



SCHARE

Tutorial Think-a-Thons



National Institutes of Health



SCHARE

Health Outcome Research Paradigm Shift: Understanding How Big Data Expands Knowledge

April 16, 2025

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Experience poll

Please check your level of experience with the following:

	None	Some	Proficient	Expert
Python	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cloud computing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Terra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health disparities research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health outcomes research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

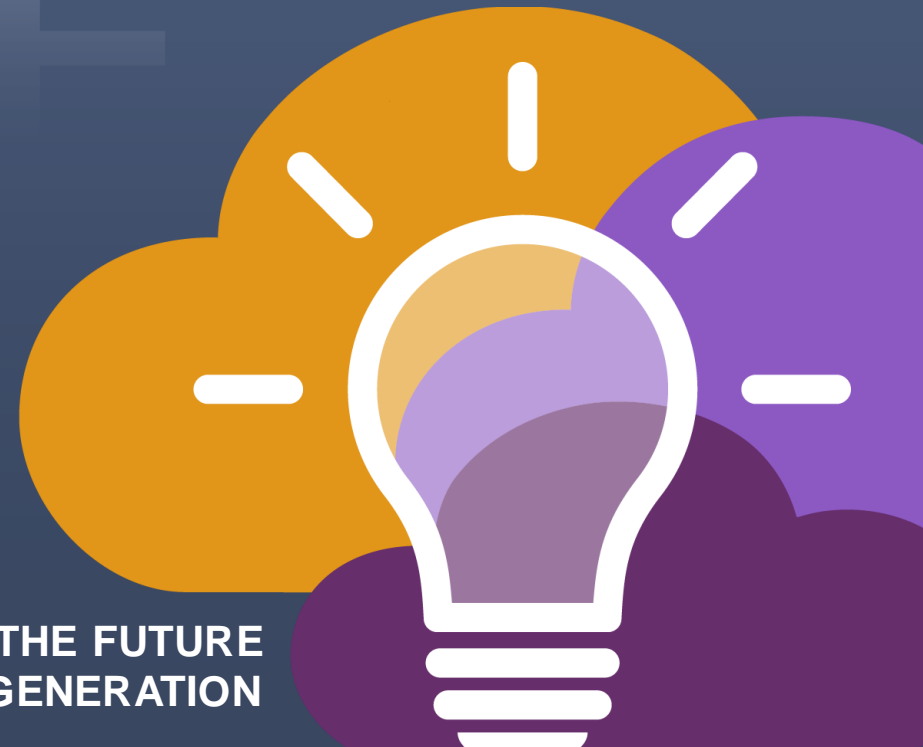
Interest poll

I am interested in (check all that apply):

- ☐ Learning about Health Disparities and Health Outcomes research to apply my data science skills
- ☐ Conducting my own research using AI/cloud computing and publishing papers
- ☐ Connecting with new collaborators to conduct research using AI/cloud computing and publish papers
- ☐ Learning to use AI tools and cloud computing to gain new skills for research using Big Data
- ☐ Learning cloud computing resources to implement my own cloud
- ☐ Developing ethical AI strategies
- ☐ Other

SCHARE

What is SCHARE?



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SCHARE

**Science
Collaborative for
Health disparities and
Artificial intelligence
Reduction of
Errors**



SCHARE is a cloud-based population science data platform designed to accelerate research population health research, including chronic diseases, health disparities & health outcomes by utilizing transparent artificial intelligence (AI) approaches with a focus on the reduction of errors in the use and reuse of models designed to accelerate innovative research that includes place-based factors and biologics for whole-person health discoveries.

SCHARE aims to fill five critical gaps:

- Leverage population science, place-based, and behavioral Big Data and cloud computing tools to foster a paradigm shift in health disparity and healthcare delivery outcomes research to generate innovative whole-person health discoveries
- Advance use of transparency and sophisticated inquiry to develop innovative strategies and differing perspectives to reproducibility and to reduce AI errors
- Upskill novice untrained users in data science through cloud computing skills training, cross-discipline mentoring, and multi-career level collaborating on research
- Provide a data science cloud computing resource and data center for community colleges, and low resource institutions and organizations
- Offer a project data repository centered on core common data elements for enhanced data interoperability and compliance with NIH Data Management and Sharing Policy

Register: nimhd.nih.gov/schare



SCHARE



Google Platform Terra Interface

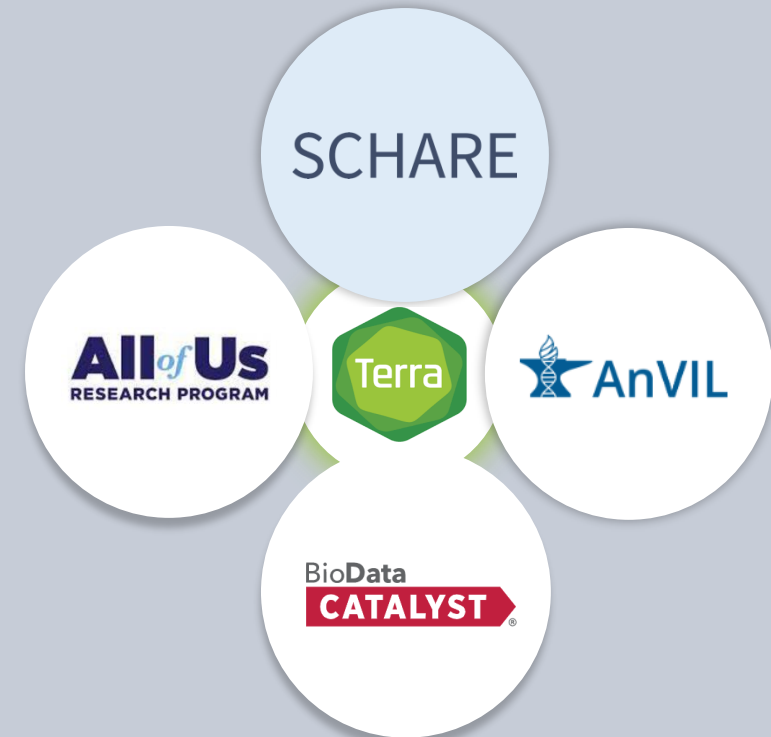
- Secure workspaces
- Data storage
- Computational resources
- Tutorials (how to)
- Copy-and-paste code in Python and R
- Learning Terra on SCHARE prepares you to use other NIH platforms



Terra recommends using **Chrome**
Must have a **Gmail** friendly account

PREPARING FOR AI RESEARCH AND HEALTHCARE USING BIG DATA

Mapping across cloud platforms with
Terra interface for collaborative research



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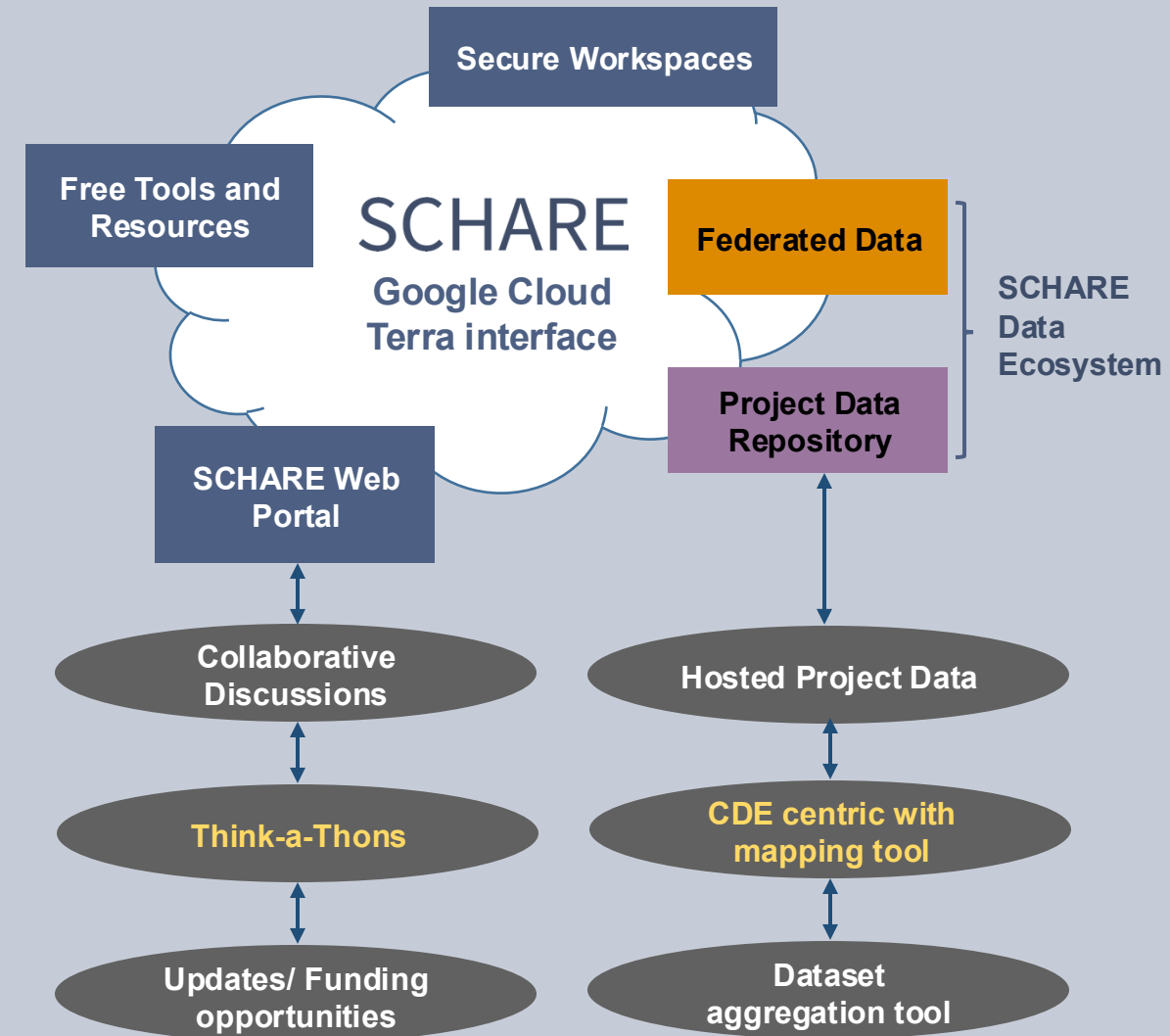


SCHARE Components

SCHARE co-localizes within the cloud:

1. **Datasets** relevant to health disparities, health care delivery, and health outcomes research, including social determinants of health and other social science behavioral data
2. **A project data repository** for NIH-funded projects centered on Core Common Data Elements for enhanced data interoperability and compliance with NIH Data Management and Sharing policy
3. **Secure, collaborative workspaces** and for researchers and relevant collaborators
4. **Computational capabilities** for collaboratively evaluating designing and assessing fit-for-purpose utilization of datasets and algorithms to generate AI models that are effective and efficient

Intramural and Extramural Resource



SCHARE

SCHARE Terra Platform

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National/Federated Datasets

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SCHARE Ecosystem structure

Researchers can access, link, analyze, and export **a wealth of SDoH and population science related datasets** within and across platforms relevant to research about health disparities, health care delivery, and health outcomes, including:

300+
FEDERATED
PUBLIC
DATASETS

Public datasets

Publicly accessible, federated, de-identified datasets hosted by SCHARE or hosted by Google through the Google Cloud Public Dataset Program

Examples: *Behavioral Risk Factor Surveillance System (BRFSS)*
American Community Survey (ACS)

CDE
FOCUSED
REPOSITORY

Project datasets

Publicly accessible and controlled-access, funded program/project datasets using Common Data Elements shared by NIH grantees and intramural investigators to comply with the NIH Data Sharing Policy

Examples: *Forthcoming datasets such as the Jackson Heart Study (JHS)*

Innovative Approach:
CDE Concept Codes
Uniform Resource Identifier (**URI**)

SCHARE Ecosystem

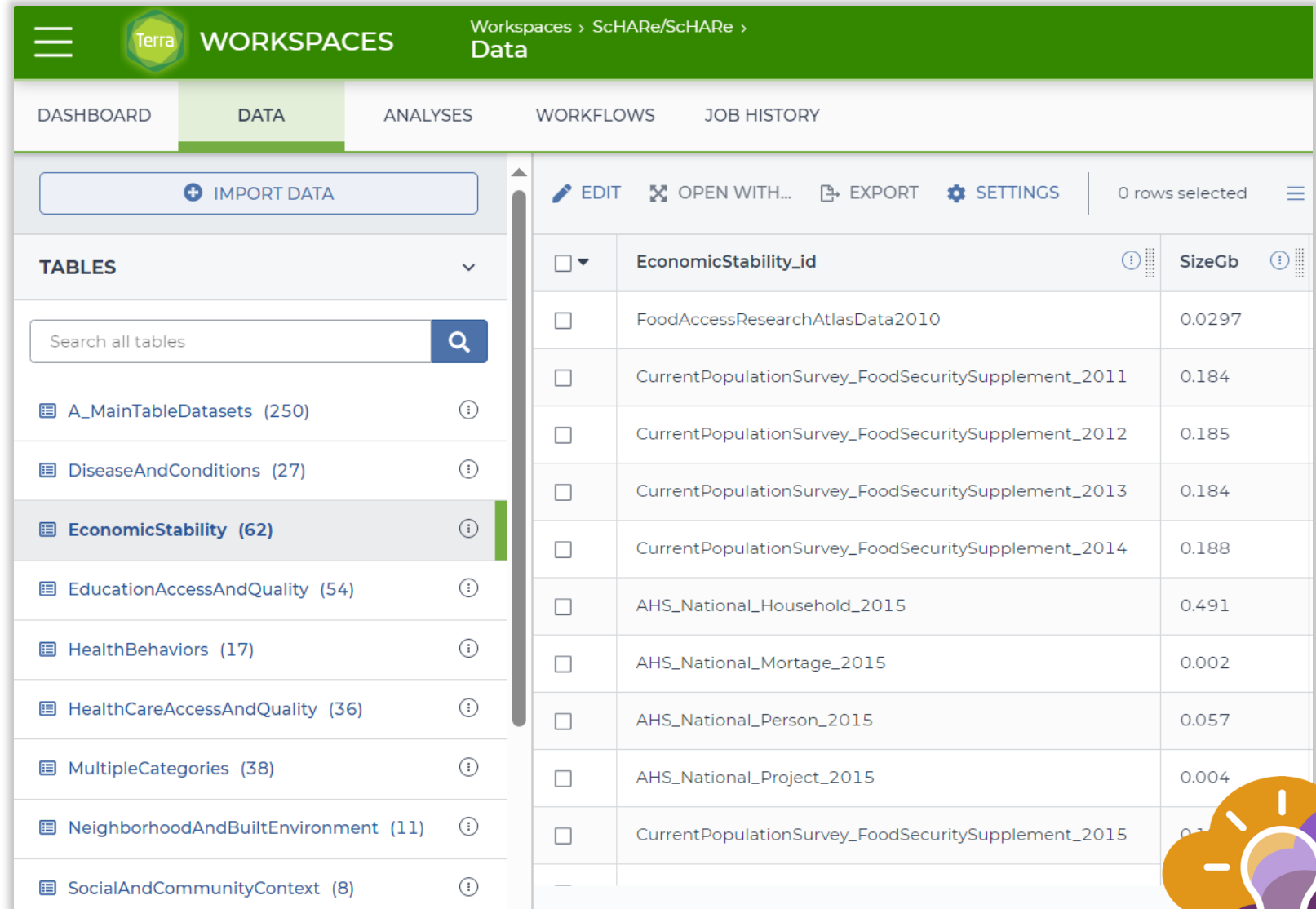
OVER 300 DATA SETS CENTRALIZED

Datasets are categorized by content based on the CDC **Social Determinants of Health** categories:

1. Economic Stability
2. Education Access and Quality
3. Health Care Access and Quality
4. Neighborhood and Built Environment
5. Social and Community Context

with the addition of:

- **Health Behaviors**
- **Diseases and Conditions**



The screenshot shows the Terra WORKSPACES Data interface. The top navigation bar includes a menu icon, the Terra logo, and the text 'WORKSPACES' and 'Workspaces > ScHARe/SchARe > Data'. Below this is a secondary navigation bar with tabs: DASHBOARD, DATA (selected), ANALYSES, WORKFLOWS, and JOB HISTORY. The main content area is divided into two panels. The left panel, titled 'TABLES', contains an 'IMPORT DATA' button, a search bar labeled 'Search all tables', and a list of datasets. The 'EconomicStability' category is highlighted with a green bar and contains 62 datasets. The right panel displays a table of datasets with columns for selection, name, and size. The table lists various datasets including 'EconomicStability_Id', 'FoodAccessResearchAtlasData2010', and several 'CurrentPopulationSurvey_FoodSecuritySupplement' datasets from 2011 to 2015. The table also includes an 'AHS_National' dataset for 2015. The bottom right corner of the interface features a lightbulb icon.

	EconomicStability_Id	SizeGb
<input type="checkbox"/>	FoodAccessResearchAtlasData2010	0.0297
<input type="checkbox"/>	CurrentPopulationSurvey_FoodSecuritySupplement_2011	0.184
<input type="checkbox"/>	CurrentPopulationSurvey_FoodSecuritySupplement_2012	0.185
<input type="checkbox"/>	CurrentPopulationSurvey_FoodSecuritySupplement_2013	0.184
<input type="checkbox"/>	CurrentPopulationSurvey_FoodSecuritySupplement_2014	0.188
<input type="checkbox"/>	AHS_National_Household_2015	0.491
<input type="checkbox"/>	AHS_National_Mortgage_2015	0.002
<input type="checkbox"/>	AHS_National_Person_2015	0.057
<input type="checkbox"/>	AHS_National_Project_2015	0.004
<input type="checkbox"/>	CurrentPopulationSurvey_FoodSecuritySupplement_2015	0.1

SCHARE **Ecosystem**: Public datasets

Examples of interesting datasets include:

- **American Community Survey** (U.S. Census Bureau)
- **US Census Data** (U.S. Census Bureau)
- **Area Deprivation Index** (BroadStreet)
- **GDP and Income by County** (Bureau of Economic Analysis)
- **US Inflation and Unemployment** (U.S. Bureau of Labor Statistics)
- **U.S. Chronic Disease Indicators** (U.S. Census Bureau)
- **Point-in-Time Homelessness Count** (U.S. Dept. of Housing and Urban Development)
- **National Mental Health** (SAMHSA)
- **US Residential Real Estate Data** (House Canary)
- **Center for Medicare and Medicaid Services - Dual Enrollment** (U.S. Dept. of Health & Human Services)
- **National Mental Health** (SAMHSA)
- **Health Professional Shortage Areas** (U.S. Dept. of Health & Human Services)
- **CDC Births Data Summary** (Centers for Disease Control)
- **BRFSS Behavioral Risk Factors**
- **Community Resilience Estimates**: Community resilience estimates calculated by modeling individual and household characteristics
- **Adult Indicators for Oral Health** (NOHSS)
- **Alzheimer's Disease and Health Aging Data** (NIH)





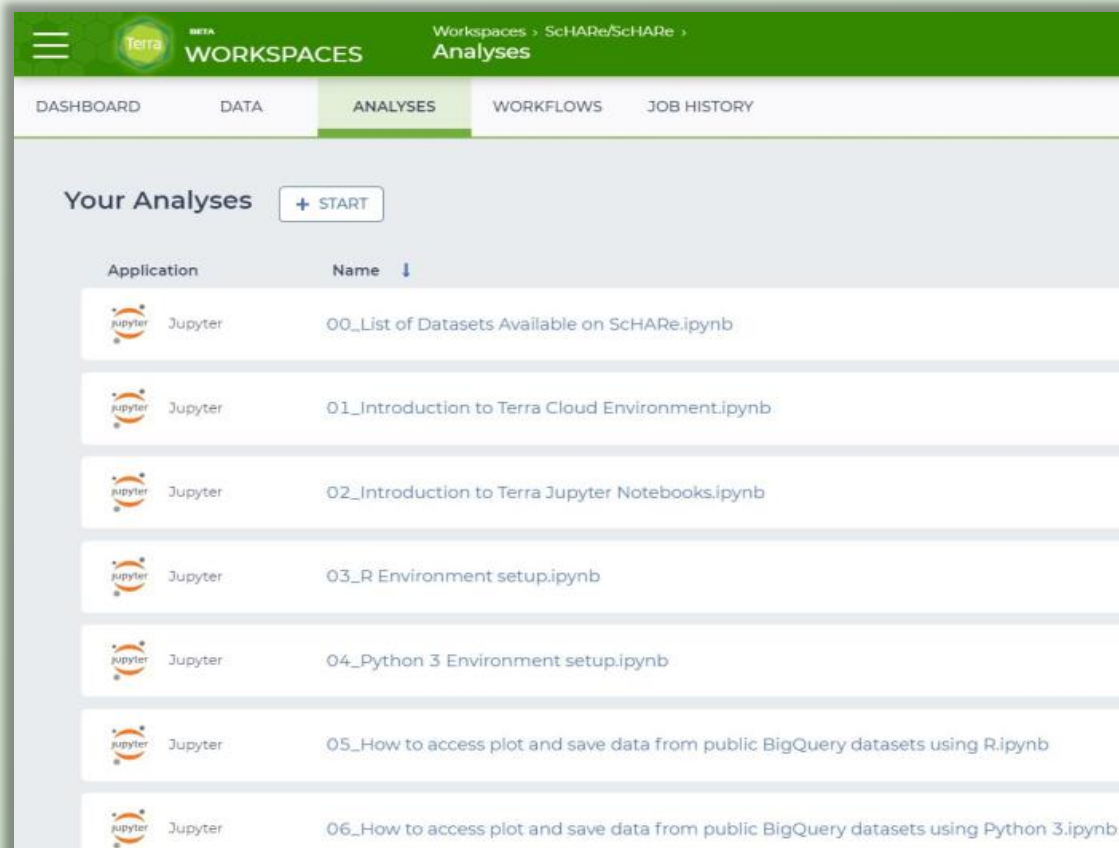
Data Analytic and AI Tools

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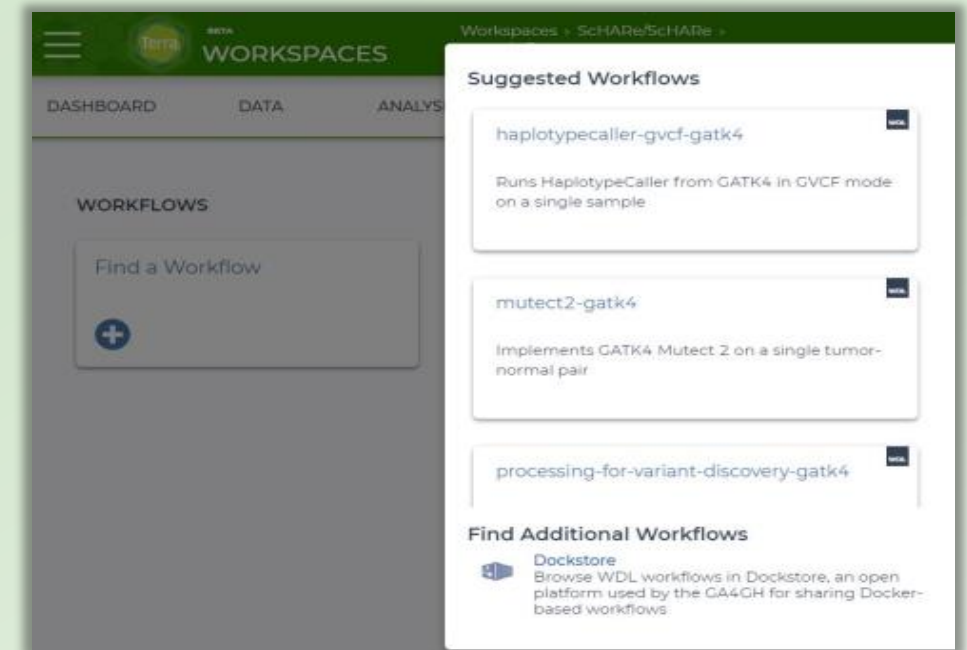
SCHARE Terra interface: Analyses (Notebooks)

Notebooks for analytics and tutorials



Modular codes

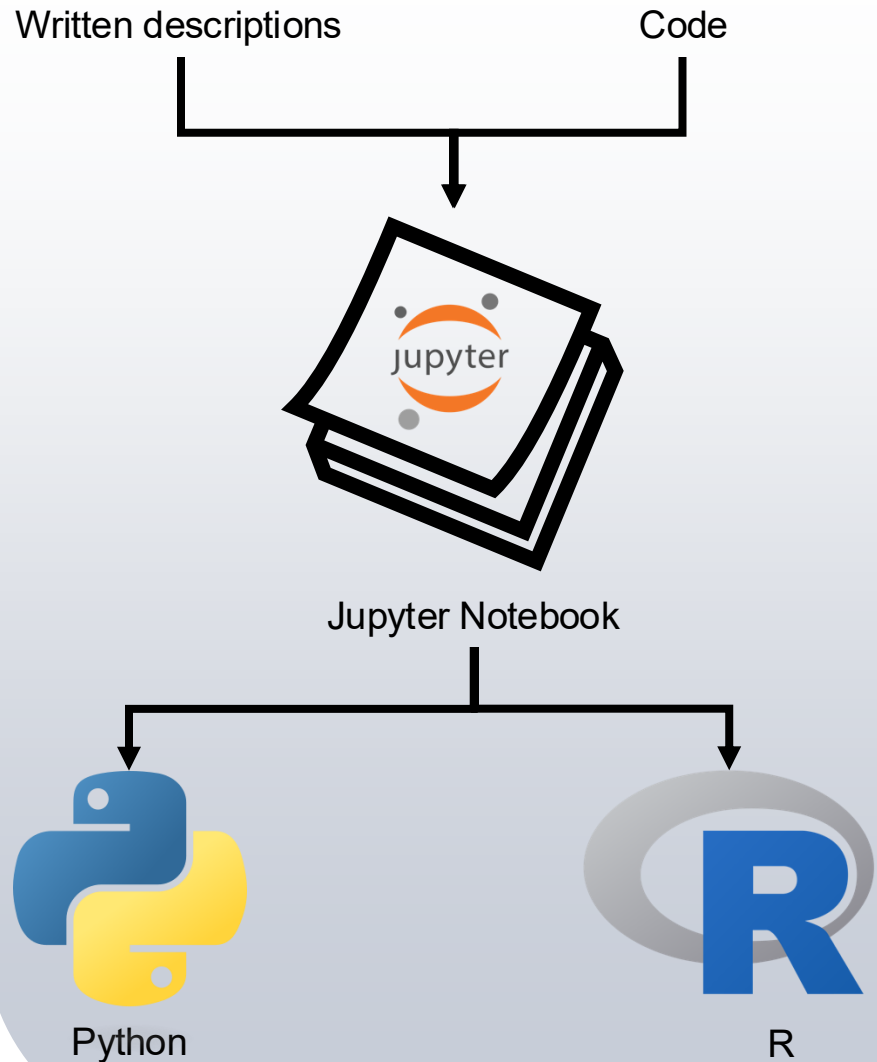
- Easy-to-use copy and paste analytics



- Modular codes developed for reuse



SCHARE Data Analytic Tools



On the SCHARE Workspace



Reference
Notebooks



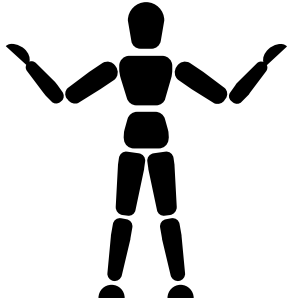
Tutorial
Notebooks



Model
Notebooks



SCHARE Model Notebooks under Analysis Tab



Python code model notebooks
(SCHARE Workspace -> Analyses -> Section B)

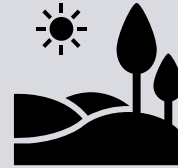
b. 00_Introduction to Python.ipynb



"Table of Contents"

Describes the purpose of all other notebooks in this section

b. 01_Python 3 Environment setup.ipynb



Describes what a python environment is and copy & paste code to set yours up

b. 03_How to access plot and save data from SCHARE hosted datasets using Python 3.ipynb



Copy & paste code for accessing datasets hosted on the SCHARE workspace

b. 02_How to access plot and save data from public BigQuery datasets using Python 3.ipynb



Copy & paste code for accessing datasets hosted by Google BigQuery

b. 04_How to upload access plot and save data stored locally using Python 3.ipynb



Copy & paste code for accessing data on your local computer



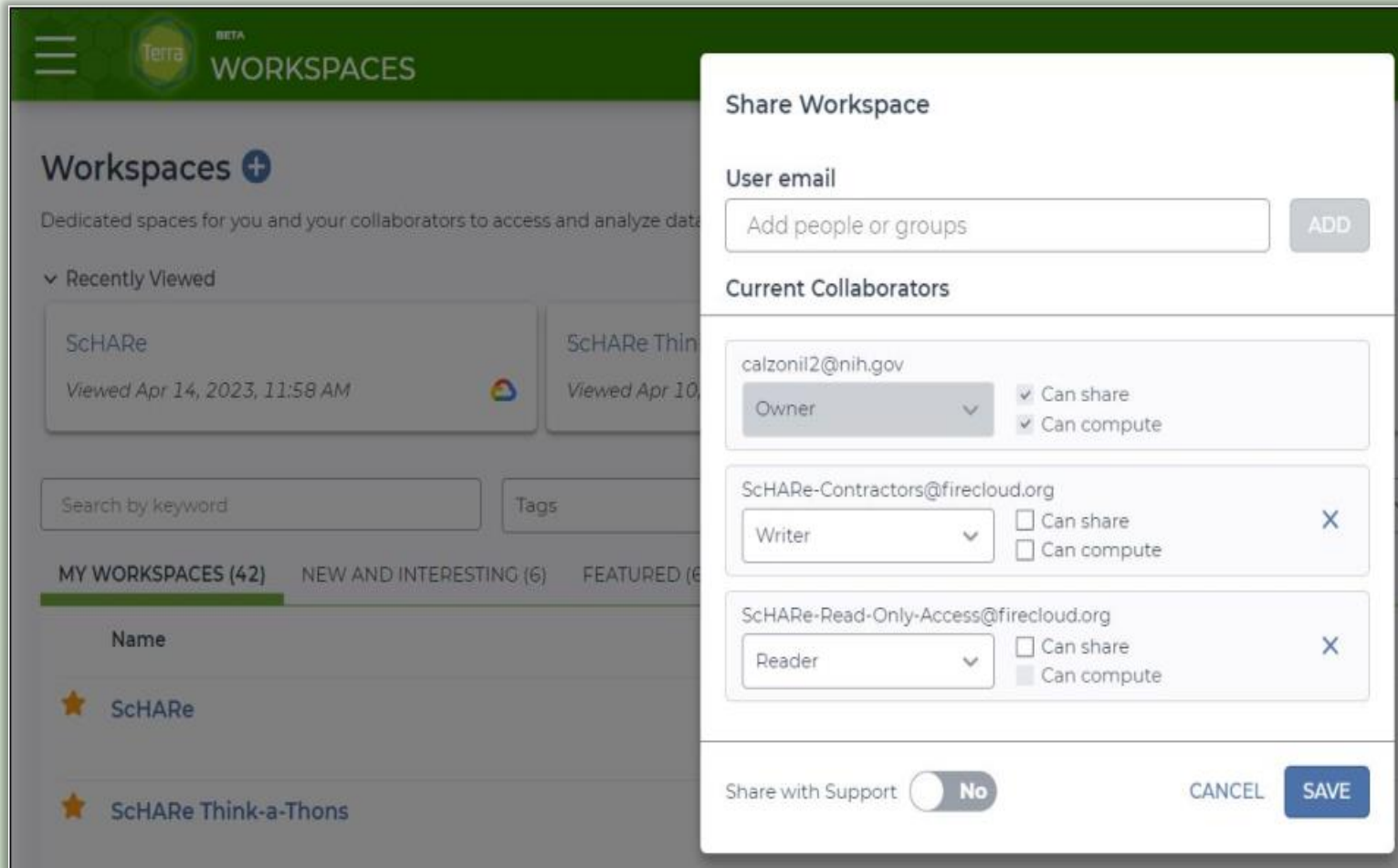
Secure Workspaces for Single and Collaborative Research



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SCHARE Terra interface: secure workspace



- Secure workspace for self or collaborative research
- Assign roles: owner, writer, reader
- Host own data and code



SCHARE

Data Repository

NIH Data Management and Sharing Policy

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The Four Data Lifecycle Stages

The SDR is here to support your research and your data throughout all stages of the data lifecycle. Our touchpoints can be contextualized by thinking about your data in these four stages.



Dawn

Dataset Creation

Researchers can choose to store their data themselves, uploading it upon study completion, or use the SDR as a storage interface.



Midday

Dataset Submission

Researchers submit their data for public sharing on the SDR, creating a controlled-access version if the dataset contains sensitive information.



Golden Hour

Dataset Access

Researchers use the public version of datasets on the SDR, or request access to controlled-access data, for secondary studies.



Sunset

Dataset Archival

Once the dataset meets the archival requirements, the dataset collection is removed from the SDR, and the underlying data is archived.

Key Features of the SCHARE Data Repository

Upload your own data

Store collected data and annotate with a data dictionary. Align data to the SchARE CDEs.

Harmonize data to CDEs

Map uploaded data to CDEs. Join your data with project or federated data via CDEs.

Browse for data

Find relevant federated national datasets or other project data.

Manipulate and aggregate data for analysis

Filter, sort, and select subsets for specific purposes. Link and aggregate datasets.

Control privacy levels and data sharing

Share confidential data among colleagues. Share public access data with the research community.

Data Analysis via SCHARE Terra or local analysis platform



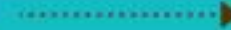
CDE benefits:

- Faster start-up for project
- Better data aggregation across projects
- Shared meaning
- Concept-focused to allow questions/answers variations
- Coding enables an URI approach for better data interoperability

A **Common Data Element (CDE)** is a standardized, precisely defined question, paired with a set of allowable responses, used systematically across different sites, studies, or clinical trials to ensure consistent data collection

Because Researchers use CDEs...

they can more quickly share data and get results faster, which ultimately can help make a **meaningful difference to our nation's health.**



For more information about how CDEs accelerate research discoveries, visit: cde.nlm.nih.gov/resources



SCHARE CDEs Human & Machine Readable

Semantically Defined: (Human Readable)

Each are semantically defined by a standardized coding system for shared meaning

Use of international/national coding systems – LOINC, UMLS, SemNet, FHIR, NCIt

Alcohol:
disinfecting
or drinking?

Colon: sentence
punctuation or
biological organ?

Mole: animal,
blemish, unit of
measure, or spy?

Coded (Machine Readable) : Use URI approach of associated codes that can be mapped across coding systems to create data interoperability

Pipes to separate data points (i.e. flower| plant| succulent| grass| tree|)

&

Human &
Machine
Readable



SCHARECore CDEs

PhenX Toolkit

**NIH
Endorsed**



- Age
- Birthplace
- Zip Code
- Race and Ethnicity
- Sex at Birth
- Marital Status
- Education
- Annual Household Income
- Household Size

- English Proficiency
- Disabilities
- Health Insurance
- Employment Status
- Usual Place of Health Care
- Financial Security / Social Needs
- Self-Reported Health
- Health Conditions (and Associated Medications/Treatments)

- **NIMHD Framework***
- **Health Disparity Outcomes***

* Project Level CDEs

SCHARE has developed **Common Data Elements** to ensure consistent data collection across studies, facilitate interoperability, and link data from different sources

NIH CDE Repository:

cde.nlm.nih.gov/home

PhenX Toolkit:

www.nimhd.nih.gov/resources/phenx/

**Available in
Spanish**

SCHARE SDR Collections & Associations

Collections

Each project establishes its COLLECTION:

- Own data (ongoing or final)
- Single or collaborative
- Data Documentation
- Privacy controls
- CDE mapping
- Metadata

Data Submission can be ongoing or at end of project.

- Can provide resource as a data center (ongoing)
- Fulfills Data Management and Sharing Policy (final)

Associations

- ASSOCIATIONS comprised of multiple COLLECTIONs:

- Creates parent collection
- Own data (ongoing or final)
- Single or collaborative
- Data Documentation
- Privacy controls
- CDE mapping
- Metadata

- Adds Collections to the Association



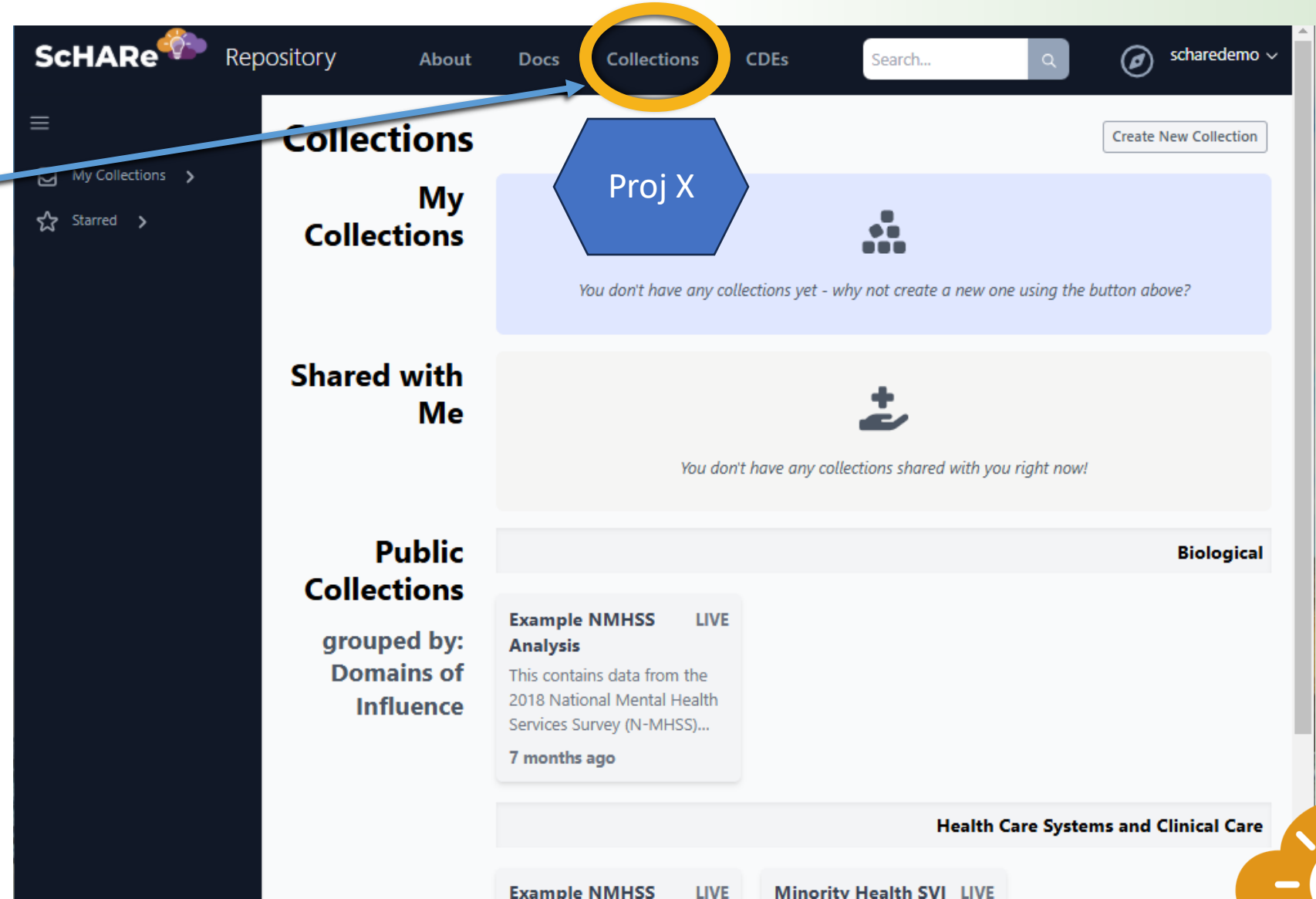
SCHARE Data Repository

Project Data

Collections are a place where you can describe and store your data and any related metadata and federated data.

Can be shared with colleagues

Privacy controls & published when you're ready.



SCHARE Data Repository

PUBLICLY AVAILABLE SPRING 2025

The screenshot displays the SCHARE Repository interface. The top navigation bar includes the SCHARE logo, a search bar, and links for About, Docs, Collections, and CDEs. The user is logged in as 'schare.demo2'. The main content area shows a collection titled 'Test Collection 3/17/2025 / LIVE'. The collection details include an abstract, research areas (Health Disparity Outcomes), research focuses (Higher incidence and/or prevalence of disease, including earlier onset or more aggressive progression of disease), levels of influence (Individual), and domains of influence (Health Care Systems and Clinical Care). A red arrow points from the collection details to a red box highlighting the 'Access Level' and 'CDE Compliance' sections. The 'Access Level' is set to 'Private' (indicated by a lock icon). The 'Analysis Readiness' is 'Ready' (indicated by a green checkmark). The 'CDE Compliance - ScHARe' shows '8 / 17 CDEs assigned'. The 'Tags' section shows 'Topics tagged in this collection' with tags for 'Age' and 'Adolescents'.

**Data Access &
Data
Interoperability**

By default, all collections start out as **Private**.



SCHARE Data Repository

Access Levels and Sharing Data

The access level of a collection defines the maximum permissions that can be used to share it with others. You have control over how your data is shared on the SchARE Data Repository.

Share Collection

Users, groups, and collections with access:

ID	ROLE
Karl Gutwin (karl9152)	ADMIN

Share with:

This collection's access level is currently set to **Private**.
To share this collection with others, you must first set the access level to **Confidential**.

- **Private:** Only the collection's owner can access
- **Confidential:** The collection can be shared with named users
- **Controlled:** The collection can be shared with members of a controlled access group, as well as named users
- **Public:** The collection can be read by any user, including those not logged in; it can also be shared with named users

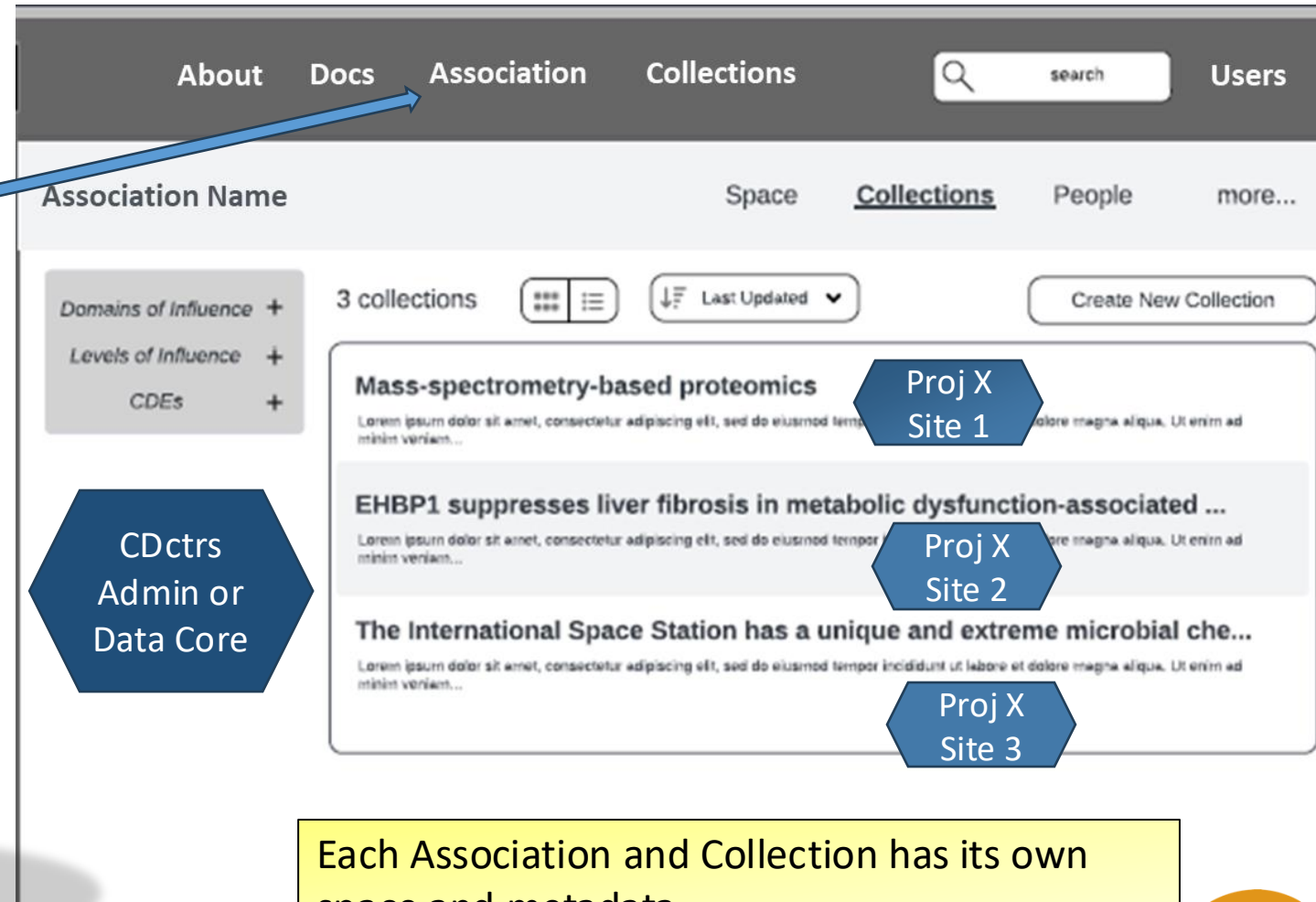
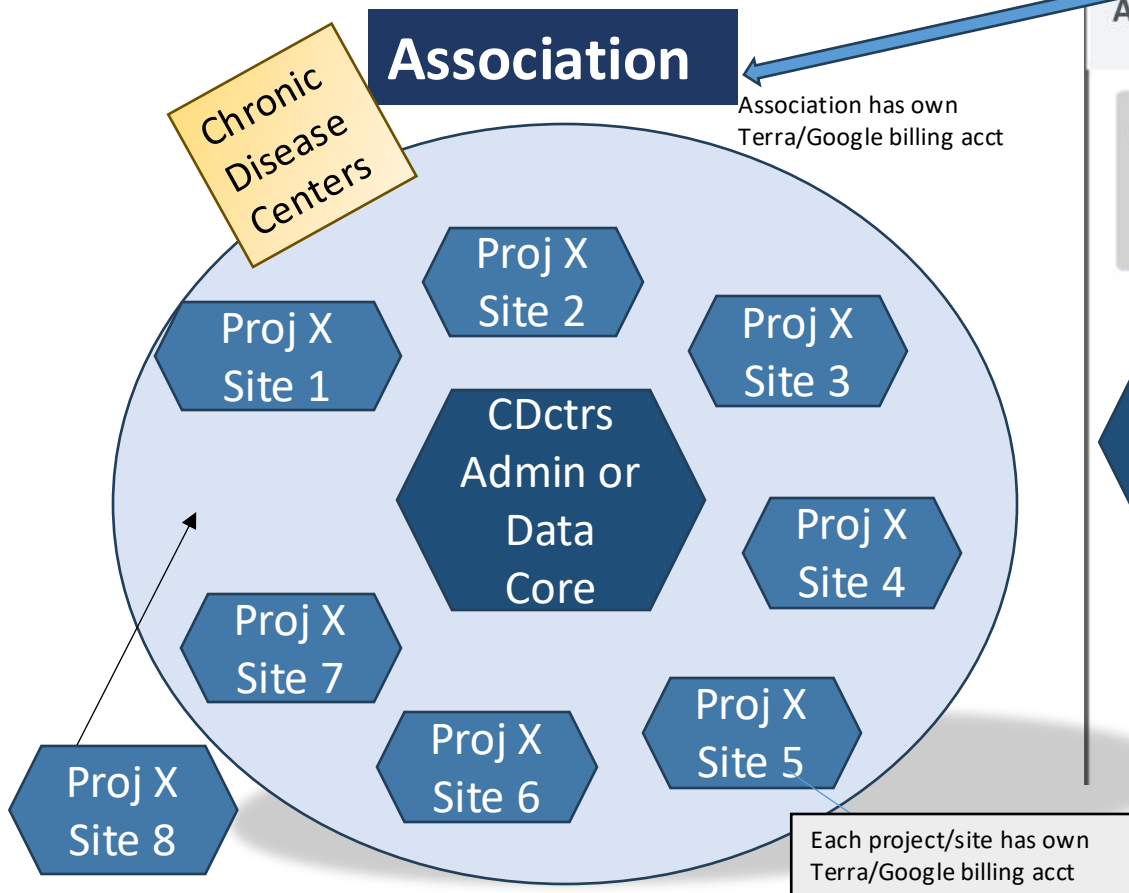
By default, all collections start out as **Private**.



SCHARE Data Repository

Multi-Site Data

Project/Collections are integrated into the Association



Each Association and Collection has its own space and metadata



SCHARE Data Repository

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Data Aggregation Tool

The screenshot displays the SCHARE Data Repository interface. The top navigation bar includes the SCHARE logo, a search bar, and links for About, Docs, Collections, and CDEs. The user profile 'karl9152' is visible in the top right. The left sidebar shows navigation options: Recent, My Collections, and Starred.

The main content area shows a data aggregation workflow for 'karl9152 / SCHARE Example Data 2 / LIVE / aggregated data'. The workflow is currently in the 'Explorer' tab, showing a 3 KB file uploaded 21 hours ago in 'text/prql' format. The source data is 'test_data.xlsx'.

The workflow consists of two steps:

- Join Select:** This step involves joining a table 'mh_svi_county-SCHARE' with a dataview column 'Postal Zip Code' using a matching column 'zip_code' from the join table.
- Select:** This step involves selecting columns from the joined data. The 'Available Columns' list includes: Age Units, Birthplace - US, Birthplace - Outside US, Race/Ethnicity Self-Identification, Gender, Gender - Select Other, and Gender - Specify. The 'Selected Columns' list includes: Participant ID, Age, Postal Zip Code, Sex at Birth, LOCATION, and E_TOTPOP. There are buttons to 'Add All' and 'Remove All'.



SCHARE AI Tools

Coming
soon!

Authenticate

Gemini Assistant

Use **Gemini Assistant** to launch a simple Q&A chat window to get assistance with writing your data analysis code. The chat interface is powered by the Gemini model and is designed to answer questions related to assisting novice coders with writing analysis code. Type your question in the box and click the **Generate** button to call the model and generate an output.

Note: while the data you send through this tool and data sent back are protected under Terra's Enterprise Google Cloud permissions, and are not reused by Google for future model training, we advise not sending any sensitive information (e.g. PII or PHI) through the model. Sticking to general questions or inserting dummy variable names to your questions are good practices to ensure the privacy of your data.

Select Model

Gemini 1.5 Flash



Select Location

us-central1



Question:

Type your coding question here...

Generate



SCHARE AI Tools

User friendly **metadata**, data and model documentation tools

```
import pyschare as sc
labels = sc.data_labels
```

Enter the project title and a brief description or abstract in the provided text boxes. Once done, press the 'Save' button to generate the dataset facts summary.

Project Title:

Project Description:

Save

Fill in the metadata fields with the relevant information about your dataset, such as filename, format, URL, and domain. After completing the fields, click the "Save" button to save and display the metadata table.

Filename:

Format:

URL:

Domain:

Keywords:

Type:

Geography:

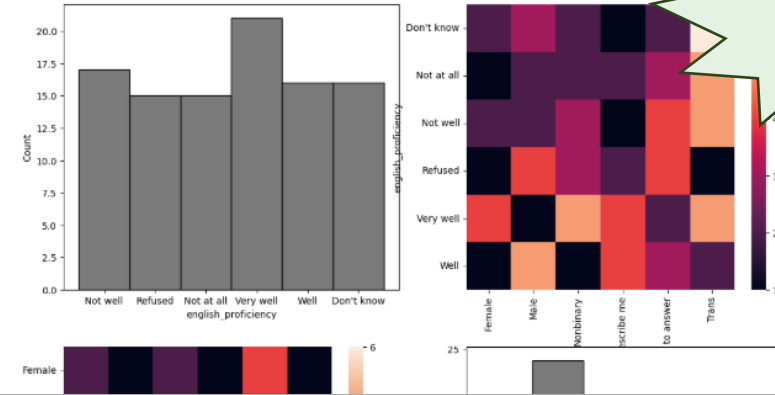
Data Collection Method:

Time Method:

Rows:

Choose two variables from the dropdown menus and click the 'Show Plots' button to create pair plots that visualize the distributions and relationship between the selected variables.

Variable A: Variable B:



Coming soon!

Upload your data dictionary file (CSV format) and select the appropriate columns for variable names and descriptions. The variables table will be generated based on your selections. Click the "Upload Data Dictionary" button to get started.

Upload Data Dictionary (0)

Variable Names: Variable Descriptions:

Upload your dataset (CSV format), and click the 'Show Data' button to view the dataset. Using the dataset's variable names, input the names of ordinal, nominal, continuous, and discrete variables, separated by commas (e.g., Variable_a, Variable_b, Variable_c). After entering the variables, press the 'Show Statistics Table' button to generate and view the statistical summaries.

Upload Data (1)

Show Data

Column1	entity:A_MainTableDatasets_id	Categories	Data	DataDictionary	FileFormat	Homepage	SizeGb
0	0	2021FoodSecurityData	Health Care Access and Quality	gs://fo-secure-d8e25d73-4b50-4dbc-ac10-ec88998...	gs://fo-secure-d8e25d73-4b50-4dbc-ac10-ec88998...	XLSX https://www.meps.ahrq.gov/mepsweb/data_stats/d...	0.806 Exp
1	1	2021FullYearConsolidatedData	Health Care Access and Quality	gs://fo-secure-d8e25d73-4b50-4dbc-ac10-ec88998...	gs://fo-secure-d8e25d73-4b50-4dbc-ac10-ec88998...	XLSX https://www.meps.ahrq.gov/mepsweb/data_stats/d...	0.118 Exp

SCHARE PySCHARE Python Package

Coming
soon!

PySCHARE package to search datasets and variables, subset, save, and visualize datasets

DataVisual()

Use the dropdown menus to select a dataset and configure your plot parameters.

- Bar, count, box, boxen, strip, swarm, and violin plots typically require a categorical variable on the X-axis (or hue) and a numeric variable on the Y-axis; see the [categorical tutorial](#) for details.
- Scatter and line plots call for numeric variables on both axes (e.g., time vs. measurement); refer to the [relational tutorial](#).
- Histograms typically need a single numeric variable on the X-axis and are described in the [distributions tutorial](#).

Use "hue" to differentiate categories by color, "style" to vary markers or lines, and "size" to scale markers based on another variable. The "col" and "row" options create subplots (facets) for comparison across categories, while the "multiple" parameter (e.g., "dodge," "stack," "fill") manages overlapping data displays. Once the plot type and settings are selected, click "Show Plot" to visualize the results.

Select Dataset	<div>None 2021FoodSecurityData 2021FullYearConsolidatedData 2021JobsFileData 2021MedicalConditionsData 2021PersonRoundPlanPublicUseData 2022FoodSecurityData 2022FullCharacteristicsData 2022FullYearConsolidatedData</div>	Select X	
		Select Y	
		Select Hue	
		Select Style	
Select Plot	<div>None Bar Plot Box Plot Boxen Plot Count Plot Histogram Line Plot Point Plot Scatter Plot Strip Plot</div>	Select Size	
		Select Column	
		Select Row	
		Select Layer	Layer
<div>Show Plot</div>			

DataSubset()

Use the **Select Dataset** dropdown to choose a dataset. The available variables will be dynamically populated when you select options in the **Select Variables** dropdown. After selecting the desired variables from the **Select Variables** dropdown, you may visualize the data by clicking the **Show Data** button. This will display the first few rows of the specific columns selected in the output area below.

To save the displayed data, click the **Save Data** button. This action will store the selected data in your bucket and confirm the successful operation in the output area. Please make sure you have made selections in both the dataset and variables dropdowns before attempting to save.

Select Dataset	Select Variables
<div>PLACES_500Cities_2021 PLACES_500Cities_2022 PLACES_500Cities_2023 PLACES_500Cities_2024 YRBSS_YouthRiskBehavior_2015 YRBSS_YouthRiskBehavior_2017 YRBSS_YouthRiskBehavior_2019 YRBSS_YouthRiskBehavior_2021 YRBSS_YouthRiskBehavior_2023</div>	<div>Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10</div>
<div>Show Data</div>	
<div>Save Data</div>	

Calculate()

Use the **Select Dataset** dropdown to choose a dataset. The available variables will be dynamically populated when you select options in the **Select Variables** dropdown. After selecting the desired variables from the **Select Variables** dropdown, click the **Describe Data** button. This will display the summary statistics of the specific columns selected in the output area below.

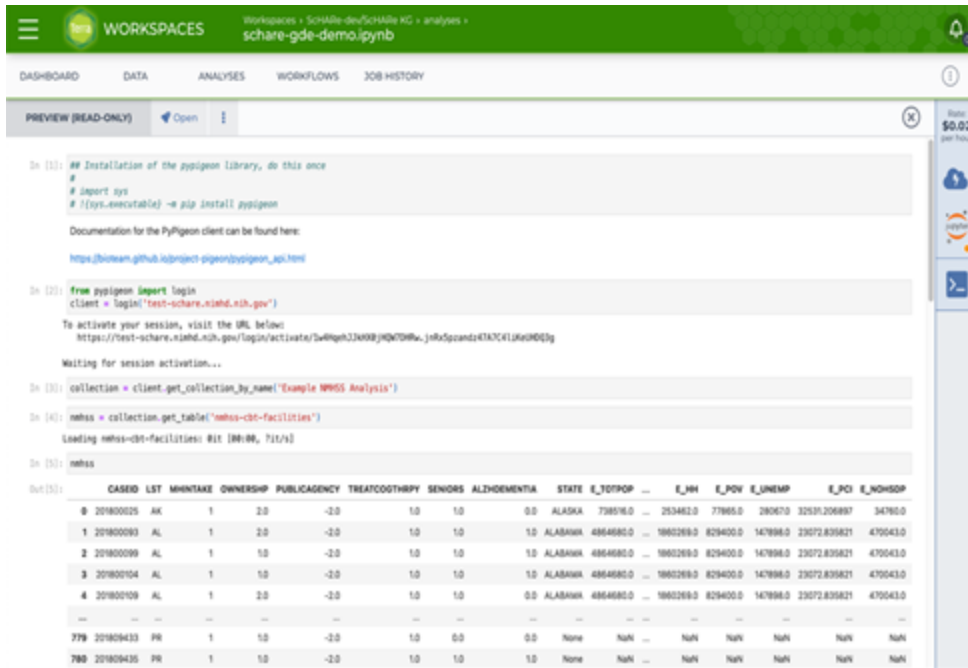
Select Dataset	Select Variables
<div>PLACES_500Cities_2021 PLACES_500Cities_2022 PLACES_500Cities_2023 PLACES_500Cities_2024 YRBSS_YouthRiskBehavior_2015 YRBSS_YouthRiskBehavior_2017 YRBSS_YouthRiskBehavior_2019 YRBSS_YouthRiskBehavior_2021 YRBSS_YouthRiskBehavior_2023</div>	<div>Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10</div>
<div>Describe Data</div>	



SCHARE Data Repository

PUBLICLY AVAILABLE SPRING 2025

Connect to a Terra Jupyter notebook



```
In [1]: # Installation of the pyypipe library, do this once
#
# Import sys
# !([sys.executable] -> pip install pyypipe)

Documentation for the PyPipes client can be found here:
https://github.com/nyu-bio/pyypipe/blob/master/README.md

In [2]: from pyypipe import login
client = login("test-schare.nidh.nih.gov")

To activate your session, visit the URL below:
https://test-schare.nidh.nih.gov/login/activate?token=334000JH070Hw...jnh5p2and4TATC1K0uH0D3g

Waiting for session activation...

In [3]: collection = client.get_collection_by_name("Example NHDS Analysis")

In [4]: nhds = collection.get_table("nhds-cbt-facilities")

Loading nhds-cbt-facilities: #it (88.88, 711/s)

In [5]: nhds

Out[5]:
```

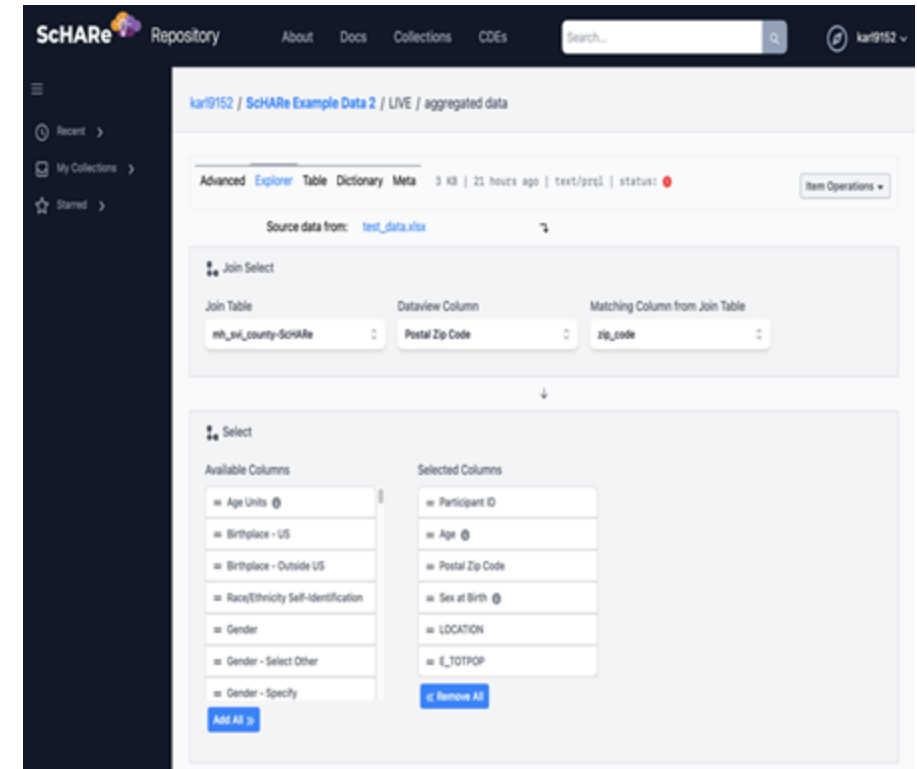
CASEID	LIST	MINITAKE	OWNERSHIP	PUBLICAGENCY	TREATCOSTHSPY	SENIORS	ALZHEIMER	STATE	E_TOTPOP	E_HH	E_POV	E_UNEMP	E_POI	E_NHSDSP	
0	201800025	AK	1	2.0	-2.0	1.0	1.0	0.0	ALASKA	738516.0	253462.0	77965.0	28067.0	32531.206897	34780.0
1	201800093	AL	1	2.0	-2.0	1.0	1.0	1.0	ALABAMA	4864680.0	1860269.0	829400.0	147898.0	23072.830821	470043.0
2	201800099	AL	1	1.0	-2.0	1.0	1.0	1.0	ALABAMA	4864680.0	1860269.0	829400.0	147898.0	23072.830821	470043.0
3	201800104	AL	1	1.0	-2.0	1.0	1.0	1.0	ALABAMA	4864680.0	1860269.0	829400.0	147898.0	23072.830821	470043.0
4	201800109	AL	1	2.0	-2.0	1.0	1.0	0.0	ALABAMA	4864680.0	1860269.0	829400.0	147898.0	23072.830821	470043.0
...
779	201809433	PR	1	1.0	-2.0	1.0	0.0	0.0	None	NaN	NaN	NaN	NaN	NaN	NaN
780	201809435	PR	1	1.0	-2.0	1.0	1.0	1.0	None	NaN	NaN	NaN	NaN	NaN	NaN

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Repository



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SchARE Data Repository?

