provided an example project te...
Read More
Files
Filter
Name
Modified
Example OSF lab project
OSF Storage (Canada - Montréal)
Lab resources
OSF Storage (Canada - Montréal)
Lab meeting materials
Lab protocols
Useful scripts
Learning resources
Student projects
OSF Storage (Canada - Montréal)
Student_1 OSF project
Manuscripts
OSF Storage (Canada - Montréal)
Student_1 Manuscript
Citation
Components
Lab resources
Pither & Vis-Dunbar
This is where general resources are housed, such as protocols, useful scripts, meeting resources
Student projects
Pither & Vis-Dunbar
This houses individual student projects
Manuscripts
Pither & Vis-Dunbar
This is where projects for individual manuscripts by lab members are housed
Collaborations
Pither & Vis-Dunbar
This houses materials and projects associated with collaborations outside the lab
Principle Investigator
Pither & Vis-Dunbar
This is where the P.I. for the lab has their main project page
Recent Activity
Jason Pither made Example OSF lab project public
2020-03-27 01:55 PM
Jason Pither updated wiki page Home to version 1 of Example OSF lab project
2020-03-27 01:54 PM
Jason Pither changed the title from Example OSF lab project template to Example OSF lab project
2020-03-27 01:22 PM
Jason Pither removed Sheryl Adam as contributor(s) from Example OSF lab project
2020-03-27 01:22 PM
Jason Pither removed Sarah Parker as contributor(s) from Example OSF lab project
2020-03-27 01:22 PM
Jason Pither removed Heather Berringer as contributor(s) from Example OSF lab project
2020-03-27 01:22 PM

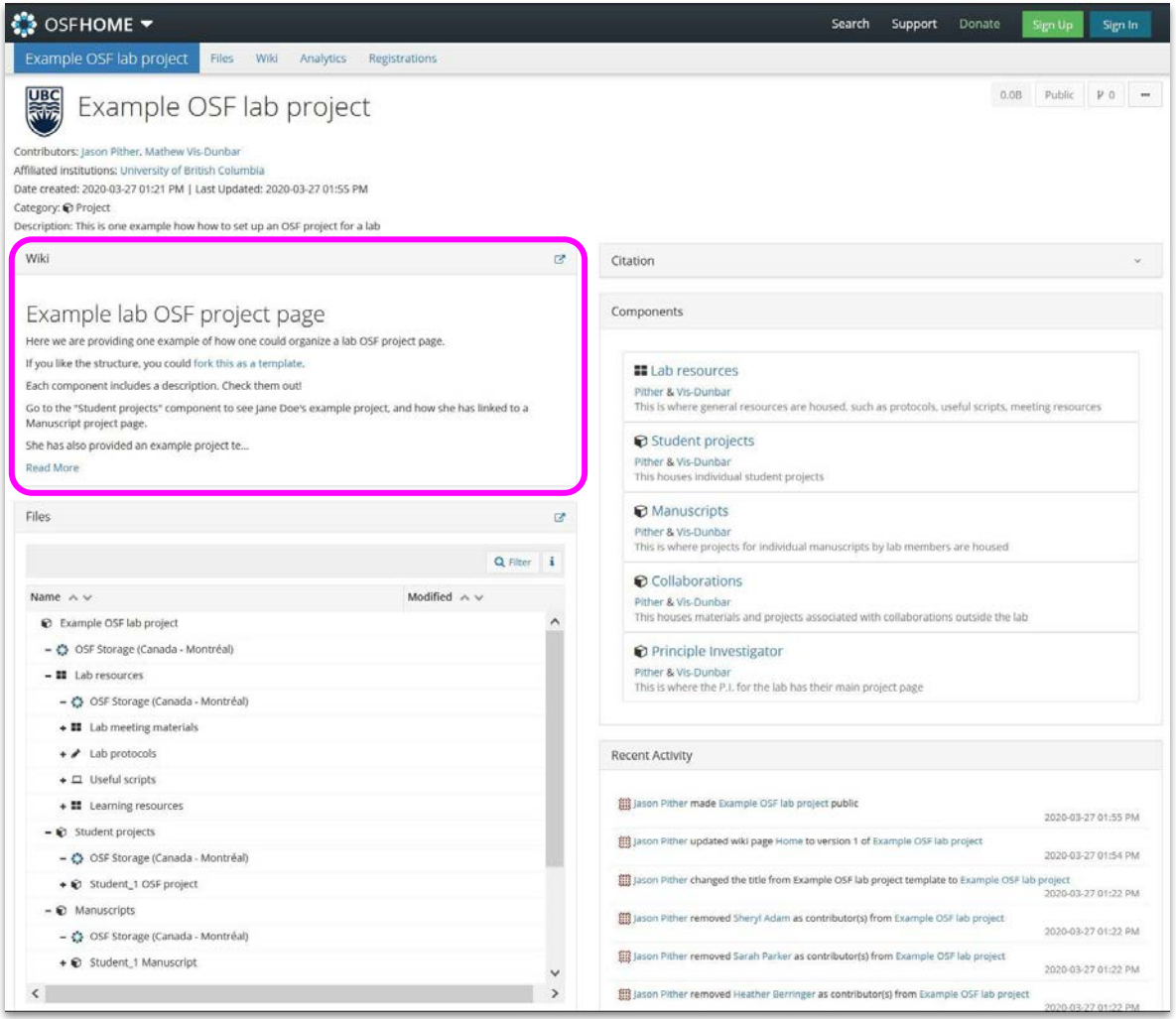
The Basics

- Title and project information



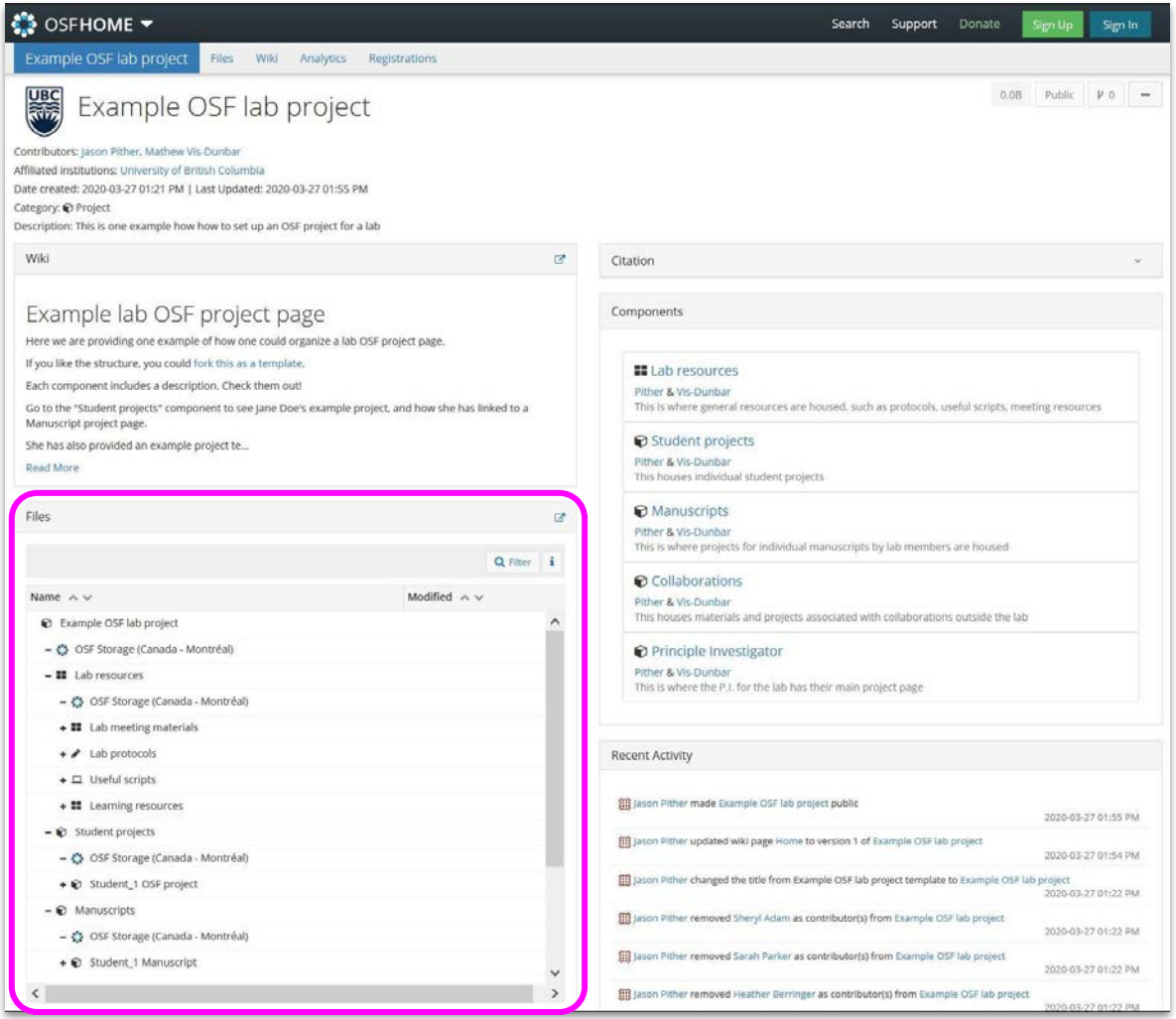
The Basics

- Wiki



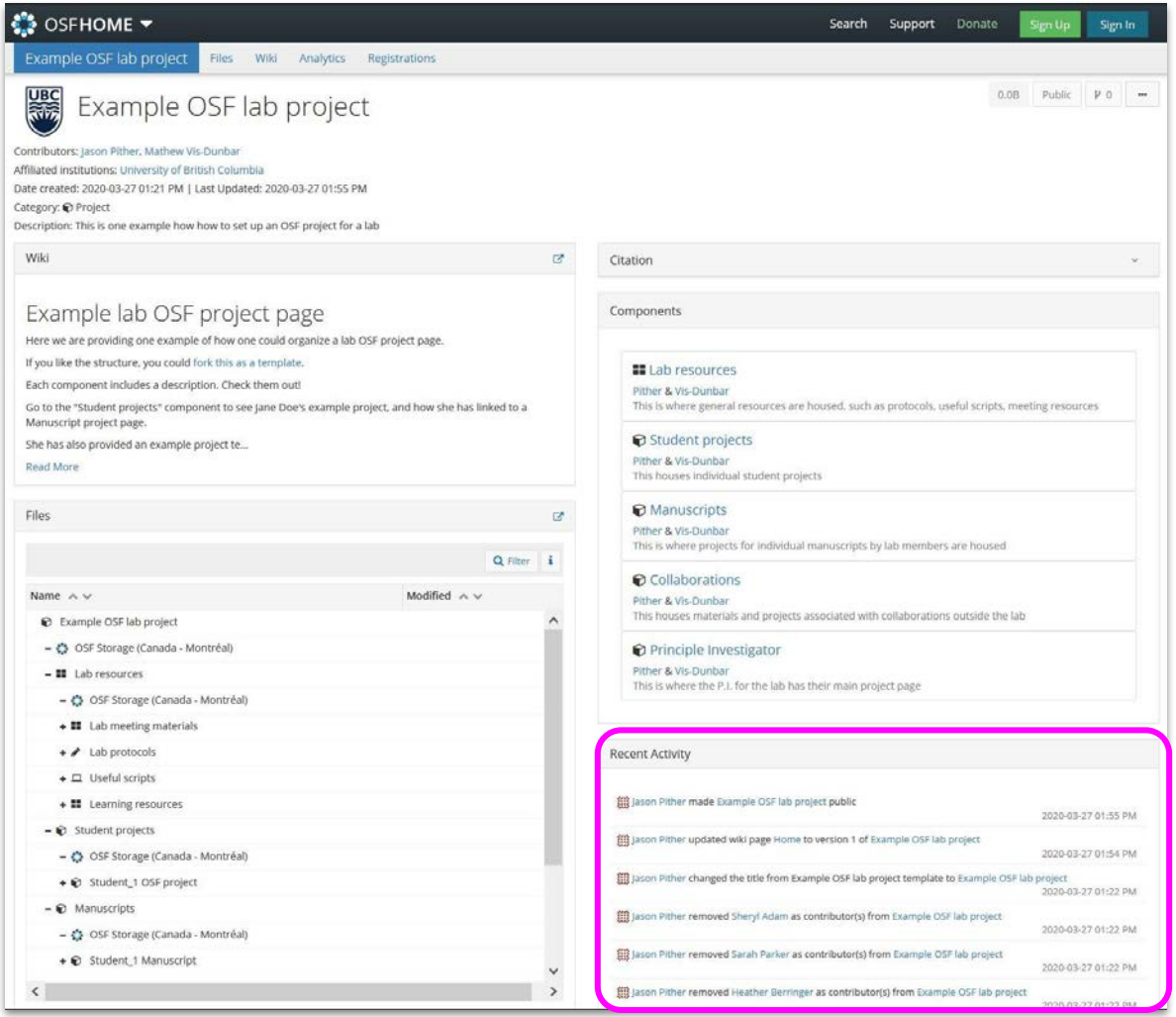
The Basics

- Files, linked tools, and storage directory



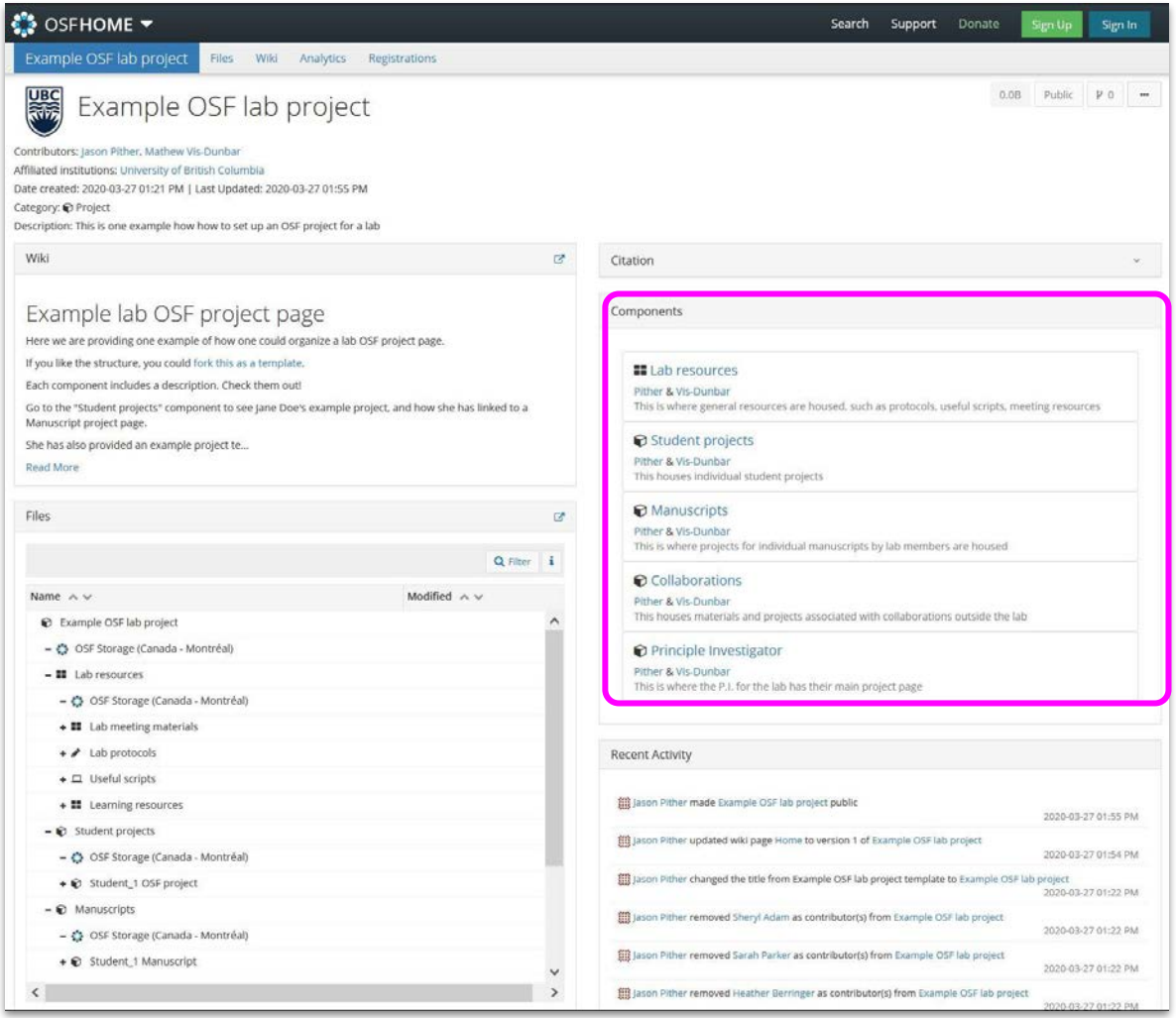
The Basics

- Activity log



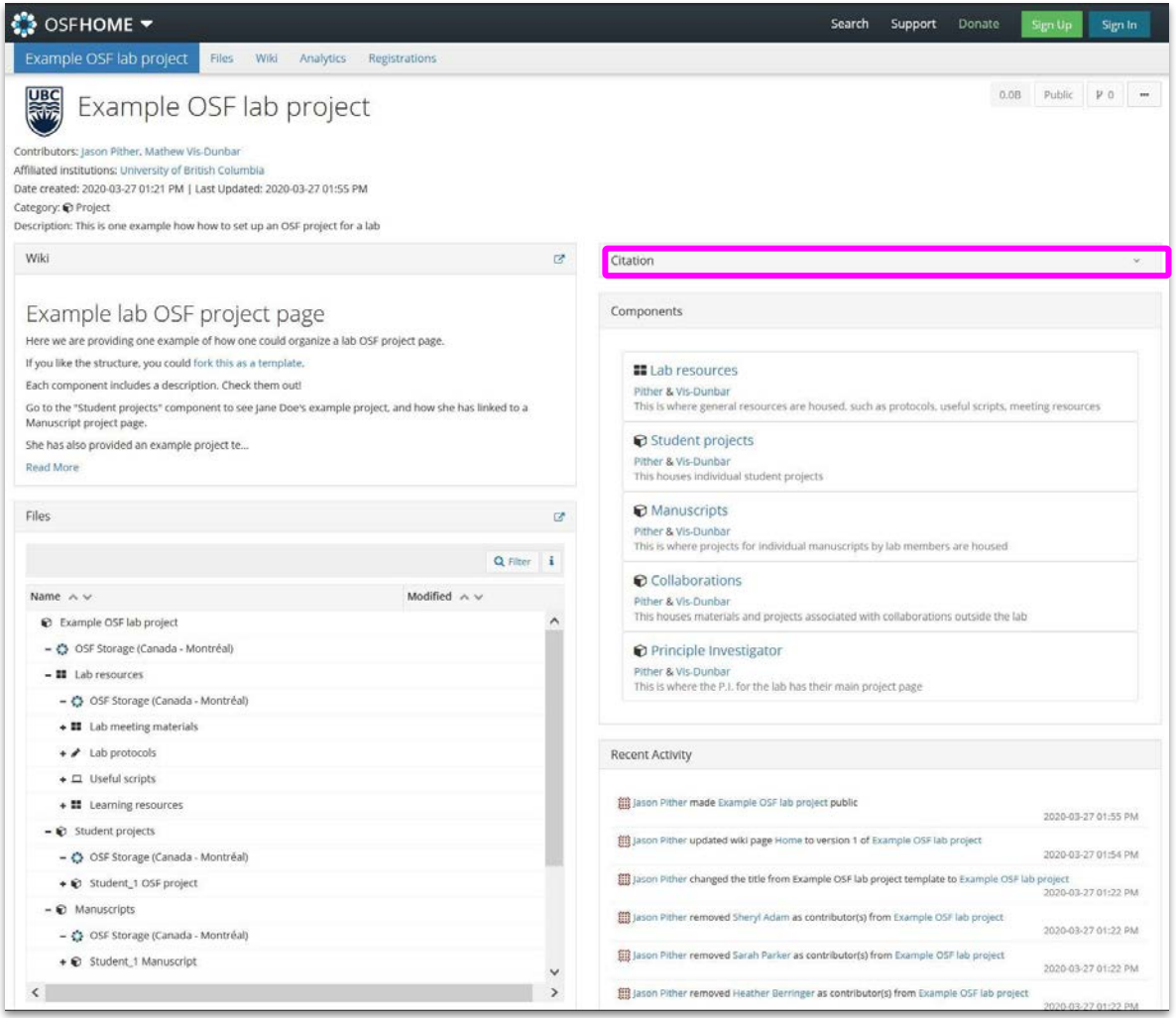
The Basics

- Project components



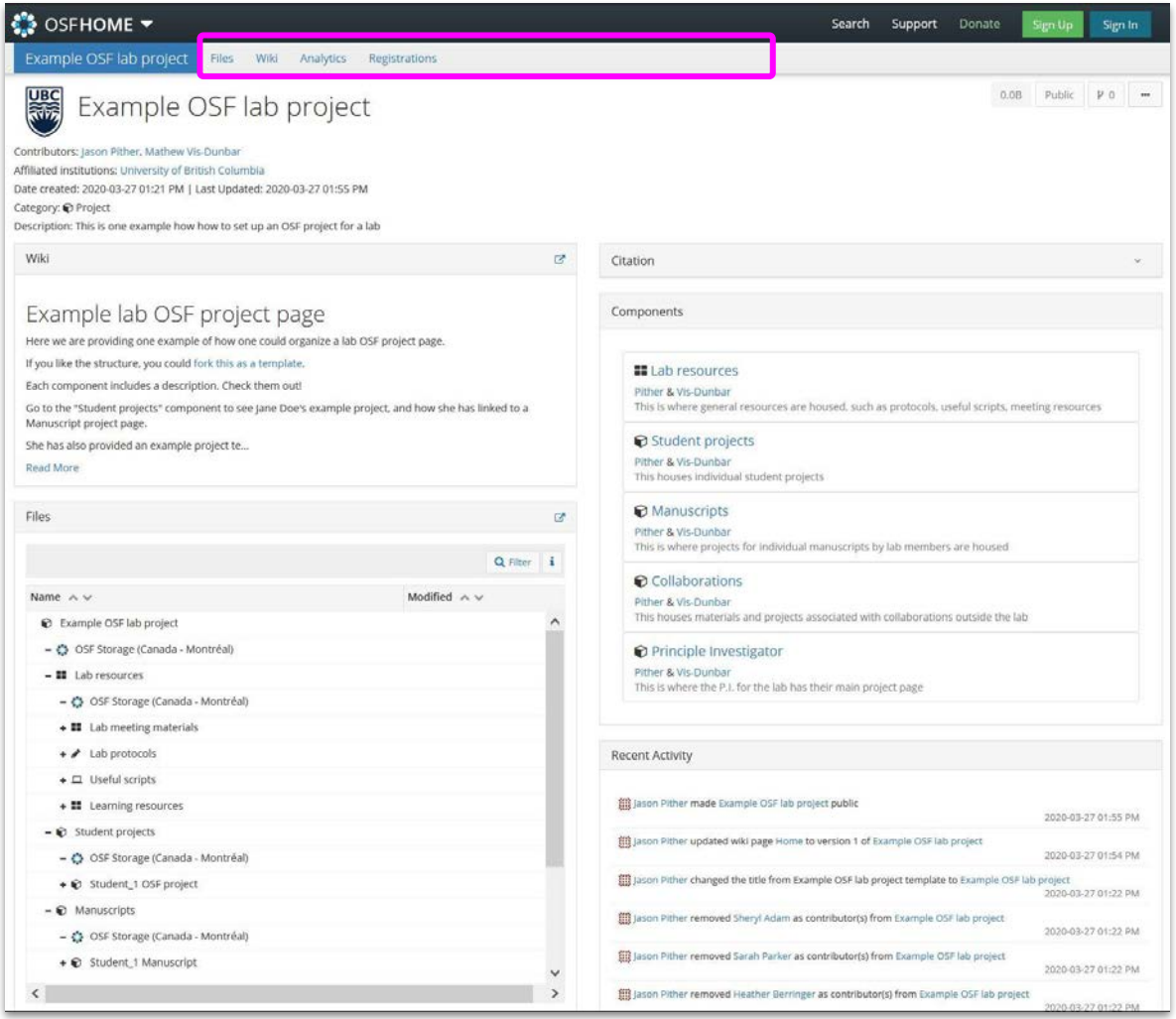
The Basics

- Citation information



The Basics

- Menu bar



Key OSF Features

Open Science Framework

- Register your work
- Organize projects
- Manage collaborators
- Utilize version control
- Connect to well-known tools
- Share your work

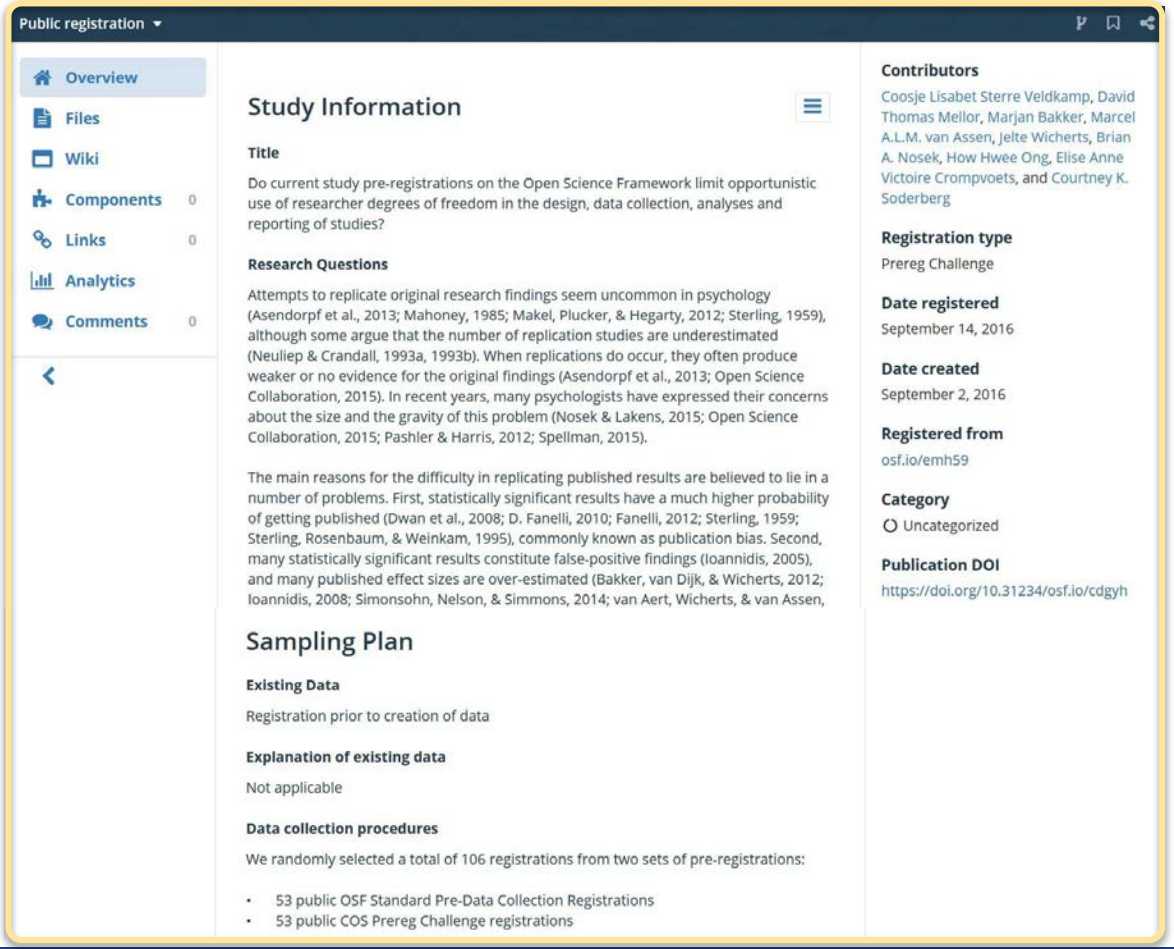
Register your work

Preregistration:
Make your hypothesis, analysis plan, and/or your entire project public before peer review

Creates a timestamped immutable version of your project

Improves transparency, reproducibility, and discoverability of your research

Can develop brand registries for an entire research community (fee-based)



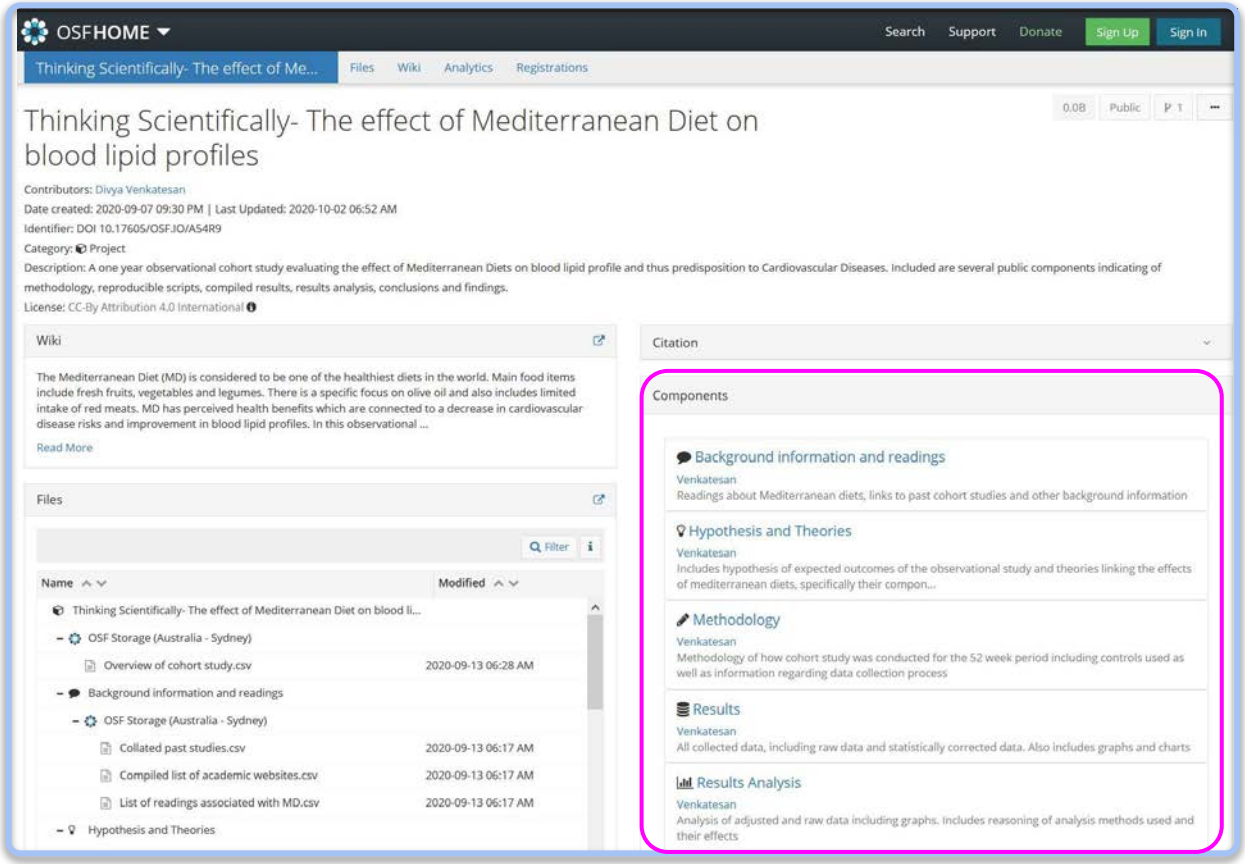
Organize projects

Can group files and content into specific sections called “Components”

Components serve as sub-categories within a hierarchical project structure

Components become their own independent projects

Each Component can have specific collaborators

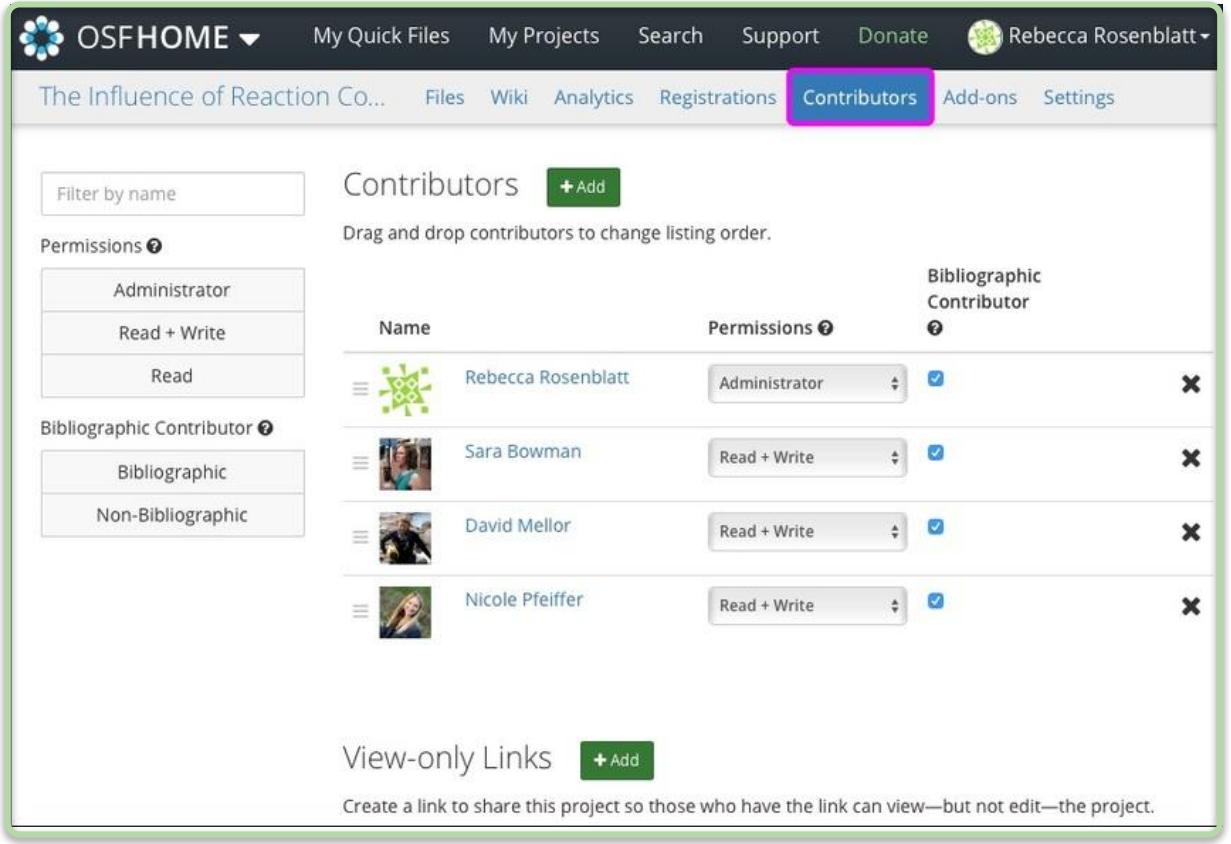


Manage collaborators

Assign different permission levels for contributors to a project

All contributors must have an OSF account

Can decide whether or not to include collaborators as “Bibliographic Contributors”



Utilize version control

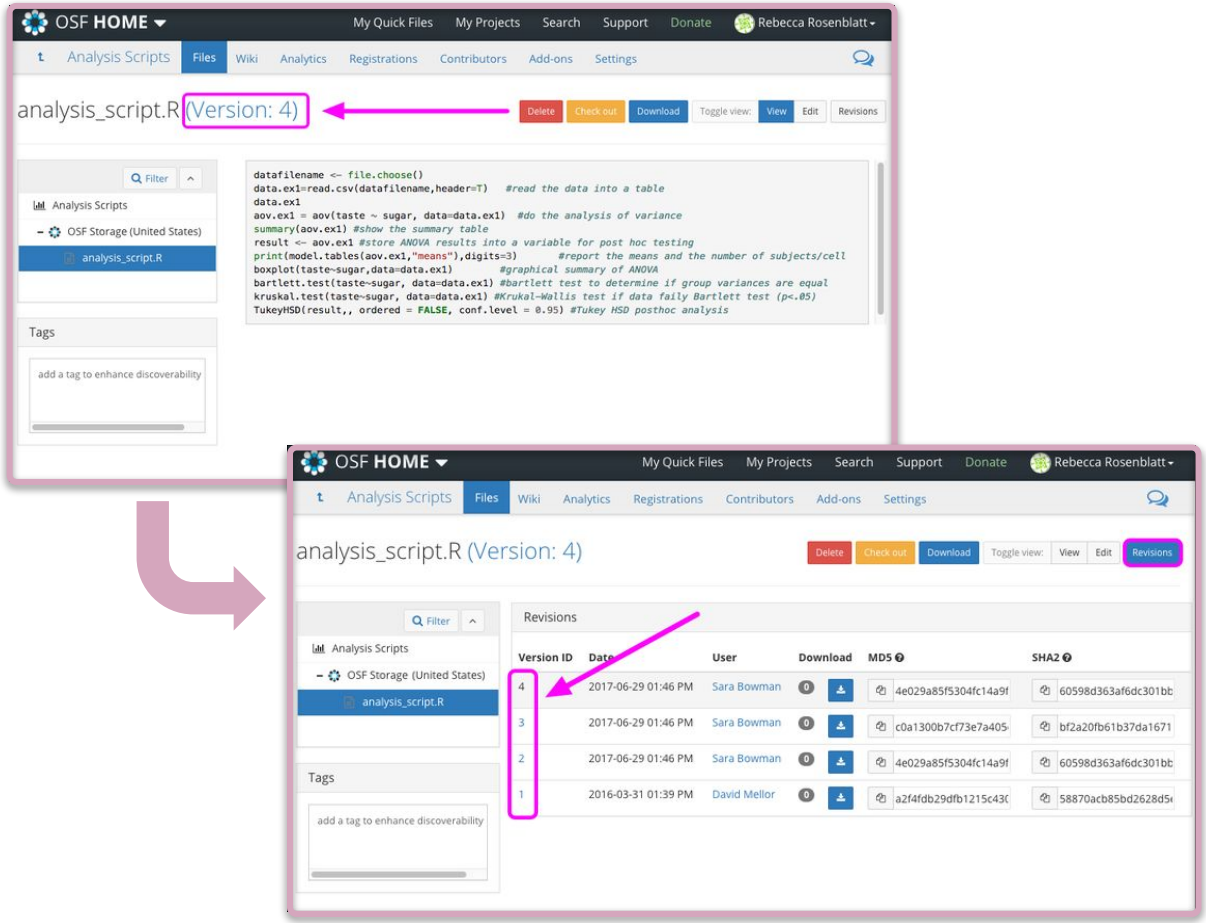
OSF Storage:

- 5 GB for private projects
- 50 GB for public projects

Track all versions of files that utilize OSF-specific storage

Must upload files with the **same name** and within the **same folder** on OSF

Activity log tracks every change made to an OSF project

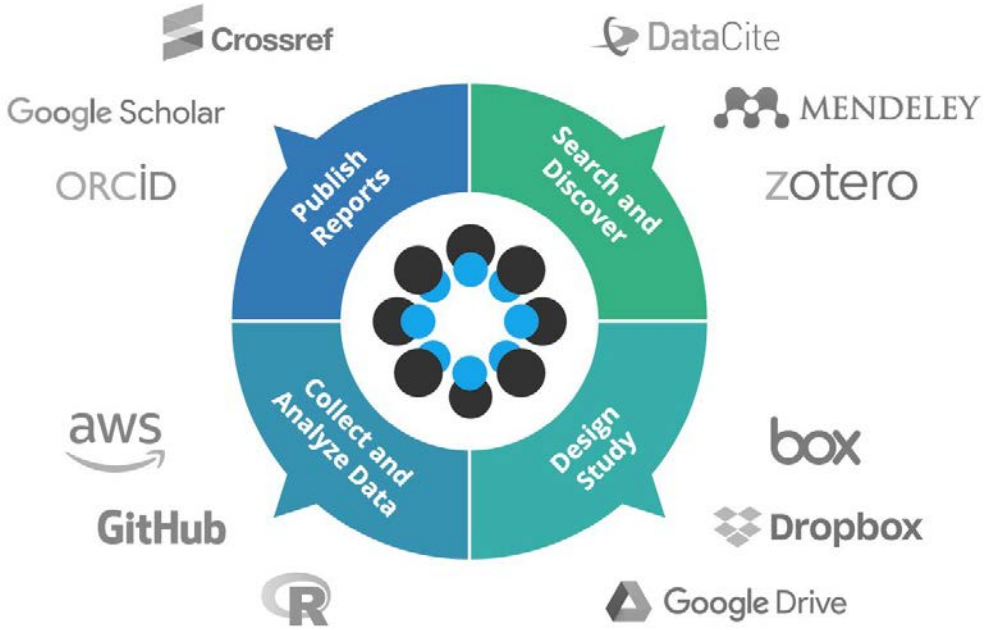


Connect to well-known tools

OSF syncs with many other tools that are used to find, store, and analyze data

Can import data from any of the tools shown

Changes made in those tools will be reflected on OSF



Share your work

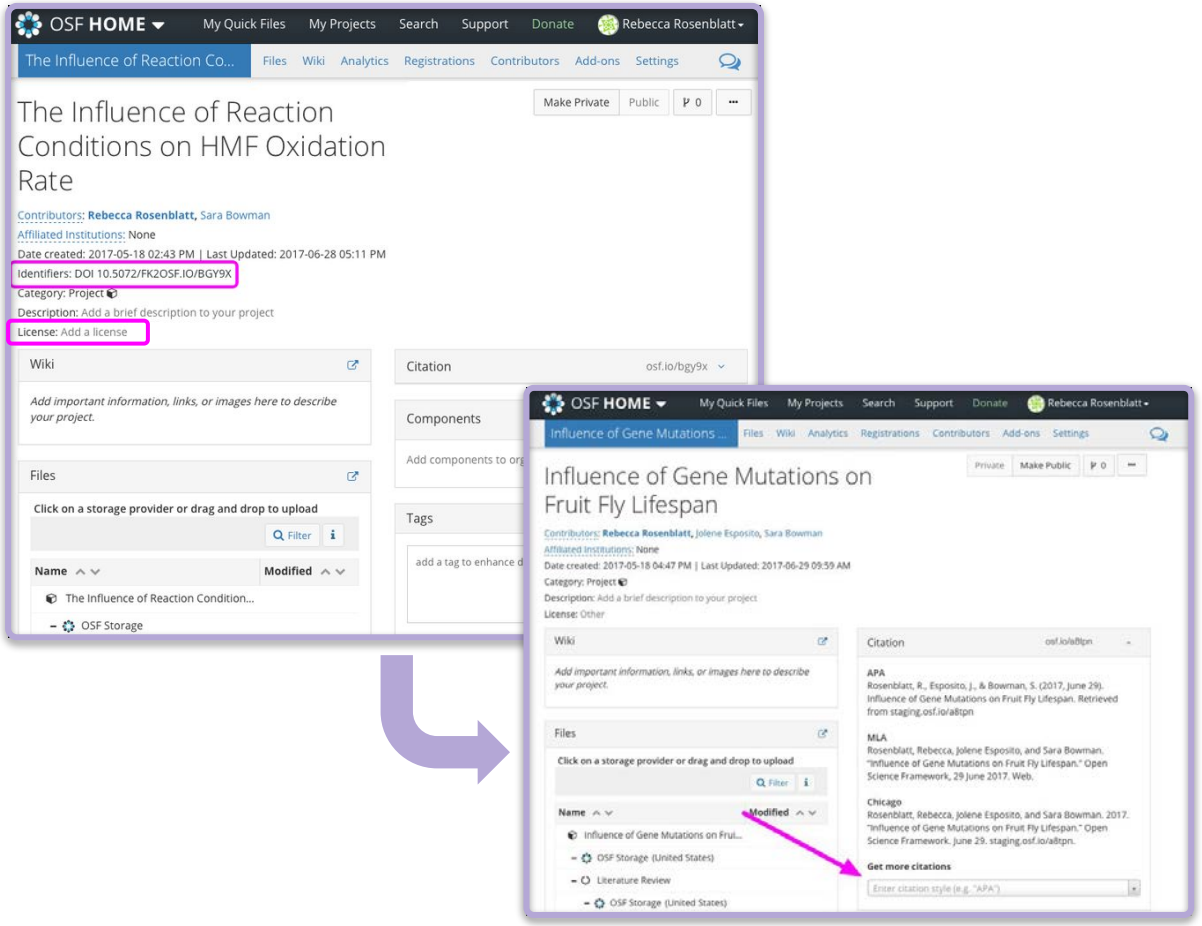
Can share any type of research output

OSF provides the ability to assign digital object identifiers (DOIs) to projects

Can apply a license to projects to dictate terms of use

All projects are citable in any format

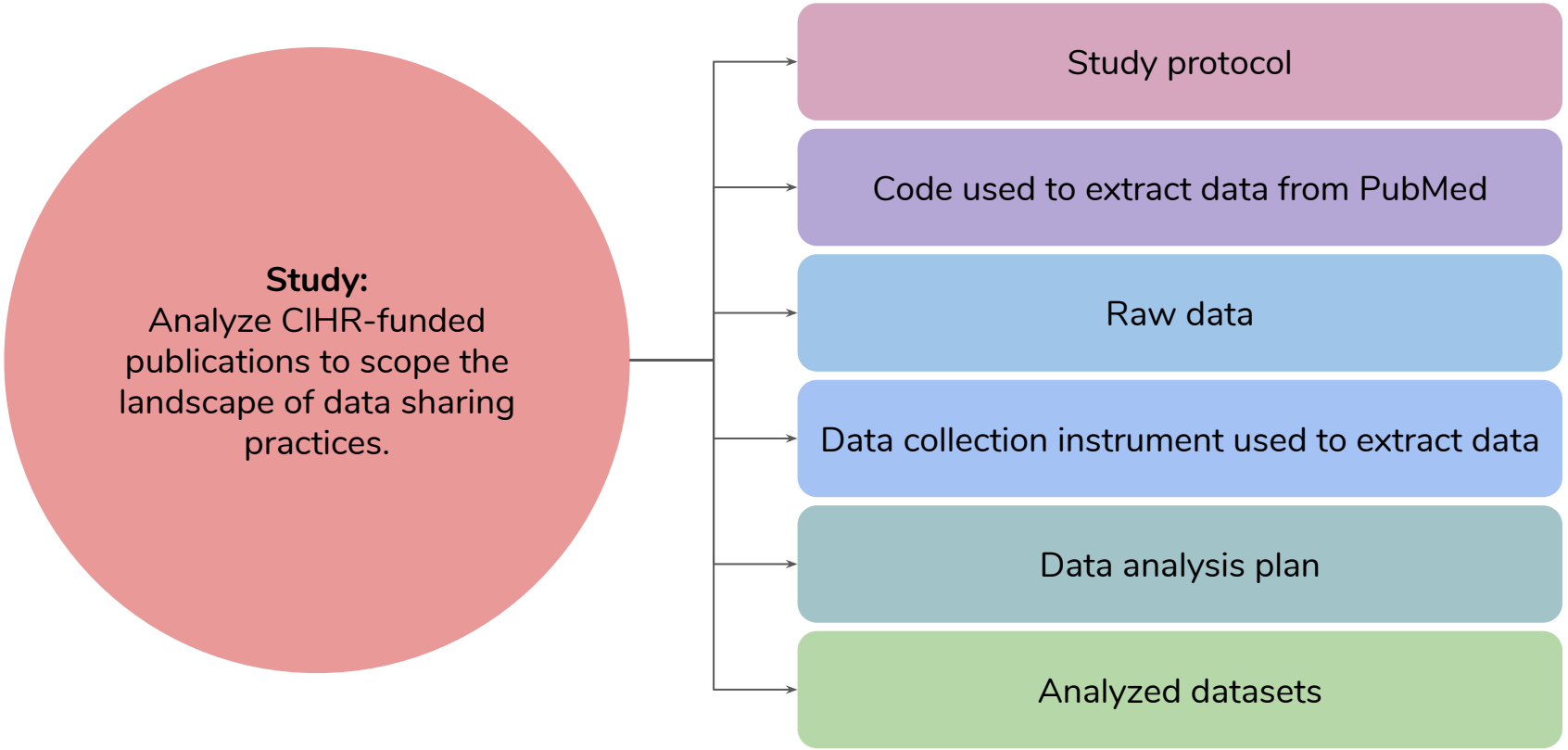
A pre-print server is available to publish research before peer review



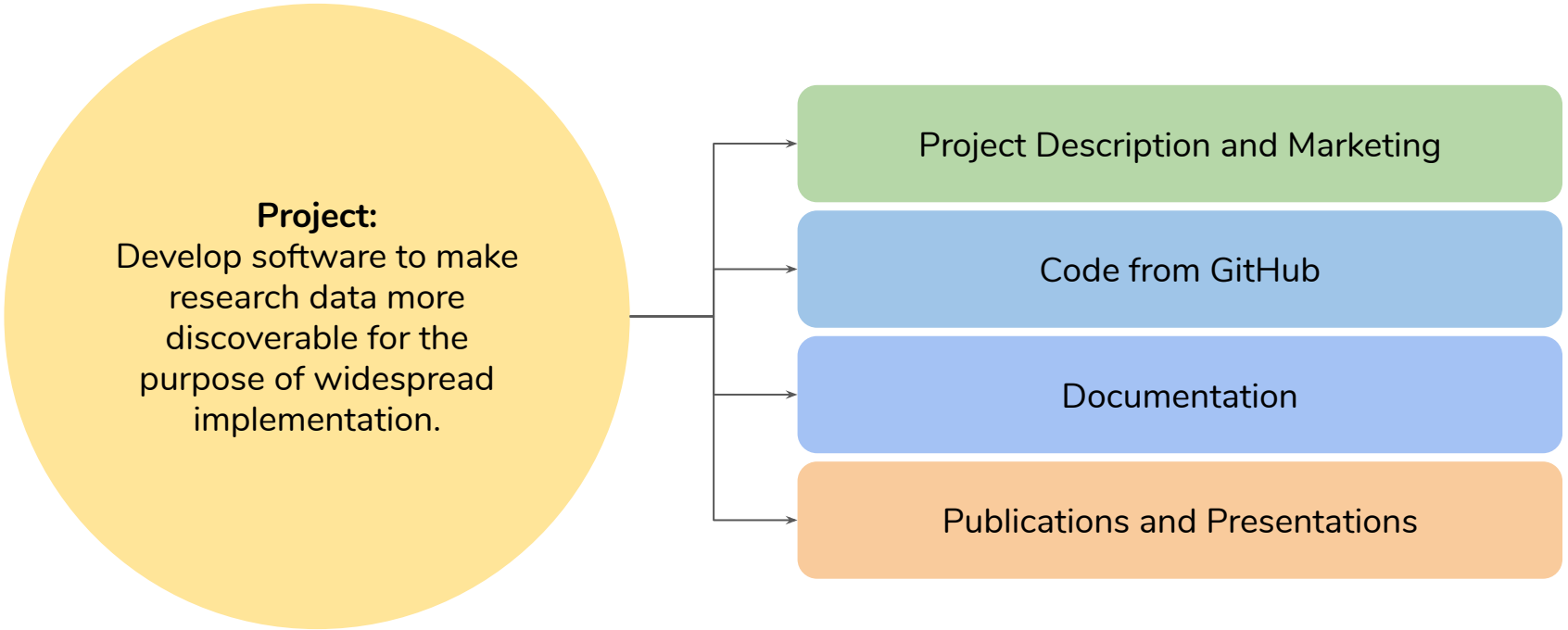
OSF Demo

Case Studies

Case Study 1: My Research



Case Study 2: Software Project



Wrap-up

Pros & Cons of OSF

PROS

- A one-stop-shop for making your project open
- Intuitive, flexible, and easy to use
- Ability to apply DOIs and licenses to projects
- Easily manage collaborators and project components
- Version control and free storage capacity a big plus

CONS

- Requires adaptation from most research workflows
- Analytics are poor
- Working with add-ons make versioning unstable
- Discoverability of projects not as good as it could be

OSF Summary

OSF is one of the only tools that enables open science practices at every stage of the research process

Useful as a sharing or project management tool

Ideal if you want to make research products open, control terms of use, and have your work cited

Before using OSF, seriously consider your research needs and workflows

Poll:

Would the Open Science Framework suit your research needs?

Resources

Open Science Framework Guides: https://help.osf.io/hc/en-us

OSF 101: https://youtu.be/dLElhJESIQA

Nosek BA. Improving my lab, my science with the open science framework. APS Observer. 2014 Feb 28;27(3).

Sullivan I, DeHaven A, Mellor D. Open and reproducible research on open science framework. Current Protocols Essential Laboratory Techniques. 2019 Jun;18(1):e32.

Tackett JL, Brandes CM, Reardon KW. Leveraging the Open Science Framework in clinical psychological assessment research. Psychological assessment. 2019 Dec;31(12):1386.

Questions?

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