Meeting Highlights

2022 July ESIP Meeting

July 19-22, 2022

Supported by:

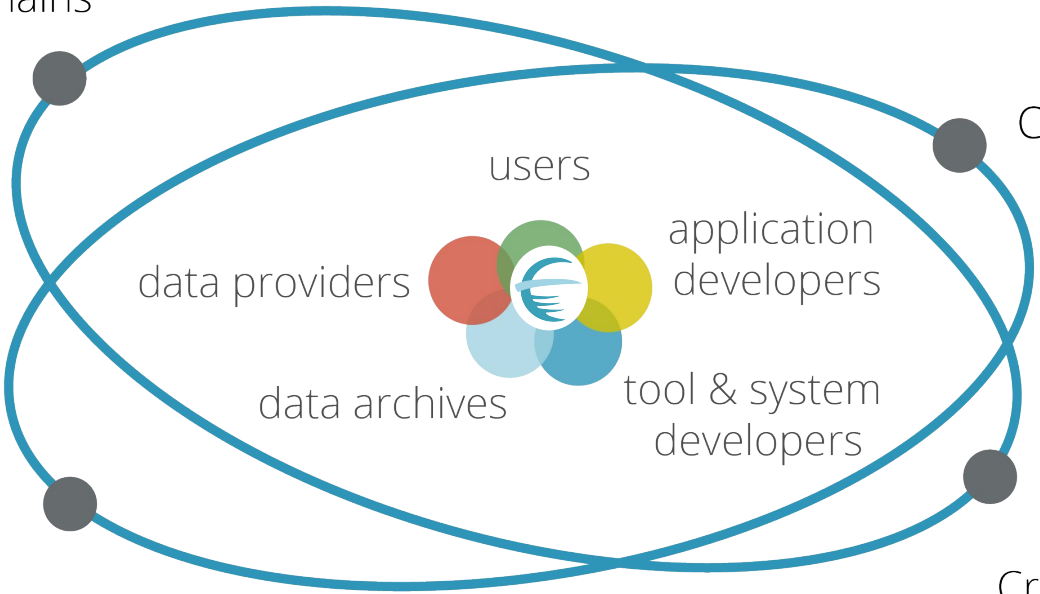
ESIP

Supported by:

NASA NOAA USGS

Multiple Science Domains

Corporate



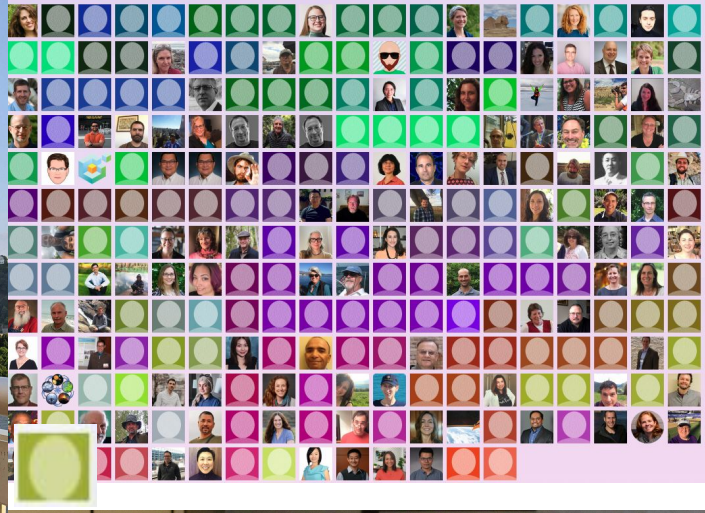
Academia

Cross-Agency

ESIP Meeting
July 19-22, 2022

Data for All People

ESIP Meeting
July 19-22, 2022
Thanks to our sponsors!
aws
esri
Element 84
ESIP
#ESIP2022 @ESIPfed | esipfed.org/meetings



#ESIP2022
virtual & in-person

MEETING BY THE NUMBERS

3
Plenary Sessions

36
Research Showcase Presentations

35
Breakout Sessions

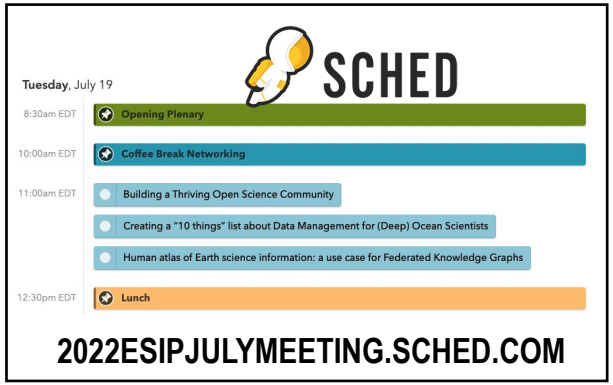
137
First Time Attendees

332
Attendees

100+
Organizers & Speakers

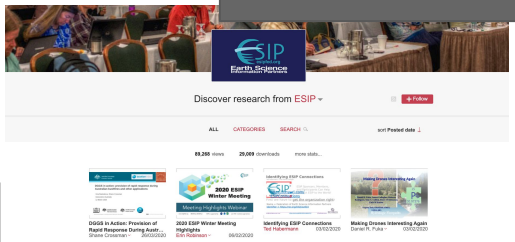
MEETING TECHNOLOGY

zoom

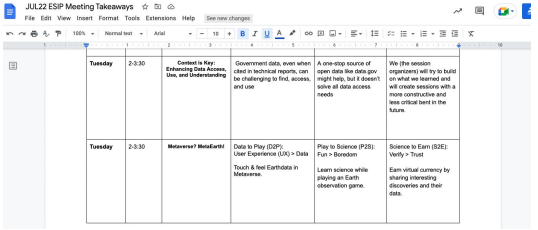


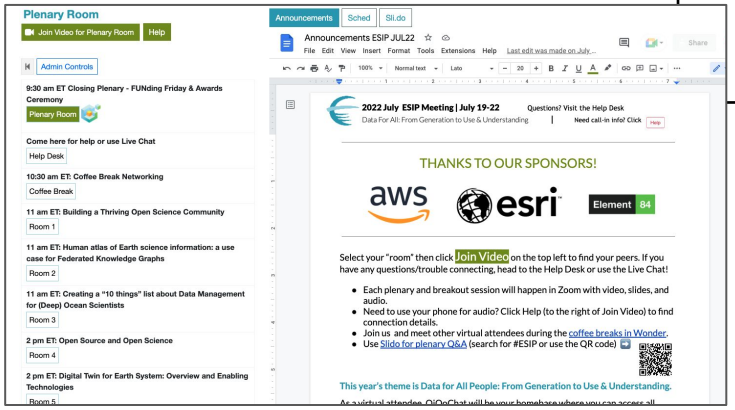
figshare

2022 ESIP July
396 Views
60 Downloads

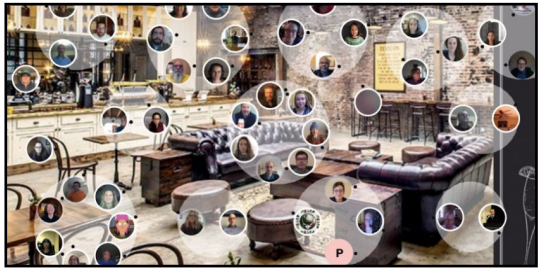


G Suite





@Esipfed
#EarthScienceData
#ESIP2022



wonder

https://2022julyesipmeeting.qiqochat.com/

Find & Access Meeting Content

SCHED

Building a Thriving Open Science Community

Sign up or log in to save this to your schedule, view media, leave feedback and see who's attending!

https://sched.co/12e: Tweet Share

Feedback form is now closed.

Zoom Recording
Notes Doc

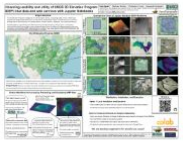
Open science is rapidly gaining momentum in part due to its potential to amplify discoveries, ramp up
challenges. But what are the key characteristics of successful open science initiatives and projects? Do
experienced as open science communities develop? And how can successes be scaled to achieve a tr
community that thrives on trust and transparency, ensuring readily accessible, scientific data for all pe
from a broad community including academia, non-profits, and public and private sectors will share the
data accessibility, software, tools and results, reproducibility of the scientific workflow, and inclusivity s
Opportunities for leveraging community resources to develop capabilities and improve the creation c
to inform ways in which beginners and experts can contribute to open science projects and results. Ch
described in terms of the critical factors that enable or prevent success. Examples of the benefits of pa
in terms of professional development, community involvement, and the results produced.

figshare

Keywords for All People: How Keyword Governance and …
Poster posted on 26.07.2022
Tyler Stevens

Using Metadata Standards to Simplify Discovery and …
Poster posted on 26.07.2022
Hannah Collier

Detecting Specimen Citations in Scientific Literature
Poster posted on 26.07.2022
Sara Lafia

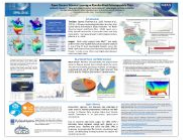


Enhancing usability and utility of USGS 3D Elevation Program …
Poster posted on 21.07.2022
Cole Speed

Context is Key Breakout Session Notes
Conference contribution
posted on 21.07.2022
Alejandro Paz

Context is Key: Enhancing Data Access, Use, and …
Presentation posted on
21.07.2022
Alejandro Paz

A High-throughput Cloud-based Open-Source Platform for …
Poster posted on 21.07.2022
Tao Wen

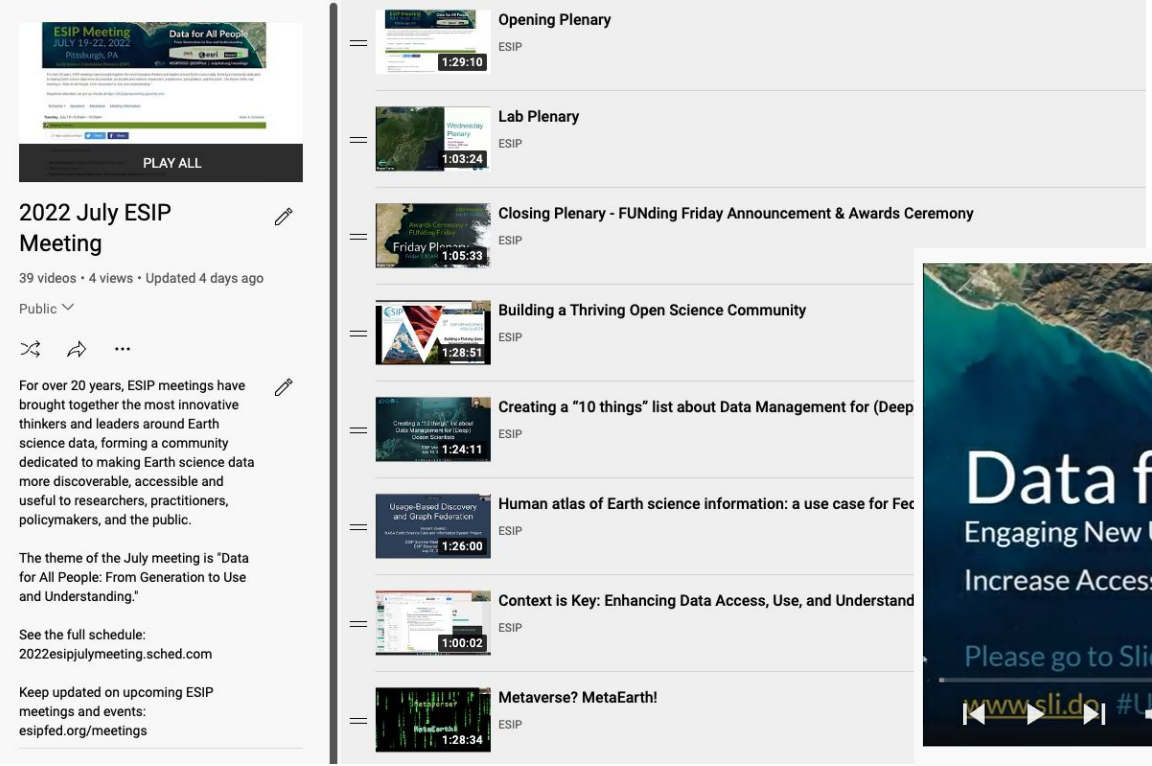


Daymet: Open-Source Science Leverages Standardized …
Poster posted on 20.07.2022
Michele Thornton

By Session:
https://2022esipjulymeeting.sched.com/

Browse Presentations:
https://esip.figshare.com/ESIP_JULY_2022

Find & Access Recordings



YouTube

Data for All: Engaging New User Communities to Increase Access and Environmental Justice

4 0 DISLIKE SHARE DOWNLOAD CLIP SAVE ...

Browse Recordings on YouTube:

https://www.esipfed.org/july22-videos

Plenary Highlights

2022 July ESIP Meeting

July 19-22, 2022

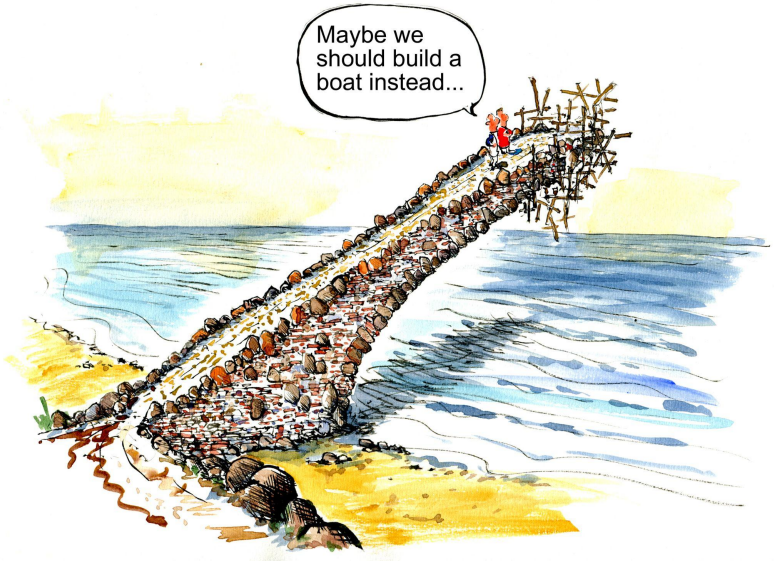
Supported by:

Opening Plenary: Data for All People

Joyful welcome to our first in-person meeting since January 2020, with a focus on the connections between data and people

Takeaways:

- **How can we improve how we help others understand the data?**
  - **Different people think about data differently**
- **Building relationships is key!**
  - **Find centers of trust and establish governance that utilizes them**
- **Conversations need to start *from* the community rather than pushing our ideas into them**



Tags:
Data for all, open science, community, resilience

Want to learn more?
Contact: Susan Shingledecker
Join: https://www.esipfed.org/subscribe

Wednesday Morning Plenary

Renee Sieber, McGill University | Margaret Hu, William & Mary Law School

Opening data is a political act. Engineering data is a political act

Acknowledge that we're in a political/civic dialog with our data users

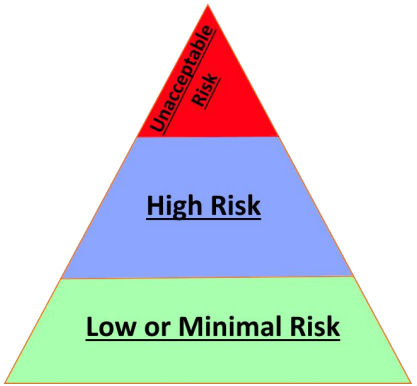
Members of public can marshal the resources on their own (with gov allies, technical students)

Citizens can influence politics AND further science. Citizens can be allies with government.

Increasing awareness, not "empowered" literacy may be self-defeating

Confront epistemological problems. Both sides are scientists & domain experts.

Wrap your data to increase influence



European Union is using a risk-based approach to regulating AI.

Learn more about the ESIP Lab: esipfed.org/lab

Want to learn more?
Contact: Annie Burgess (lab@esipfed.org)

Friday Morning - Closing Plenary

Colette Brown, UC-Berkeley | Ryan Abernathey, LDEO

Colette is the 2022 Raskin Scholar. She presented on her fieldwork and ML research in Alaska.

- Contagious enthusiasm and clear science communication
- Looking at shrub species changes over time in response to burns.
- Using ML for predictions; validating with fieldwork - funded by the scholarship.
- Considering Indigenous communities requires permission and transparency in agreements.

Ryan is the 2021 Falkenberg Awaree and tackled technical challenges in open science.

- Great use of emojis.
- Holes + challenges: no platform for data-intensive science, although guiding principles like FAIR exist; unequal cloud computing access & SAAS software.
- What we need: Full, cloud-native, end-to-end workflows.
- The process is iterative and community-based.

Breakout Session Highlights

2022 July ESIP Meeting

July 19-22, 2022

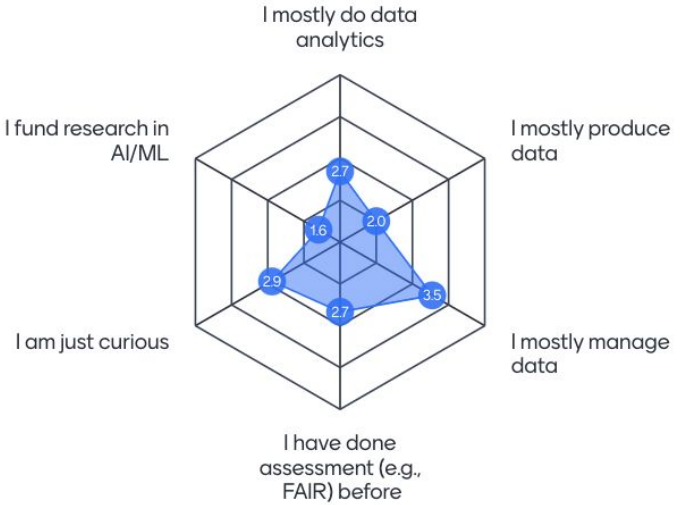
Supported by:

AI-Ready Climate Data – ESIP Data-A-Thon

Community members came together to assess the AI-readiness of a selection of public climate dataset to form a pilot collection of AI-ready datasets for the community.

Takeaways:

- Training materials are needed to better onboard the community for AI-readiness assessment
- AI-readiness can be use-case driven; need to balance specificity and general data management improvements
- Position AI-readiness assessment as a process to guide future data/services development and data improvement



Tags:
AI-readiness, data quality, usability, accessibility, documentation

Want to learn more?
Contact: Douglas Rao, Stacie Robinson, Ge Peng, Tamar Norkin
Mailing list: esip-datareadiness@lists.esipfed.org
Next Telecon: 20 September, 2022 @1 pm EDT/UTC-4

Session Title: Approaches and Practices Promoting Trustworthy FAIR Data and Repositories

Objective: Explore the current practices, technical implementations, and lessons learned for improving the FAIRness and establishing trustworthiness of Earth Science data and repository

*** **6 Invited Presentations With a Packed Room Plus 35 Online Attendees** ***

Takeaways:

- **Discovering:** There are a variety of approaches used for FAIR assessments;
- **Helping each other:** Sharing lessons learned from the evaluation of data can offer others the insight into improving dataset quality;
- **Continuing inquiry:** How can FAIRness assessments that are being conducted, be used to help improve organizational data management practices and capability?

Path Forward: Developing a community guide promoting trustworthy FAIR Earth Science data and repositories

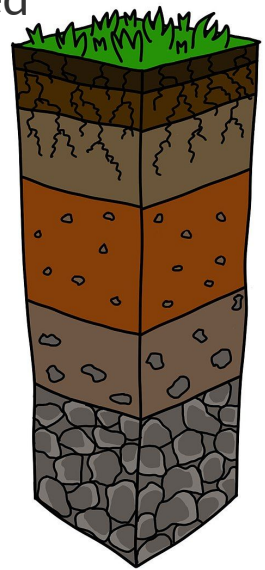
Tags: Data Stewardship, Metadata, Quality Information, Research Data Management, FAIR

Want to learn more?

IQC wiki: wiki.esipfed.org/Information_Quality
Join IQC: esip-infoquality@lists.esipfed.org
Session Notes: tinyurl.com/ESIP-SM22-IQC

Laying the bridge between soil data, knowledge, and semantics

Draw on experience in the ESIP community to envision what data-connected semantics and governance models might look like in soils.



Takeaways:

- **Tensions in creating semantics:**
  - **need specific use-case but general applicability**
  - **simple language but specific definition**
  - **Uncertainty in**
- **Cluster activities 2022-2023 focused on soil carbon data collections**
  - **Continue with community presentations**
  - **Review/synthesis manuscript on data models with alignment to semantic resources**

Tags:

Soil, data model, governance, semantics

Want to learn more?

Contact: Kathe Todd-Brown

Join: Soil Ontology and Informatics Cluster

Collaboration and Communication for Technology Infusion

We practiced talking about our work in a way that communicates impact, avoids jargon, and invites listeners to respond for greater understanding.

Takeaways:

- **Speaker: Focus on the WHY, not the HOW.**
- **Speaker: Understand your audience: allow them to respond and ask questions.**
- **Listener: you have a responsibility to ask clarifying or guiding questions to help you understand!**

Notes from our "what not to do!" breakout.

Tags:
communication, seed-funding, infusion

Want to learn more?
Contact: Annie Burgess, Leslie Hsu, Sara Lubkin

Join Our Community of Contributors and Users of the New Data Management Training Clearinghouse

This session was a "soft" launch of the new DMTC; our goals were to: 1) Introduce the latest developments in the web interface to the DMTC; 2) Obtain actionable feedback from the ESIP community on the new enhancements.

Takeaways:

- **Explanations for type of info desired for descriptions is VERY important (high priority!)**
- **Use fewer, choice words and add space to pages**
- **More user feedback is warranted – crowdsourcing, here we come!**

Tags:
data skillbuilding, educational portal, learning resource registry

Want to learn more? Contact:
Nancy Hoebelheinrich (nhoebel@kmotifs.com)
or
Karl Benedict (kbene@unm.edu)

Human atlas of Earth science information: a use case for Federated Knowledge Graphs

The goal of the session was to promote the need for federate knowledges graphs with tangible use cases and begin a dialog on how to achieve our goal.

Takeaways:

- **Usage-based Discovery (UBD) could benefit from a usability study that includes input from outside the cluster.**
- **The perspective of other agencies/industry's disposition to graph and federation would be valuable. Is federation a thing?**
- **The audience was very engaged in our discussion regarding methodologies of collection publication.**

Tags:
Graph, Federation, UBD, CMR

Want to learn more?
Contact: Doug Newman / NASA ESDIS
Join: esip-discovery@lists.esipfed.org

Enabling scalable, global open science with the Multi-mission Algorithm and Analysis Platform and other spatial data infrastructures

MAAP personel gave an overview of spatial data infrastructures and then gave more focused talks on MAAP itself, in terms of collaboration, architecture, data stewardship and data processing

Takeaways:

- **MAAP is the NASA flagship application for Open, Internationally Collaborative, Team-Oriented, Data and Compute Intensive Science.**
- **We had the largest breakout attendance in the time slot, so clearly there is excitement about the MAAP project in the ESIP community.**
- **Because we had the experts giving talks covering the entire overview of MAAP we were able to fully address the great diversity of questions that were asked, and effectively show the truly unified MAAP development process.**

Tags:

MAAP, open science, collaboration, NASA, ESA, algorithm development

Want to learn more?

Contact: Doug Newman / NASA ESDIS
douglas.j.newman@nasa.gov

Context is Key: Enhancing Data Access, Use, and Understanding

Participants examined epa.gov/mats and tried to find the data that was used to craft the original rule.

Takeaways:

- **Government data, even when cited in technical reports, can be challenging to find, access, and use**
- **We had mixed opinions about the quality of epa.gov/mats**
- **A one-stop source of open data like data.gov might help, but it doesn't solve all data access needs**
- **We (the session organizers) will build on what we learned and create sessions with a more constructive bent in the future.**

Tags:

EPA, MATS, Federal Websites, Environmental Data, Data Discoverability Environmental Regulations, EDGI

Want to learn more? - Contact:

Alejandro Paz - apaz@mit.edu

Gretchen Gehrke - gretchen.gehrke@envirodatagov.org

Stay in touch: envirodatagov.org/newsletter-signup

How to Use Schema.org on your Dataset Web Pages

bit.ly/soso-tutorial

Takeaways:

- **How to build Schema.org record**
- **Learn JSON-LD tips and techniques**
- **Introduce the latest updates to science-on-schema.org**
  - Dataset Funding (Awards)
  - Variables
  - Geologic Time

- **Build a Dataset** (it's not complicated)
  - #1. JSON-LD Context
  - #2. Basic Fields
  - #3. Keywords
  - #4. License
  - #5. Identifiers
    - using `sameAs`
  - #6. Publisher
  - #7. Authors / Contributors
  - #8. Temporal Coverage
  - #9. Spatial Coverage
  - #10. Data Files
- **Improving the Dataset**
  - #11. Keywords
  - #12. Identifiers
  - #13. Authors / Contributors Improved
  - #14. Provider
  - #15. Funding & Awards
  - #16. Variables
  - #17. Metadata Records
  - #18. Checksums
- **Advanced Techniques**
  - Geologic Time
  - Provenance
  - Validating with SHACL

Tags: schema-org, JSON-LD, metadata, tutorial

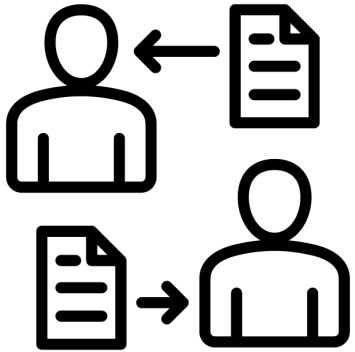
Want to learn more?
Contact: Adam Shepherd
Telecon: August 25th, 2:30pmET

Cite your samples! Drafting guidelines for sample and specimen citation in the earth sciences

This session included updates on activities within the sample community and focused work on our “Sample Sharing Guidelines” — https://bit.ly/3sxNFHv

Takeaways:

- **Positive support for the progress made on the Sample Sharing Guidelines (including feedback from external networking)**
- **Recommends for the guidelines include adding details on:**
  1. **how to cite large collections of samples**
  2. **how to provide context to citation**
  3. **possible topics for supplemental documents**
- **Next steps will be focused writing sessions in order to complete a full draft of the guidelines later this year**



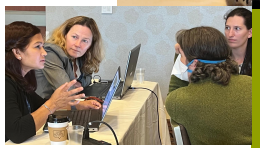
Tags:
Physical Samples, Repositories, Curators, Citations, Authors

Want to learn more?
Contact: Val Stanley or Sarah Ramdeen
Join our mailing list: https://bit.ly/3iLKqWN

ESIP Cross–Domain Collaboratory:
Data Drivers During Wildfire Events

Pre-Fire **During-Fire** Post-Fire

Our goal is to **create a framework** to **enable communities and responders** to **connect to trusted data** about their areas in order **to assess risk and accelerate actions** when hazards develop, starting with wildfires.



Takeaways:

- **Community users** need **actionable** information resulting from the transformation of data to knowledge
- **Firefighters** need to know **where to go** to safely get to the fire
- **Climate change** is changing **fire behavior**, **outpacing** our **models** & **mega-droughts** are **affecting actions** on the ground

Tags:
#TrustedData, #Collaboration, #DecisionMaking, #wildfires, #disasterlifecycle, #ConnectingCommunities, #Responders, #FireSense, #ActionableData, #WildfireSmoke, #WildfireSmokeHealthImpacts

Want to learn more?
Contact:
Karen Moe karen.moe@earthlink.net
Dave Jones dave@stormcenter.com
Join: 1st Thursday of EVERY month 4pm ET

Community Air Quality Toolkit

Globally, bad air quality kills millions every year

Also damages crops and ecosystems

People need actionable information and guidance

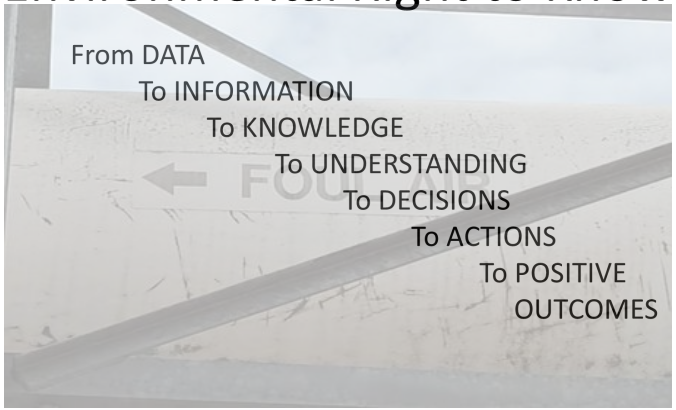
Community air quality toolkit concept

Friendly apps for user devices

Need REAL data: real-time, real-place, real-stuff

Fuse data from satellites, ground sensors, community scientists

Environmental Right to Know



Tags:

Air quality, AQ, AQI, air pollution, smoke

Want to learn more?

Contact: Steve Young, frazmo@gmail.com

Join: 4th Thursday of every month at 4 pm ET

Giving Credit Where Credit is Due

To understand existing challenges with assigning and recognizing credit for research artifacts and establish what the ESIP Research Artifact Citation Cluster can do to improve credit for research artifacts.

Takeaways:

- **Project teams need guidance about how and what roles to assign credit, and this guidance needs to be developed**
- **Research community needs tools for visualizing or gaining insight into the PID graph**
- **ESIP Research Artifact Citation Cluster should focus on improving social guidelines (as opposed to developing technical solutions)**

Tags:

Credit, Citation, PID graph

Want to learn more?

Contact: Madison Langseth (mlangseth@usgs.gov)

Join: https://lists.esipfed.org/mailman/listinfo/esip-citationguidelines

Beyond Alexa and Siri: NLP/AI for Science

We demonstrated the use of Natural Language Processing (NLP) Software to deliver information and data to users without having to navigate a website.

Takeaways:

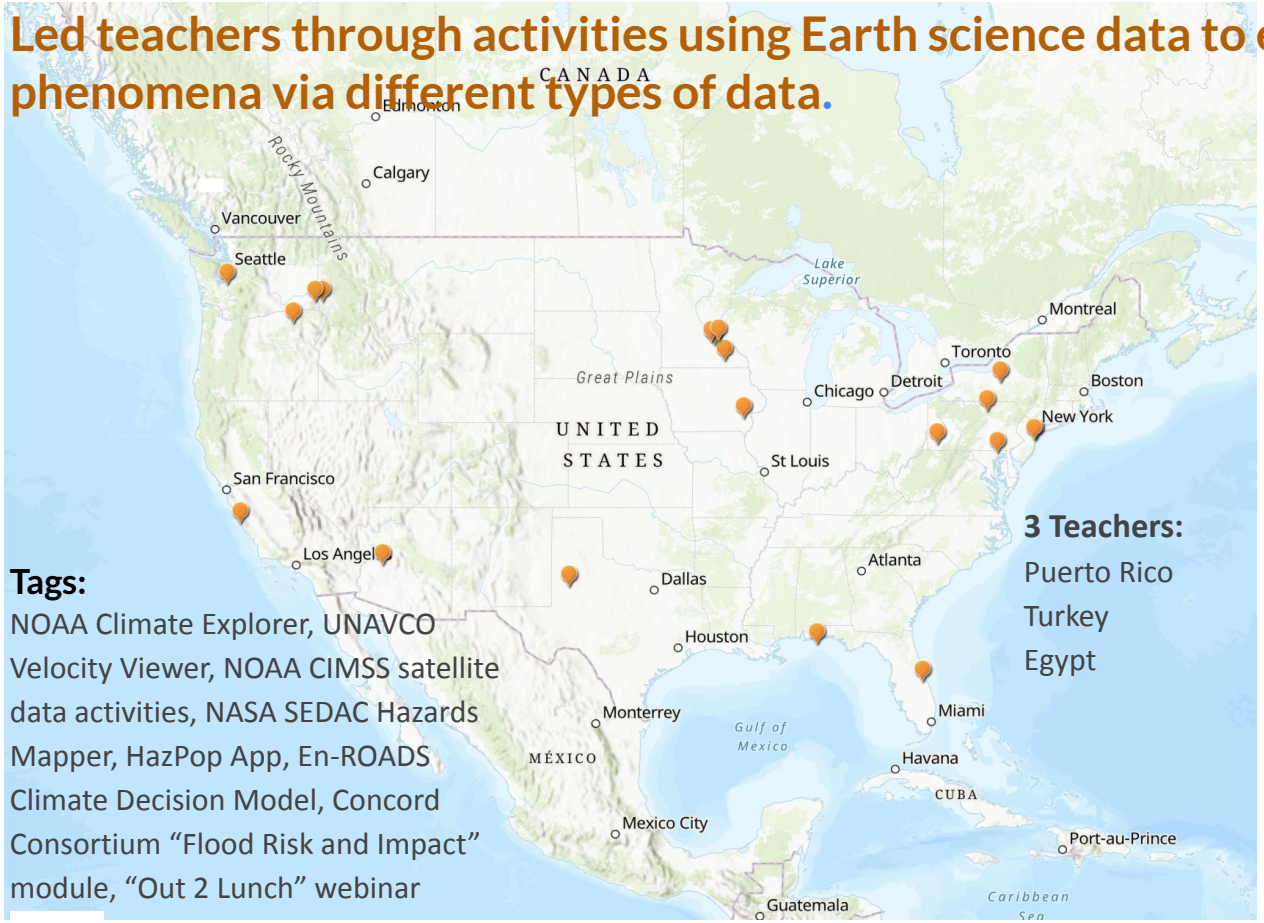
- NLP can be used to quickly deliver data and information to users without searching through a website structure
- In order to do this, we have partnered with the ESIP Community Fellows to update each collaboration wiki
- Using this updated information, we will release an online mock-up of the ESIP site with NLP enabled for you to test for yourself.

Tags:
#Stewardship,#NLP, #MachineLearning, #ESIPFellows

Want to learn more?
Contact: Shayna Solis, Steve Diggs
Join: … The Data Stewardship Committee

Earth & Environmental Science Data Use and Understanding in Grades K-14

Led teachers through activities using Earth science data to explore phenomena via different types of data.



3 Teachers:
Puerto Rico
Turkey
Egypt

Tags:
NOAA Climate Explorer, UNAVCO Velocity Viewer, NOAA CIMSS satellite data activities, NASA SEDAC Hazards Mapper, HazPop App, En-ROADS Climate Decision Model, Concord Consortium "Flood Risk and Impact" module, "Out 2 Lunch" webinar archive

Takeaways:

- **23 participants; 4 in-person; 19 online**
- **Hybrid workshop aided by a meeting OWL**
- **Meet the teachers!**
- **2 Teachers received FUNding Friday awards!**

Want to learn more?
Contact: Carla_McAuliffe@terc.edu

Join: Subscribe to the Education Committtee mailing list

Attend the next Ed Comm Meeting
Thursday, August 18, 2 PM ET

Building a Thriving Open Science Community

Convey importance of embracing open science (OS) plus potential *growing pains* (panelist lightning talks); implement interactive mindmapping – harness expertize of ESIP community; id emerging trends

Takeaways:

talks (community, international, federal, research, commercial) diverse stakeholder groups *needed* in OS

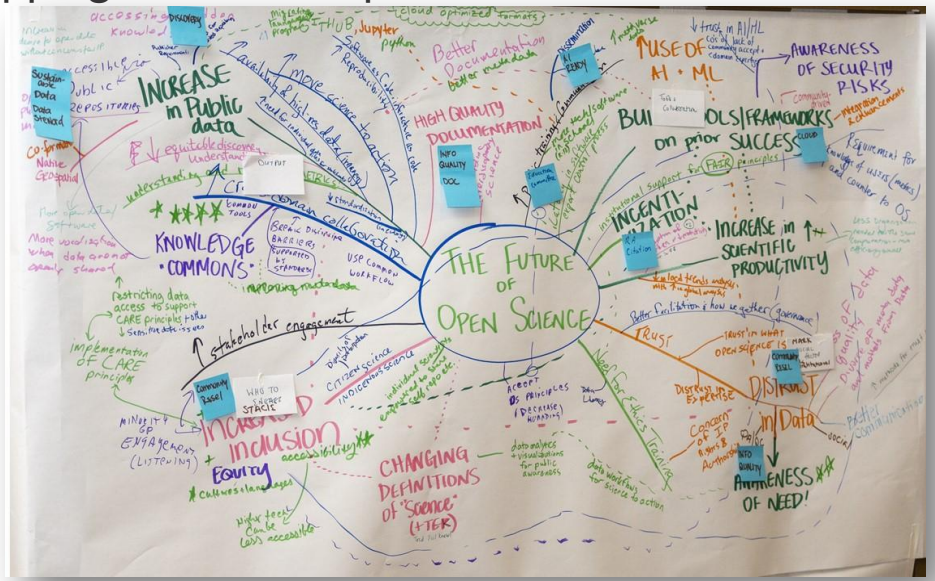
- **Who to engage**
- **Outputs**
- **Tools and collaboration**
- **Social factors**

Discussion:

- **Building on momentum**
- **Cluster ownership/engagement**

Tags:

Open science, public data, inclusive, accessible, stakeholders, hidden knowledge, LoE, trust, diverse, CARE, FAIR, tools/frameworks, knowledge commons



Want to learn more?

Contact: Jenny Hewson (jennifer.h.hewson@nasa.gov), Cynthia Hall (cynthia.r.hall@nasa.gov)

Join: esip-openscience@lists.esipfed.org; Slack: #open-science

Next telecon: **Tues, 23rd August (12pm east)**

Data's Disruptive Innovation

Community Fellow Highlights

2022 July ESIP Meeting

July 19-22, 2022

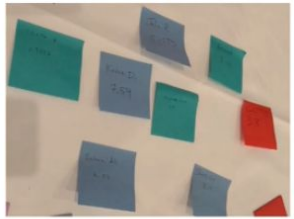
Supported by:

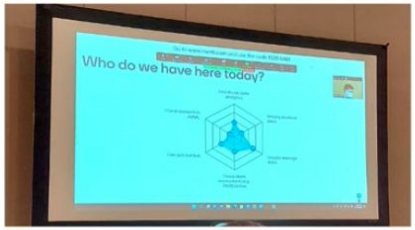
Enabling AI Application for Climate

Developing a Collection of AI-ready Open Climate Data

Takeaways:

- **What?** AI-readiness is domain-dependent.
- **Why?** Same Data - Different domain experts - Different needs - Different assessment ratings! ***Curate [data] with care!***
- **Next step?** A primer to explain the concepts and possible strategies for datasets and their evaluation.





Tags:
#AI-readiness, #ClimateData, #DataEvaluation

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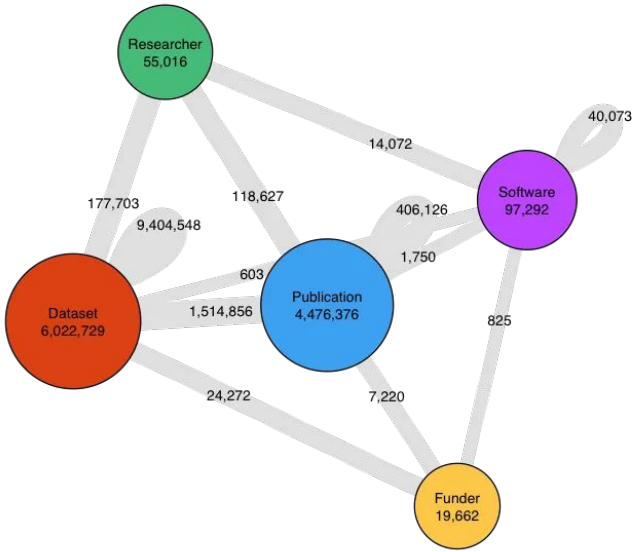
#EarthScienceData

Sahara Ali

A use case for Federated Knowledge Graphs: Progress on *Usage-Based Discovery*

Representatives across clusters shared progress on scientometric research linking datasets to publications

- Links between scholarly resources form a **knowledge graph (KG)**. This session called for alignment of ESIP KG activities.
- Crossref, Scopus, and DataCite offer APIs for retrieval. PID graphs may provide more opportunities for linkage.
- Data creation and citation patterns are emerging (e.g., data center **co-citation**; semantically rich **recommendations**).



Tags:
Knowledge Graph, dataset recommendation

Want to learn more?
Contact: Sara Lafia (slafia@umich.edu)
Join: **#knowledge-graph** channel on ESIP Slack

ESIP Summer Highlights

5th ESIP Meeting, 1st in person!

Takeaways:

- **You can’t beat in-person networking**
- **Favorite Session: Cloud Pathfinders**
- **Tools I’m planning to try: Pangeo, qHub**

Want to learn more?
Contact: James (Jake) Gearon, jhgearon@iu.edu
Join the Envirosensing cluster!

Tags:
Cloud Pathfinders, Networking, Pangeo, qHub

Closing Remarks

2022 July ESIP Meeting
July 19-22, 2022

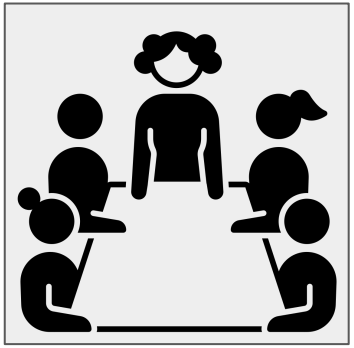
Supported by:

Consider serving in a leadership position!

Why serve?

- Contribute to decision making within ESIP
- Share your skills/talents with the community (incl. mentorship)
- Develop soft skills (esp. early/mid career)

Volunteer or nominate someone today!



Elected members serve 1 year with the opportunity to run for a 2nd year

Positions:

- President
- Vice President
- Governance Committee Chair
- Finance Cmte. Chair
- Partnership Cmte. Chair
- Data Stewardship Cmte. Chair
- Education Cmte. Chair
- Information Technology & Interoperability Cmte. Chair
- Semantic Technologies Cmte. Chair
- At Large Board Member (2 positions)

Want to provide support but don't want to lead?
Consider serving on the Nominations Committee!
Looking for **Type 2** and **3**, and **Early Career** representatives!

Tags: Leadership, Service

Want to learn more?
Positions descriptions: https://bit.ly/3SugxeT
Contact: sarah.ramdeen@gmail.com

ESIP ENGAGEMENT OPPORTUNITIES

Discover

Find people and tools to make your data findable, accessible, interoperable, and reusable.

Collaborate

Join-in or create a new collaboration area around your Earth science data challenges.

Innovate

Utilize small-grant funding to build or expand Earth data technologies.

Network

Build connections across federal agencies, the private sector, and academia.

MAKING DATA MATTER

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Thank you for attending!

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