Data Policy Implementation
Practices and Perspectives from the Scholarly Publishing Community

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Open access to published scientific findings is of limited value if open access to well-documented research data and accompanying analysis code is not also included.
Without certifying that the data and code that underpin the scientific literature are available and meet community-accepted quality standards, data that are publicly accessible are incomplete or not usable.
Identify the most effective and efficient methods for implementing data policies that incorporate data review and verification.
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What barriers inhibit understanding of data policies and fulfilling the criteria for compliance with policies?

- Editor Survey: 113 / 678 (16.7%)
- Author + Reviewer Survey: 81 / 525 (15.4%)
Identify the most effective and efficient methods for implementing data policies that incorporate data review and verification.

How well do data policies communicate the actions necessary for authors to fulfill criteria for policy compliance?

Policy Language Analysis 54
Identify the most effective and efficient methods for implementing data policies that incorporate data review and verification.

What improvements to integrated manuscript publication and data review workflows could reduce the burden of policy implementation and compliance on editors, reviewers, and authors?
Does the data policy issued by the journal require authors to do the following?

Did the data policy issued by the journal require you to do the following?

- Submit **data** underlying article findings to a trusted repository
- Submit **analytic methods** (e.g., code, scripts, packages) to a trusted repository
- Submit **research materials** (e.g., codebook, readme file) to a trusted repository
<table>
<thead>
<tr>
<th>COS TOP GUIDELINES</th>
<th>TOP LEVEL 0</th>
<th>TOP LEVEL I</th>
<th>TOP LEVEL II</th>
<th>TOP LEVEL III</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONDITIONS</td>
<td>--</td>
<td>availability statement</td>
<td>availability statement + repository</td>
<td>availability statement + repository + analysis review</td>
</tr>
<tr>
<td>STRENGTH OF LANGUAGE</td>
<td>encourage support</td>
<td>conditional require must</td>
<td>should mandatory</td>
<td>compulsory expect</td>
</tr>
<tr>
<td>RELEVANT TERMS</td>
<td>Terms to describe: data, dataset, sequence, array</td>
<td>analytic methods, code, programs, scripts</td>
<td>materials, documentation, explanatory file, protocols</td>
<td>-</td>
</tr>
</tbody>
</table>
Policy language vs. policy comprehension

- Data Transparency: 22, 23, 22
- Analytic Methods Transparency: 11, 21, 16
- Research Materials Transparency: 16, 12, 13
What strategies or mechanisms have contributed most to the success of data policy implementation for the journal?

“The success appears to be largely driven by **shifting attitudes in the discipline** towards the recognition that data archiving is a good thing and the **cooperation among leading journals** to implement this policy at the same time.”

“Developing policies with significant **input from stakeholders and broad consensus**”

“Strong **community buy-in.**”
How challenging did you find the following aspects of fulfilling data policy requirements?

<table>
<thead>
<tr>
<th></th>
<th>Very challenging</th>
<th>Somewhat challenging</th>
<th>Only a little challenging</th>
<th>Not challenging at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submit data ...</td>
<td>1 (2%)</td>
<td>3 (5%)</td>
<td>23 (41%)</td>
<td>29 (52%)</td>
</tr>
<tr>
<td>Submit analytic methods ...</td>
<td>1 (3%)</td>
<td>6 (18%)</td>
<td>8 (24%)</td>
<td>19 (56%)</td>
</tr>
<tr>
<td>Submit research materials ...</td>
<td>0 (0%)</td>
<td>2 (8%)</td>
<td>8 (32%)</td>
<td>15 (60%)</td>
</tr>
</tbody>
</table>
Best Practices for Implementing a TOP Level III Data Policy

1. Policy awareness and understanding
2. Policy support and guidance
3. Standard policy criteria
4. Data quality standards
5. Data repository partnership
Best Practices for Implementing a TOP Level III Data Policy

Manuscript Submission — Manuscript Review — Article Publication

Manuscript Submission — Data Package Review — Data Publication
Best Practices for Implementing a TOP Level III Data Policy

ROLES & RESPONSIBILITIES

Manuscript Submission

Manuscript Review

Data Package Review

Article Publication

Data Publication

TASK COORDINATION

COMPUTING SYSTEMS
THANK YOU!

Increasing the Value of Open Access through Open Data Publication Policies

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