

Dear Dr. Markel,

Thank you for reviewing our manuscript “Ten Simple Rules for Digital Data Storage” and considering our resubmission. We appreciate the thoughtful feedback reviewers have provided and incorporated their comments into our revised manuscript. Below is a detailed accounting of our changes, with reviewer submissions highlighted in bold.

Reviewer #1: The manuscript enumerates a set of “rules” that promote up-front thought during experimental design regarding the long term storage of data generated. Each of the ten rules has a specific focus on one aspect that researchers should consider. The authors clearly communicate the rules with relevant supporting observations. A few minor issues:

Rules 4 and 5 seem like variations on the same rule – keeping the data accessible. It would be helpful to differentiate these rules a bit more.

We have differentiated the rules by focusing on data file formats in Rule 4 and data structure in Rule 5. We believe data can be tidy (rule 5) but in a closed format (rule 4) or vice versa. While we agree with the reviewers comment that these rules focus on a similar theme, it is easy to imagine a scenario where a scientist might put very tidy data in a closed format such as JMP or Excel files. We have renamed Rule 5 to “Data should be structured for analysis” and also substantially restructured the paragraphs of rule 5 to enhance this distinction.

Line 21: is a good advice => is good advice

We have fixed this typo.

Line 136: States that an example of machine readable open format that would not be easy to process include Microsoft word, but in the preceding rule (Rule 4) it states that Microsoft excel is not an open format. Perhaps just keep PDF as the example.

We removed this line from rule 5.

Lines 140-144: discussing source code doesn’t really fit in this section. Perhaps move these lines to the section about metadata (Rule 7).

We removed the reference to metadata as the reviewer notes it is probably not truly metadata but is more like provenance of an analysis. However we feel it is important to highlight that structured data facilitates the transparency of an analysis and have kept those lines in.

Line 147: variable is a column => variable as a column

We have fixed this typo.

Line 147-148: unit is a table => unit as a table

We have fixed this typo.

Line 161: standards-compliant data, it *is* easier to build

We have fixed this typo.

Line 200: meta-data in in well => meta-data in well

We have fixed this typo

Line 201: Extraneous close paren) after JSON

We have deleted this dangling parentheses.

Line 244: Seems like an appeal to authority. Replace explicit reference to Kristen Briney

Line 252-253: We have removed this appeal and replaced it with a citation to the blog post.

Line 245: Include a caution with respect to Rule 8 (ensure that the offsite “cloud” storage is as secure as the primary storage)

Line 253-254: We added an additional clause that advises users to be sure that offsite storage is secure

Line 311: include oxford comma “animals, fungi, and microbes”

An oxford comma has been added.

Line 337-338: ways to programatically query databases through

This sentence has been restructured

Reviewer #2: _Dr. Hart and co-authors presented a comprehensive review on the essential aspects of digital data storage. While situation in reality can become very complicated, these ten simple rules can still provide good and useful guidance for researchers to develop data storage and management systems. Actually, we have pretty much followed these rules in our own practices. The manuscript was concise and well written.

Minor suggestions: _

Page 2, Line 50: “can help” -> “can help to”

We have added the word to

Page 3, Line 89: “can be difficult to impossible for others” -> “can be difficult for others”

We have deleted the word “impossible”

Reviewer #3: *This manuscript discusses ten simple rules for digital data storage. The ten rules provide simple guidelines for how researchers across a variety of disciplines can store their data for long-term access and ensure that the data are usable by others in the future. Compared with other “ten Simple Rules” papers on scientific data management and curation, this manuscript further addresses another facet of data, longer term storage best practices. The*

manuscript represents the collaboration among co-authors from a wide variety of academic backgrounds, who are all part of the Software Carpentry project.

The manuscript could benefit from addressing specific needs for the storage of biological and biomedical data to be more in scope with the main themes of the journal.

We have added several examples in our rules that are specific to biomedical data to address this concern. In particular:

Line 24-26: We suggest GenBank as an example place to archive sequence data

Line 64-66: We suggest using community tools for formatting sequence data and ecological metadata

Line 177-178: We give an example of version numbers that are specific to NCBI repositories

We believe these help bring the manuscript more in line with the main themes of the journal as the author suggests.