Data Archives and other Sources of Data

Week 4
Data Science Workshop for
NGA LTER REU Students

Review of Last Week

1. Metadata is the backbone of data discovery

2. Think about Metadata from the beginning of your research

3. Take advantage of:

   - Tools
   - Code
   - People

4. Conform to standards

Goals for Today

- Take a tour of Data Archives

- Citing data in articles

- What is a persistent digital object identifier (DOI)?

Take a Tour

How to Cite Data

How to give credit for data?

Acknowledgements:

- In Methods section
- In separate Acknowledgments section

Best for:

- Loosely structured data
- Informal exchanges
- Data lacks cohesion (i.e. metadata) and persistence

How to give credit for data?

Co-Authorship:

- Integral to analysis
- Data are novel
- Data provider willing to help draft and revise the manuscript
- Data provider able to participate (i.e. not dead)

Best for:

- Showing respect
- Building collaborations

When I was made a co-author :-/

Tian, F., Pickart, R. S., Lin, P., Pacini, A., Moore, G. W. K., Stabeno, P., et al. (2021). Mean and seasonal circulation of the eastern Chukchi Sea from moored timeseries in 2013–2014. Journal of Geophysical Research: Oceans, 126, e2020JC016863.

https://doi.org/10.1029/2020JC016863

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Tian et al. included a Data Availability Statement

Open Research

Data Availability Statement

The mooring data are available at the following sites: UW moorings A2, A3, and A4: http://psc.apl.washington.edu/HLD/Bstrait/Data/BeringStraitMooringDataArchive.html ; JAMSTEC moorings BCH: http://www.jamstec.go.jp/arctic/data_archive_work/mooring/mooring_index.html ; WHOI moorings CT: https://www.data.boem.gov/ PMEL mooring C1, C2, C5, C6, and C7: NCEI submittal Reference ID E13NLG, 19RD6Y, 1JC625, H2LC81, UJCDN3, and 5YX626. All other moorings are in NODC (NCEI) archives (https://www.ncei.noaa.gov/access/metadata/landing-page/bin/iso?id=gov.noaa.nodc:0164964): ASL Moorings Cj and Bu: 0164964 Currents, Ice Analysis, Temperature, and Salinity from Industry Sponsored Moorings in the Chukchi Sea, Alaska, 2008–2016. UAF Mooring BC2: 0160090 Currents, Temperature, Salinity, and Sea Ice measurements from moorings in Barrow Canyon, Chukchi Sea, 2010–2015. UAF Moorings NW40, NW50, NE40, NE50, NE60, FM1: 0163833 Currents, Ice Velocity, Temperature, and Salinity from moorings around Hanna Shoal, Chukchi Sea, 2012–2014.

How to give credit for data?

Data Citation:

- Formal reference to data
- Like bibliographic citations
- Data as a primary research output

Best for:

- Data in a public repositories
- Datasets with a persistent digital object identifier

When my datasets were cited as datasets !

Baumann, T.M., Polyakov, I.V.,
Padman, L. et al.
Arctic tidal current atlas.
Sci Data 7, 275 (2020).
https://doi.org/10.1038/s41597-020-00578-z

23. Mudge, T., Weingartner, T. & Dobbins, E. Eastward and northward components of ocean current, temperature, salinity and ice analysis collected from industry sponsored moorings in the Chukchi Sea, Alaska from 2008-09-08 to 2016-10-13. *NOAA National Centers for Environmental Information*, https://accession.nodc.noaa.gov/0164964 (2017).

24. McRaven, L. Mooring Observations from the Atlantic Water Inflow Experiment (ATWAIN) from September 21, 2012 through September 19, 2013. *Arctic Data Center*, https://doi.org/10.18739/A2S569 (2018).

25. Gratton, Y. *et al*. Long-term oceanic observatories (moorings) in the Beaufort Sea during the Canadian Arctic Shelf Exchange Study, 2002-2004. *Polardata.ca*, https://doi.org/10.5884/11653 (2015).

26. Weingartner, T., Statscewich, H., Stoudt, C. & Dobbins, E. Currents, Temperature, Salinity, and Sea Ice measurements from moorings in Barrow Canyon, Chukchi Sea, 2010–2015. *NOAA National Centers for Environmental Information*, https://accession.nodc.noaa.gov/0160090 (2017).

What is a Persistent Digital Object Identifier?

Persistent Digital Object Identifier

- Unique
- Web compatible
- Points to a resource
- Maintained by organizations
- Meant to be preserved into the future

Can be cited or referred to in journal article because it isn't going away.

Specifically, what is a DOI?

- A pointer to where the dataset really is
- Can be updated if the dataset moves
- International system
  - Administered by 8 DOI Registration Agencies
  - Registrants are companies or individuals who assigning the DOIs

https://doi.org/10.24431/rw1k595

Means DOI

Research Workspace

Assigned by Research Workspace

Finish-up

- Assignment #4 on GitHub - [Install Bash Shell](#)

- Next week we will be at a this Zoom Link again

Resources

- [DataONE Data Citation Handout](#)
- [Data citation - Australian National Data Service](#)
- [DOI Citation Formatter](#)
- Clifford S. Duke, John H. Porter, The Ethics of Data Sharing and Reuse in Biology, BioScience, Volume 63, Issue 6, June 2013, Pages 483–489, https://doi.org/10.1525/bio.2013.63.6.10
- [NGA LTER DataONE Data Catalog](#)