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Assisting Geophysicists in Data Management: Perceptions and Opportunities

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Background

Open Data

- Funders often require data management plans
- Data papers and data sets are being cited more often
- Data sharing is on the rise, but many fields are lagging behind

Research Questions

- Do AGU scientists view data sharing positively or negatively?
- Are AGU scientists willing to share and reuse data?
- Why do AGU scientists share/not share data?

Methods

Survey

- Survey contained 56 questions
- Likert-type scale was used to capture researcher attitudes
- Questions related to sharing own data and reusing others data

Disciplines

<table>
<thead>
<tr>
<th>Subject Discipline</th>
<th>Survey Respondents</th>
<th>AGU Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Sciences</td>
<td>20.3%</td>
<td>25.9%</td>
</tr>
<tr>
<td>Atmospheric Science</td>
<td>17.2%</td>
<td>28%</td>
</tr>
<tr>
<td>Eng/Info Sci/Comp Sci</td>
<td>6.8%</td>
<td>7%</td>
</tr>
<tr>
<td>Geology/Earth Science</td>
<td>26.4%</td>
<td>14%</td>
</tr>
<tr>
<td>Hydrology</td>
<td>8.3%</td>
<td>12%</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>14.7%</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>6.3%</td>
<td>10%</td>
</tr>
</tbody>
</table>

- Disciplines in sample represent broad range of research at AGU

Distribution

- 1,372 respondents from 116 countries with a response rate of 2.2%
- Distributed survey to all 62,000 AGU members
- Distribution was also carried out by champions from several institutions

Results

Do AGU scientists view data sharing positively or negatively? Answer: POSITIVELY

Most scientists AGREE that using other’s data can:
- help answer Qs
- be efficient
- save time
- improve results

Scientists do NOT agree that using other’s data:
- requires trust
- is hard to explain
- takes too long

Are AGU scientists willing to share their own or reuse others’ data? Answer: Yes! With conditions...

Scientists are willing to use other’s data if:
- Metadata/notes are provided
- Provenance is provided
- It is easy to access
- Scientists are unsure about how a workflow could be useful when using other’s data

Why do AGU scientists share/not share data?

Insight 1:

Scientists are largely satisfied with the status quo:
- 74.8% for short term storage
- 51.2% for long term storage

Scientists are unaware of metadata and provenance tools and repositories

For others to use my data, I would want...

Answer:

- Acknowledgement
- Citation
- Collaboration
- Scientists are less concerned about outputs, reciprocal sharing, and agreements over use

Insight 2:

Scientists solve data related problems on their own, by asking their research team, or consulting colleagues

Scientists do NOT ask for help the information specialists available in the library or data management experts