

TOP 10 Tips for Managing Your Data

You are on the front-lines of collecting research data, yet data management has not been part of your formal training.

How can you manage your data effectively, meet funder compliance, and ensure your research findings have long-lasting value to the scientific community? Follow these ten tips to start managing your data like a professional.

1

Data is king.

The data you collect, store, and make available forms the primary evidence that supports your research claims. You should treat data with great care to ensure the integrity of your research.



2

Think broadly about collecting metadata.

Date, time, location, temperature, equipment type and settings, solvents, brands and purity, algorithmic parameters, and more should be included to capture the full picture for reproducibility.



3

Always keep all original files.

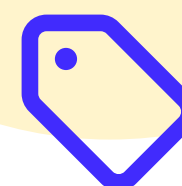
Label these files appropriately as the original or source file, and differentiate in naming from any analyzed files.



4

Properly label data as you collect it.

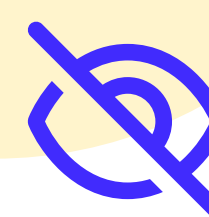
Include all parameters around the data collection or generation, e.g., the metadata.



8

Take into account data needs.

In some situations, privacy, national security, or intellectual property protection come into play, and such data may need to be treated differently.



9

Consider using persistent identifiers.

DOIs, archival resource keys, ORCIDs, and InChis are examples of persistent identifiers that provide unique, interchangeable information that makes your data more discoverable and valuable over the long term.



5

Keep a data log.

Know how and where your data is stored, with specifics such as hardcopy location, notebook page, instrumental output file name.



6

Follow the guidelines.

Know and adhere to the guidelines your funders, institution, and lab have established for data management.



7

Deposit data to publicly accessible databases where feasible.

Cambridge Crystallographic Database, Protein Database, and GitHub are examples of databases that provide data storage that are independent of publication and are free of charge.



10

Keep backups for disaster recovery AND archive your data.

Backup copies for emergencies are required, but they do not replace archives. Archiving data ensures your data can be found long-term and adds value to your data by adding an index and making your data searchable.

