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Assisting geophysicists in data management: Perceptions and opportunities.

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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

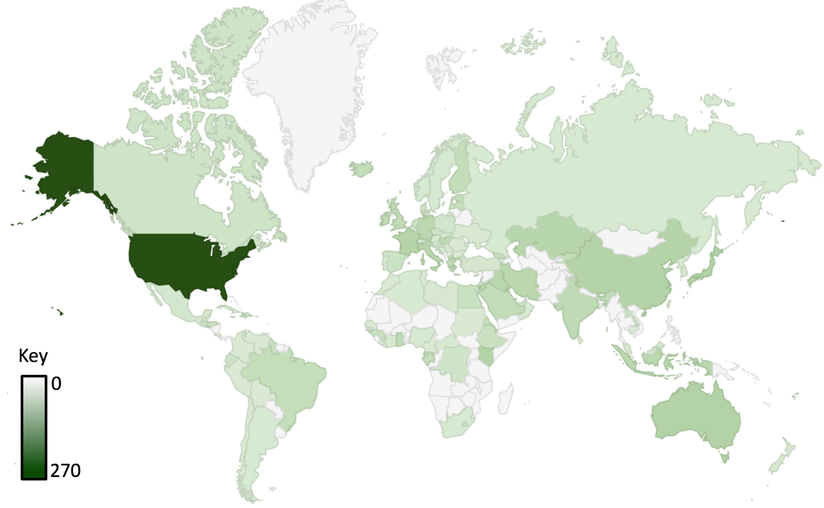
Disciplines

Subject Discipline	Survey Respondents	AGU Membership
Life Sciences	20.3%	25%
Atmospheric Science	17.2%	28%
Eng/Info Sci/Comp Sci	6.8%	7%
Geology/Earth Science	26.4%	14%
Hydrology	8.3%	12%
Physical Sciences	14.7%	13%
Other	6.3%	10%

- Disciplines in sample represent broad range of research at AGU

Distribution

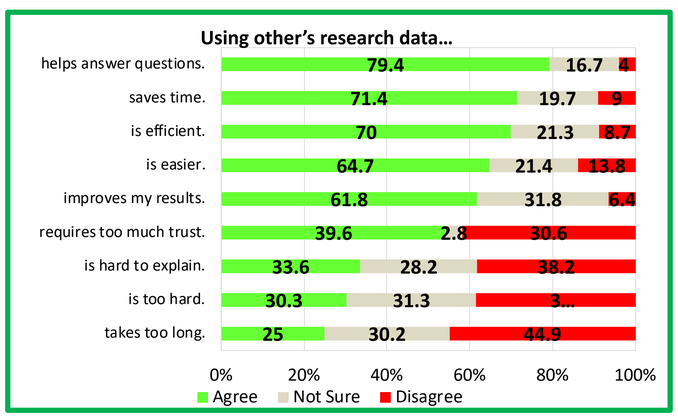
- 1,372 respondents from 116 countries with a response rate of 2.2%



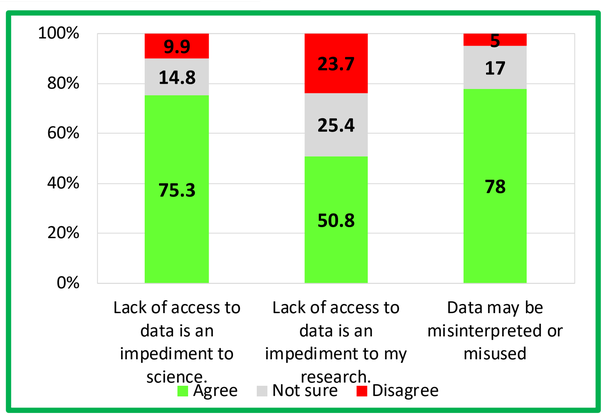
- Distributed survey to all 62,000 AGU members
- Distribution was also carried out by champions from several institutions

Results

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

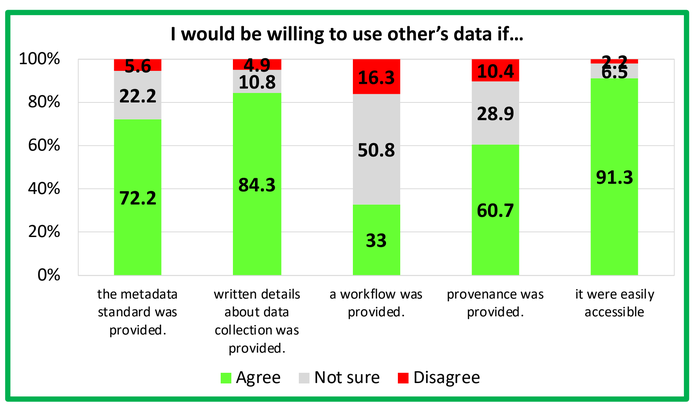


- Most scientists AGREE that using other's data can:
  - ✓ help answer Qs
  - ✓ be efficient
  - ✓ save time
  - ✓ improve results
- Scientists do NOT agree that using other's data:
  - ✓ requires trust
  - ✓ is to hard
  - ✓ is hard to explain
  - ✓ takes too long

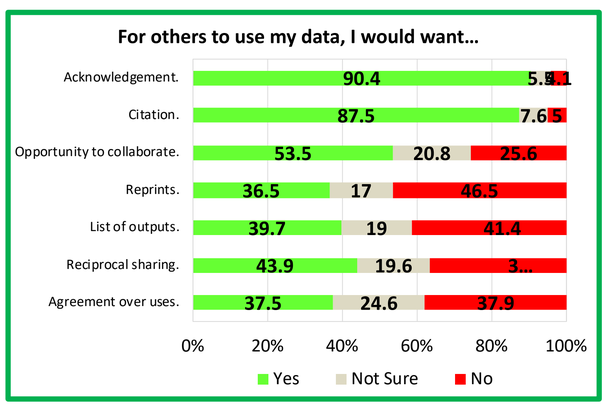


- 75.3% of scientists agree that lack of access to data is an impediment to science
- Over half of scientists agree that lack of access to data is an impediment to their own research, BUT…
- 78% of scientists are concerned that their data might be misinterpreted or misused by others

Are AGU scientists willing to share their own or reuse other's data? Answer: Yes! With conditions…

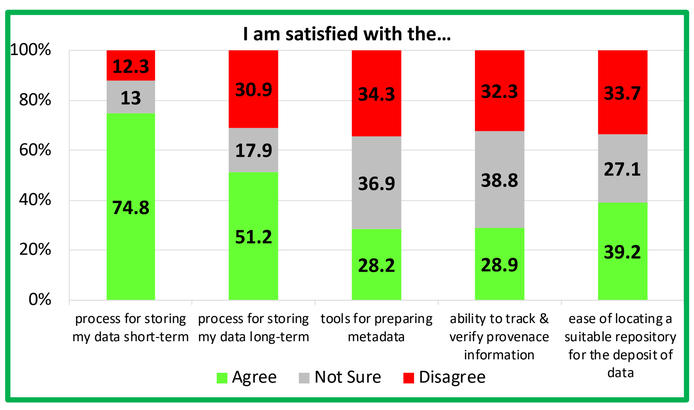


- Scientists are willing to use other's data if:
  - ✓ Metadata/notes are provided
  - ✓ Provenance is provided
  - ✓ It is easy to access
- Scientists are unsure about how a workflow could be useful when using other's data



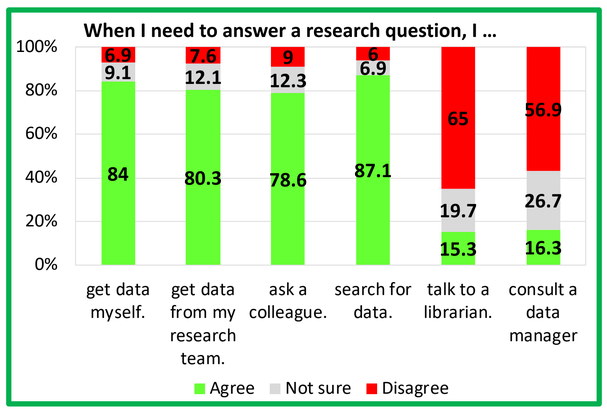
- Scientists are willing to share their data for:
  - ✓ Acknowledgement
  - ✓ Citation
  - ✓ Collaboration
- Scientists are less concerned about outputs, reciprocal sharing, and agreements over use

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**



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**

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