

# GAGE

National Science Foundation's Geodetic Facility for the Advancement of Geoscience

#### Project Overview

**Our project goal is to highlight the importance** of open science by utilizing open science principles to establish a digital archive of interoperable geochemical data for the US **Geological Survey (USGS).** 

# Background

The USGS is responsible for **collecting** and **sharing** many different types of **data** characterizing Earth systems.

Our primary focus was the **GeoArchive project** where we are formally documenting an information management protocol for dealing with data extraction from National Instrument (NI) **43-101 technical reports** and the archival process for these reports.

# Importance of Open Science

**Open Science makes data available and interoperable.** The goal of open science is to increase the reproducibility and integrity of academic research across all sectors.



# **Exploration of Open Science Practices** within the Geosciences

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# GeoArchive

- The GeoArchive project goal is to promote open science principles through creating standardized operating procedures (SOP's) for geochemical data and making these standardized data reports more widely accessible.
- These technical reports document a summary of scientific and location information about geochemical samples from mineral deposit sites around the world.
- We published a SOP on the open science platform Protocols.io to extract and archive the data and metadata from each report.



# Process

- 1.Analyzed the problem of da extraction wit NI 43-101 reports.
- **2.Pulled** these files from SEDAR.com recorded step
- **3.Designed** a second protoc used to **publ** reports on Sciencebase. identifying metadata in t report.
- 4.Combined th protocols used extraction a publication reports.

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Bristol, S. (2021, May 24). *Google Colab*. Google Colab. Bristol Sky. (2021, June 14). Trello.com [Is a web-based list-making application]. Trello.Com/Summer Intern Task. CERN. (2021, July 22). Zendo [Library]. Zenodo.Org.

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Protocols.io was a useful tool for designing protocols that were used to retrieve and record formalized scientific research data.

For our bibliography organization we used Zotero to manage bibliographic data or related research materials.

We used Open Science Framework (OSF.io) as an open shared archive for this project.

We used Trello as a task manager for this project. Team members were able to manage all tasks in the workspace collectively.

We used GitHub to publish our Python code that we made to create an archive of our Trello board, this was done to keep our work transparent.

**Protocol.io SOP for Zotero** 



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We feel it is important to acknowledge that we are on the traditional territory of the Cheyenne, Núuagha-tuvu-pu (Ute), Arapahoe, Očhéthi Šakówin (Sioux), and Jicarilla Apache peoples

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Swift, J., Sowers, A., & Bristol, S. (2021, May 24). OSF (EMMA Summer of R&D) [Open source web application that connects and supports the research workflow]. OSF.Io. https://osf.io/t6azp/wiki/home/ United Nations Educational Scientific and Cultural Organization (UNESCO). (2021). Towards a UNESCO Recommendation on Open Science. https://en.unesco.org/sites/default/files/open\_science\_brochure\_en.pdf



# Open Science Tools

# es protocols.io









#### Products







**Protocol.io SOP for data** extraction from SEDAR



# Acknowledgements

Land Acknowledgement:

