



2020 ESIP Winter Meeting

Meeting Highlights Webinar



Theme: *Putting Data to Work: Building Public-Private Partnerships to Increase Resilience & Enhance the Socioeconomic Value of Data*

By the numbers:

- 9 Plenary Speakers & Panelists
- 53 Posters, 16 Demos
- 40+ Sessions
- 69 First Time Attendees
- Several international participants
- 268 Attendees + more online!



Meeting Technology

Tuesday, July 16

8:00am **Morning Plenary**
Kai Blumberg • Erin Robinson • Rob Casey • Karl Benedict • Becca N

9:45am **Break**

10:15am

- Cloud Security and Compliance in Public Sector Archives
Patrick Quinn • Peter Plofchan • Ben Williams • Nathan Clark • Andrew Pawloski
- Big Gridded Data: The transition from legacy to next generation
Jay Su • Rich Signell • Michael Rilee • Ed Armstrong • David Blodgett
- Cloud 101: How Do I Get Started in Cloud Computing Workshop
Marge Cole • Amanda Tan • Mike Little



Access meeting info in Sched:

<https://2020esipwintermeeting.sched.com/>

Secure <https://esip.figshare.com>

Quick access, place your bookmarks here on the bookmarks bar. [import bookmarks now...](#)



ESIP
Earth Science
Information Partnership

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SM19 ESIP Meeting Take Aways

File Edit View Insert Format Tools Add-ons Help Last edit was on June 21

100% Normal text Arial 11

Session leads should use this document to work together with session participants to capture up to 3 'take away' points from their 2019 ESIP Summer Meeting Breakout Session. Share this document with others → <http://bit.ly/sm19takeaways>. These points will be shared along with session content in [Sched](#) and in [Figshare](#).

ROOM	DAY & START TIME	SESSION NAME	TAKE AWAY #1	TAKE AWAY #2	TAKE AWAY #3

Record session takeaways:

<http://bit.ly/wm20takeaways>



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ESIP Summer 2019:
7951 views, 1829
downloads

Find & Access Meeting Content



Multi-sensor data integration for cryosphere and hydrosphere monitoring

In keeping with this year's Summer Meeting theme of "Increasing the Use and Value of Earth Science Data and Information," this session aims to explore different data streams used for monitoring of the hydrosphere and cryosphere. Earth science data for water resources monitoring has existed as field collected data, remote sensing, modeled and in situ data for decades but relatively recent increases in computational capabilities (e.g. cloud computing platforms), data storage and integration and processing methods like machine learning have allowed researchers to ask a suite of questions that rely on data from multiple sources and typologies to answer complex questions about water resources critical to humans and ecosystems. To emphasize the 'use and value of earth science data' this session will incorporate presentations on data generation and processing methods as well as applied uses of data products for water resources monitoring.

Presenter: Eric Sproles

Presentation Title: Bridging the Scaling Issues of Earth Observations

Slides: <https://doi.org/10.6084/m9.figshare.8980400>

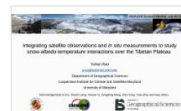
Session Take-Aways

1. NRCS plans to convert long-term snow courses to SNOTEL, continue to pursue tech upgrades, develop new methodologies to improve accuracy
2. Machine learning can integrate satellite observations and in situ measurements to create a more complete measurement
3. UAV provide higher density albedo measurements, remote locations, multiple field sites
4. Creating an integrated system for the future to track cryospheric changes
5. Arctic Data Committee has technical and semantic guidance for integrating cryospheric data

[View the Recording on YouTube](#)



National Resources Conservation Service SNOTEL Network
Scott Oviatt
01/08/2019



Integrating Satellite Observations and In Situ Measurements to Study...
Yuhan Rao
01/08/2019



New Data, Old Problems: Integrating Novel Data Sources for Study & M...
Jeff Deems
01/08/2019



Polar Data Activities
Ruth Duerr
01/08/2019



Location, Location, Location: Enabling Data Discovery by Place
John Porter
01/08/2019



Google Collaboratory for HDF-EOS
Hyokyoung Lee
01/08/2019



Detailed ecology survey data can be captured using a general purpose ontology
Simon Cox
01/08/2019



CUAHSI Tools for Data Management
Martin Seul
01/08/2019



Planet data, Applications, and Interoperability
Kelsey Jordahl
31/07/2019



The Critical Zones: Supporting Place Based Research
Colin Bode
31/07/2019



Five Frontend Libraries for Visualizing Your Time-Series Data
Connor Scully-Allison
31/07/2019



The Information Management Code Registry: Software Solutions for In...
Colin Smith
31/07/2019



U.S. Energy Infrastructure: 'What's Past is Prologue'
Fred Beach
31/07/2019



The Scale and Value of Earth Observation Infrastructure
Jason Gallo
31/07/2019



Maintaining and Advancing Data Publishing at Dryad
Daniella Lowenberg
31/07/2019



Culture, Kindness, and Care: Commoning for Earth Knowledge ...
Bruce Caron
31/07/2019

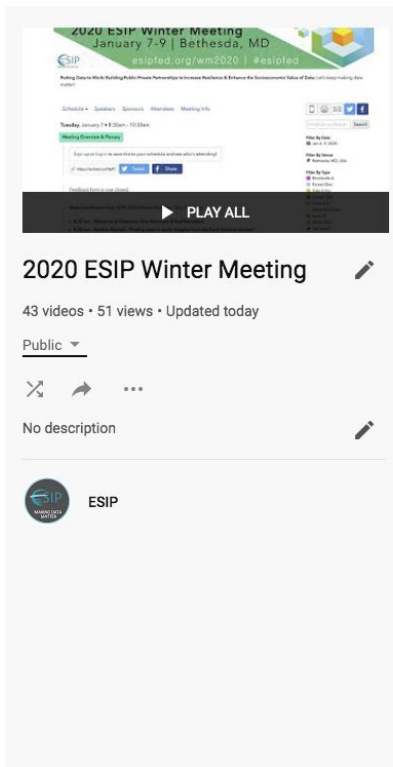
By Session:


<https://2020esipwintermeeting.sched.com/>


Browse Presentations:


https://esip.figshare.com/ESIP_Winter_2020


Find & Access Recordings





17  Fire effects on soil morphology across time scales: Data needs for near- and long-term land and ha..
ESIP


18  Datacubes for Analysis-Ready Data: Standards & State of the Art
ESIP


19  Interoperability of geospatial data with STAC
ESIP

20  Creating a Data at Risk Commons at DataAtRisk.org
ESIP

21  COPDESS: Facilitating a Fair Publishing Workflow Ecosystem
ESIP

22  Bringing Science Data Uncertainty Down to Earth - Sub-orbital, In Situ, and Beyond
ESIP

23  Earth Observation Process and Application Discovery, Machine Learning, and Federated Cloud Analyti..
ESIP

 Advancing Data Integration approaches of the structured data web



Browse Recordings on YouTube:

https://www.youtube.com/playlist?list=PL8X9E6l5_i8jS30oTnA5hywcecB4W2lrt



2020 ESIP Winter Meeting

Plenary Highlights

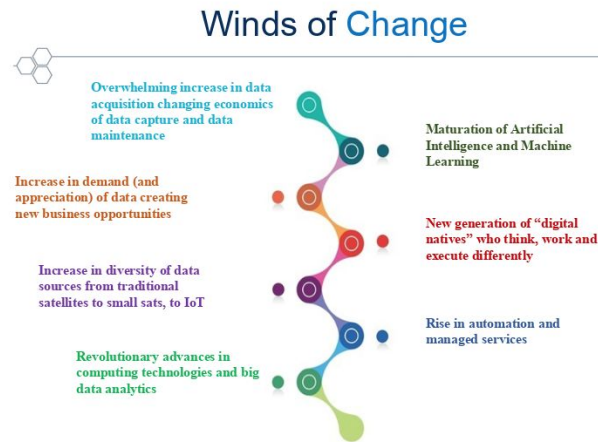


Tuesday Plenary

Highlights:

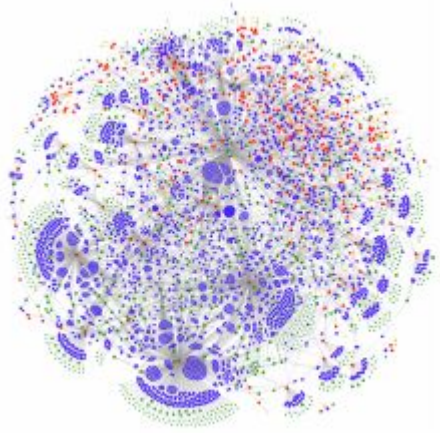
- The Earth Science community realized the value of community openness, diversity, sharing, inclusiveness
- OGC is moving their standards process toward API development
- ESIP and OGC partnered at this meeting on the Coverage Hackathon

Nadine Alameh, OGC spoke on "Putting Data to Work: Insights from the Earth Science Domain"



Tuesday Plenary

Paco Nathan, Derwin Inc,
spoke on "Rich Context:
support for cross-agency data
stewardship, measuring
dataset impact on public
policy"



Highlights:

- Public private partnership – a case study from Coleridge Initiative at NYU.
- AI practices circa 2020 – perspectives from industry - the power of knowledge graphs
- Rapid evolution of hardware - next gen frameworks that decouple storage & computation

Tuesday Plenary

Public-Private Partnerships Panel

- Jeff Donze - ESRI
- Ana Pinheiro Privette - Amazon
- Timothy Stryker - USGS
- Ajay Mehta - NOAA NESDIS



Highlights:

- Multiple perspectives on the development and sustenance of productive partnerships
- Specific examples of partnerships and their outcomes
- Illustration of diverse partnerships and methods for defining those partnerships and desired outcomes

Wednesday - State of ESIP



- ESIP released its FY19 annual report & summarized results
- ESIP Sponsors presented on agency-specific news from NASA, NOAA & USGS
- The Association of Research Libraries (ARL) and the US Research Software Sustainability Institute provided a summary of relevant work.

Thursday Plenary

Samantha Snell, Smithsonian spoke on Preparedness and Response in Collection Emergency (PRICE)

Highlights:

- There are 155+ million specimens that the Smithsonian houses
- They prepare for emergencies include both environmental and terrorist
- Smithsonian has developed a Collection Digitization and Collection Space Assessments
- PRICE came out of a need for cross-Smithsonian coordination and protection of diverse set of collections
- PRICE provides training for handling emergencies and is using this as an opportunity to break down silos

Wet Salvage Workshop



Thursday Plenary

Dan Pilone, Element 84 spoke on *Looking over the edge: Bridging the gaps between geospatial data, cloud computing, and local disaster response organizations*

Highlights:

- During the Camp Fire in CA firefighters need a variety of Earth observations
- Element 84, AWS and partners developed a disaster response data pipeline to get data to the field on AWS Snowball Edge
- Dan emphasized the urgency that you have 15 minutes to explain and knowledge is key.



Disaster Response Data Pipeline





2020 ESIP Winter Meeting

Breakout Session Highlights



Public-Private Partnerships for Earth Observations

Engaging the ESIP community in sharing experiences and expertise in identifying, building, and supporting productive public-private partnerships that increase the value and impact of Earth Observations

Takeaways:

- This is an area of significant interest and engagement for the community - 31 participants and 21 responses to the topic survey
- Four highly engaged discussions
- Topics primarily focused on higher-level issues: exemplars, open- and proprietary-data tensions, citizen-science in support of decision-making, getting actionable data to decision-makers

Next Step: Develop cluster charter and form cluster



**Want to learn more?
Contact: Karl Benedict
Karl Benedict**

Data Skills & Competencies Requirements for Data Stewards: Views from the ESIP Community and Beyond



Engaging the ESIP community in identifying key skills and competencies for data stewards and data service providers. Following up on a process started at the 2019 ESIP Summer Meeting.

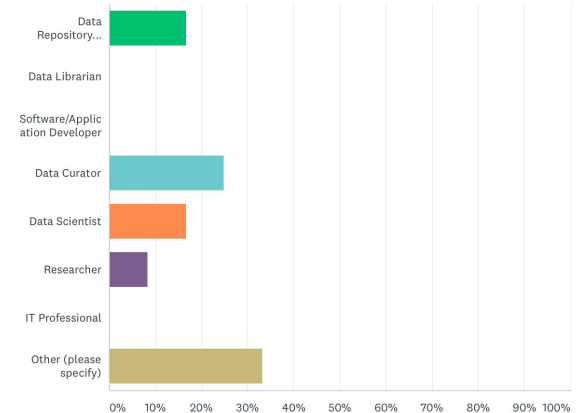
Takeaways:

- The ESIP community brings a diversity of perspectives to this question: repositories, curators, data scientists, researchers, and hybrid
- There are additional areas of overlap that were identified in discussing where questions like this are being considered (e.g. CDF)

Next Step: Continue to share and collect data

What is the perspective from which you are responding to this survey

Answered: 12 Skipped: 2



Want to learn more?
Contact: Karl Benedict
Karl Benedict

Developing, Using and Testing Tools to Assess Learning Resources from two Perspectives: the Teacher and the Learner

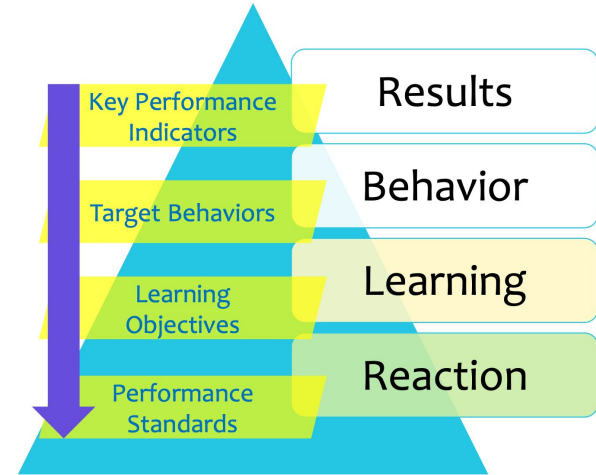


Engaging the ESIP community in developing assessment tools for the learning resources registered in the Data Management Training Clearinghouse

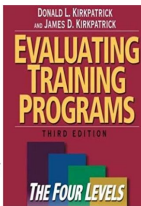
Takeaways:

- It's hard to compete with Citizen science, Sensor Networks, Ag & Climate, and Structured Data
- Those who came were ready to dive deep into helping us approach the development of our assessment tools in an informed and systematic manner

Next Step: Refine and streamline our assessment strategy for building the most relevant resource assessment instruments.



Donald L. Kirkpatrick and James D. Kirkpatrick. 2006 *Evaluating Training Programs: the Four Levels*. 3rd Ed. Berrett-Koehler Publishers, Inc.



**Want to learn more?
Contact: Karl Benedict
Karl Benedict**

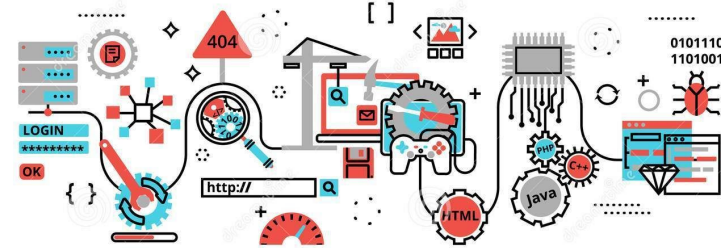
Software Sustainability, Discovery and Accreditation

Looking for actions that the ESIP community can take to improve software sustainability, discoverability, and accreditation

Takeaways:

- **Open source software is growing very rapidly, but funding agencies don't do a good job of maintaining or even tracking the software they fund**
- **Help reward contributions to software, particularly in collaborative efforts, by, for example: encouraging software citation, creating software prizes, considering software in hiring and promotion, defining and promoting FAIR software**
- **ESIP could define best organization practices for new software projects, via a recipe for new software repositories**

Tags: Software credit, software citation, software best practices, software scaling



Source: <https://www.dreamstime.com/concept-development-software-coding-process-modern-flat-editable-line-design-vector-illustration-programming-graphic-image102080882>

Want to learn more?

Contact: Daniel S. Katz

Join: Scientific Software Cluster
(note that it's currently inactive)

AI for Augmenting Geospatial Information



This session invited five speakers to talk about the current progress of using AI in extracting and discovering value-added information from geospatial datasets.

Takeaways:

- **AI-based geospatial information discovery has already been used in *traverse cirrus band detection, dust detection, keyword assignment, automated farming, precipitation, data quality enhancement, mapping schools, dangerous house identification, land cover mapping.***
- **AI engineering has sophisticated cycles and needs very effective workflow management.**
- **Open sharing of complete AI workflows (not just trained models) is a key step to boost the adoption of AI in Earth sciences.**

Tags:

Artificial Intelligence; Machine Learning; Data Mining; Intelligent Earth System Science

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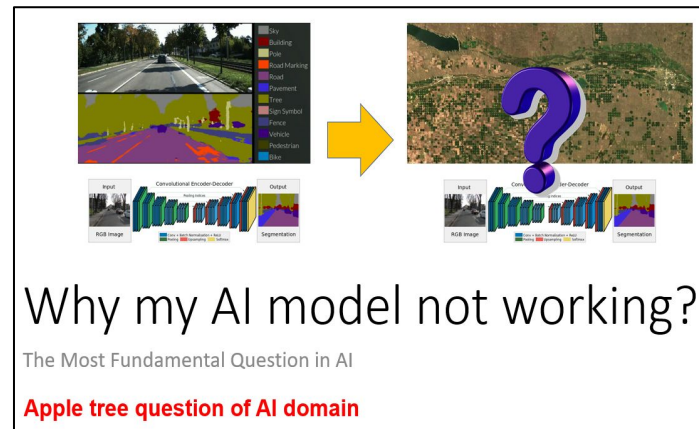
Want to learn more?

Contact: Jensen Ziheng Sun zsun@gmu.edu

<https://lists.esipfed.org/mailman/listinfo/esip-machinelearning>

and 150+ partner organizations

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Why my AI model not working?

The Most Fundamental Question in AI

Apple tree question of AI domain

FAIRtool.org, Serverless workflows for cubesats, Geoweaver ML workflow management, 3D printed weather stations



This session provided a space for funded ESIP Lab projects to report on their progress over the past 6 months.

Takeaways:

- **Projects could use bridge funding to create/enhance documentation for re-use.**
- **Small grant funding is a valuable way to take a project from an idea to prototype.**
- **Projects all noted that they would have benefited from more interaction amongst each other. Even though their projects were very different, a community of innovators would be useful!**



Tags:
Innovation, OS, ESIP Lab

Want to learn more?
Contact: lab@esipfed.org
Join: esipfed.org/lab

The OGC Innovation Program



- Research & Innovation
- Cost Share
- Building business
- Collaboration
 - What sponsors need
 - What customers need
 - What others do
- Influence
 - Standards
 - Marketplace
- Contribute to a sustainable world

OGC Testbed-16

Call for Participation:

<https://www.ogc.org/projects/initiatives/t-16>

Topics:

Machine Learning, data access & processing API, Jupyter, semantics, analysis ready data, DGGs, ...

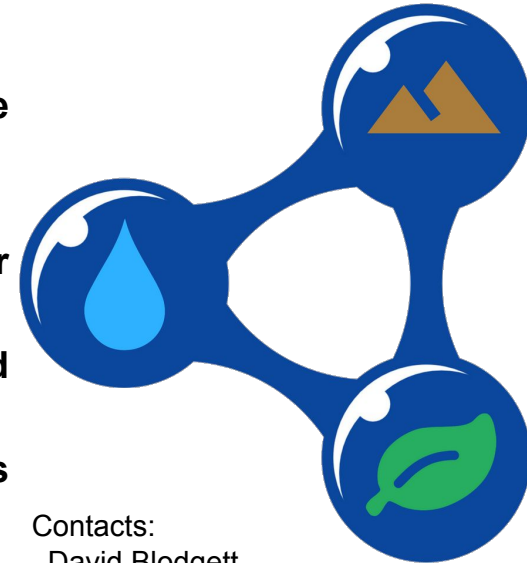
Deadline: Feb 09!!

Advancing Data Integration Approaches for the Structured Data Web - overview and working session

Overview of numerous structured data web activities were presented in lightning talk format followed by a break-out oriented working session to further a collection of specific topics.

Takeaways:

- There is increasing linked-open-data adoption but best practices are needed for a number of applications.
- Testing of cross-system linked-data federation could move forward.
- Crossing the divide between linked data and remote sensing or continuous modeled data needs to be explored.
- Identification of links that are "in-band" linked data resources and those that are not needs to be addressed.
- The points above were explored in the breakout session but there is much more work to do!



More info on the session sched page: <https://sched.co/XrhQ>

Contacts:
David Blodgett,
dblodgett@usgs.gov
Irina Bastrakova,
Irina.Bastrakova@ga.gov.au

Bringing Science Data Uncertainty Down to Earth - Sub-orbital, In Situ, and Beyond



Primary Goal: Identify relevant use cases and lessons learned from sub-orbital and in situ data management and UQ/UC experts (S-MODE and ARGO).

Takeaways:

- UQ/UC for sub-orbital and in-situ is very ad-hoc.
- S-MODE provides an unprecedented diversity of data for a NASA EVS mission.
- Uncertainty in ARGO depends strongly on length scales and proper treatment non-Gaussian distributions.

Key Reference:

<https://doi.org/10.6084/m9.figshare.10271450>

Tags:

quality, uncertainty, data science, in situ, airborne, sub-orbital, s-mode, argo

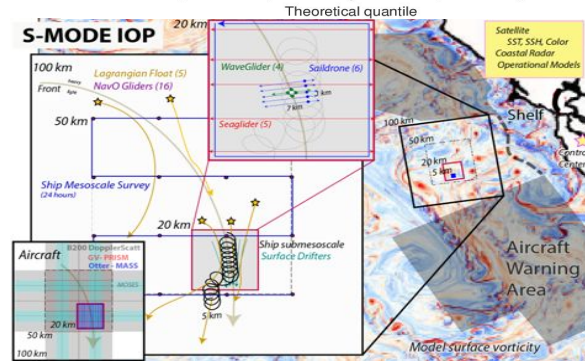
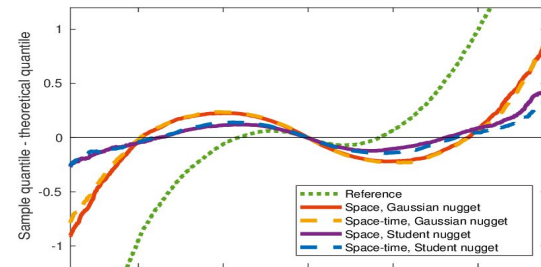
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Want to learn more?

Contact: David Moroni (david.f.moroni@jpl.nasa.gov)

Join: <http://lists.esipfed.org/mailman/listinfo/Esip-infoquality>

FAIR Laboratory Instrumentation, Analytical Procedures and Data Quality



A kick-off session to engage researchers, data managers, and system engineers, to contribute ideas on accelerating development of global standard protocols and the promulgation of best practices for Earth and environmental science analytical laboratory data

Takeaways:

- **Interoperability of lab analytical data requires consistent and machine-readable protocols and vocabularies: there are none.**
- **Comparison with Seismology (Chad Trabant): each instrument at each University had its own standard. They developed an agreed standard first, and then engaged communities, and eventually manufacturers.**
- **If we are to continue this discussion should this be done in collaboration with manufacturers, EarthCube RCN, WG in ESIP or under RDA ESES IG: a lot can be leveraged from W3C SSN and OGC. Note: it is an international issue.**

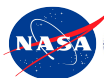


Tags:

PIDS for instruments, Sensors, Standards, Procedures, Data Quality

Want to learn more?

Contact: Kerstin Lehnert, Lesley Wyborn



Citing Everything

(ESIP Winter Meeting Jan. 2020)



- **Background:** ESIP has guidelines on data and software citation. Now we want to consider broader issue of addressing all (most) of the concerns embedded in citation of all (most) types of objects used in research.
- **Definition:** Citation is a *reference* to an item for the purpose of *credit attribution* and facilitation of *access* to the item.
- **Task:** Consider *when* an item should be identified (name and location) to ensure reproducibility of a result.
- **Takeways:**
 - When a ‘thing’ becomes a ‘thing’ is highly contextual. Name and location may be considered separately for a period.
 - Need to consider other use cases. Notably credit.
 - There may be classes of things that can be treated similarly.
- **Get involved:** http://wiki.esipfed.org/index.php/Research_Object_Citation



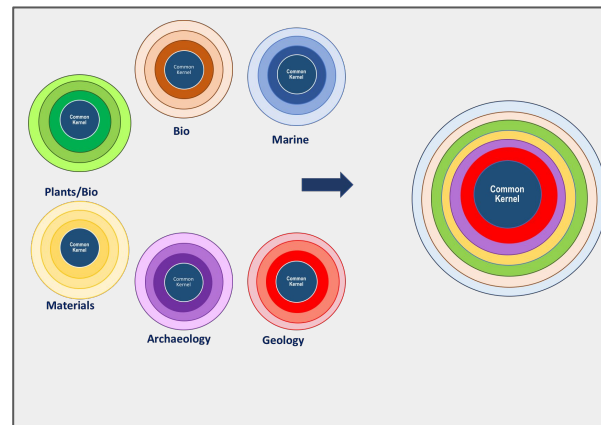
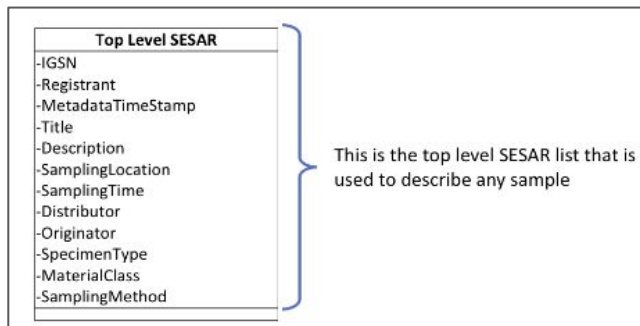
Defining the Bull's Eye of Sample Metadata



Session invited participants from earth and environmental science to help define what is the minimum set of attributes needed to describe physical samples that are at the heart of much of Earth and environmental research.

Takeaways:

- Focus on core, '*top level SESAR*' metadata fields.
- Recommend mapping between ISO and SESAR schema. Conduct testing on small set.
- Do we take this conversation further within the ESIP community?



Want to learn more?

Contact: Kerstin Lehnert or Lesley Wyborn

Join:

<https://www.rd-alliance.org/groups/physical-samples-and-collections-research-data-ecosystem-ig>

Tags:

Physical Samples, Metadata, Vocabulary, Ontology



FAIR Metadata Recommendations



The Documentation Cluster continues to work on defining an ESIP FAIR Metadata Recommendation

Takeaways:

- Public FAIR metric is high level and simple and includes only items that everyone agrees upon.
- Initial test results show that reusability is typically low and accessibility needs attention as it's hindered by broken/missing links.
- “When you decide what fields are mandatory you decide what metadata you get”
- User interface must emphasize benefits.

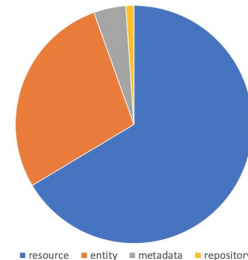
Tags:

FAIR Metadata

ESIP Recommendations

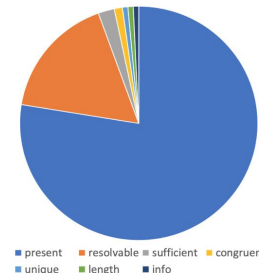
Objects

resource	The primary object being described by metadata.
entity	A thing with distinct and independent existence and properties.
metadata	standard, structured content that describes resources
repository	organization that stores and provides access to metadata and resources



Check Types

present	Check for the existence of content in an element
resolvable	Check whether metadata content matches resource
sufficient	Check metadata element against criteria for sufficient resources
congruent	Check whether metadata content matches resource c



Questions / suggestions?

ted.habermann@gmail.com

jones@nceas.ucsb.edu

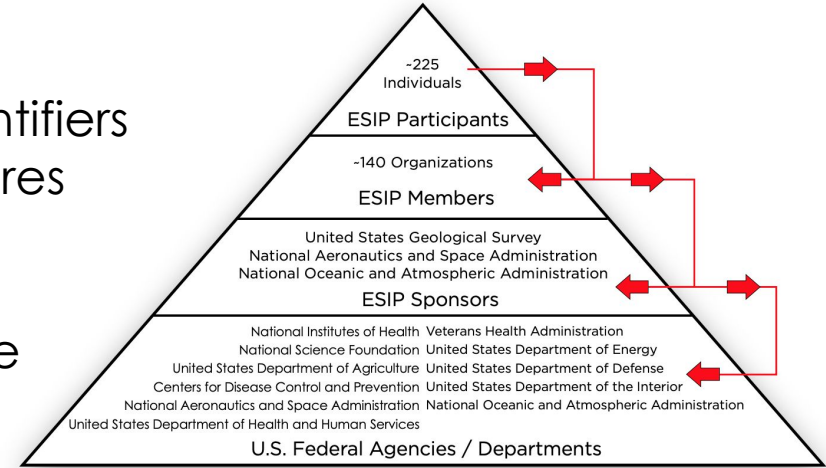
Identifying ESIP

Opportunities for ROR Organizational Identifiers for ESIP Sponsors, Members, and Winter Meeting Participants.



Takeaways:

- ESIP understands the critical role of identifiers in scholarly communication infrastructures
- Granularity is an important on-going concern
- ESIP participants have an important role sharing information and enthusiasm for identifiers in their organizations.



Leadership Model - ESIP participants have critical roles sharing information, applications, and enthusiasm for identifiers in their organizations.

Tags:

Organizational Identifiers

Research organization registry (ROR)

Questions / suggestions?

Contact: ted.habermann@gmail.com



Accelerating Convergence of Earth and Space Data in Teaching and Learning Through Participatory Design



Engaging teachers and scientists in a participatory design process to identify needs in order to close the gap between data tool development and classroom experience.

Takeaways:

- Teachers believe data are helpful in the teaching of Earth science.
- There are significant barriers for Earth science teachers using existing tools in the classroom for engaging students with data.
- A participatory design process will be used to create a guidebook to help Earth science teaching tool developers make tools more usable.

Tags:

Participatory design, earth space data, teaching and learning



Wireframe for a new Earth science tool created by teachers during the session.

Want to learn more?

Contact: Catherine Cramer
catherine@woodsholeinstitute.org



Citizen Science Data and Information Quality

Kickoff discussion to broaden the scope of ESIP Information Quality Cluster efforts into the area of citizen science data and information quality.

Takeaways:

- **Quality Assurance in the GLOBE program**
- **Lessons learned from NOAA citizen science case studies:** keep it simple, pilot test early, Combine manual and automated checks, Engage volunteers with questions soon.
- **Ensure that Citizen Science data becomes Community Data:** participatory action research and community peer review
- **Interoperable citizen science data for Earth Challenge 2020.**
- **Potential topics for future IQC discussion: assigning DOIs for CS data; assess the maturity of CS data**



Standardize
d Protocols

Participant
Training

Range &
Logic
Checks

Photo
Approval

Data Quality Assurance in the GLOBE program

More info: http://wiki.esipfed.org/index.php/Information_Quality
Subscribe: <https://lists.esipfed.org/mailman/listinfo/Esip-infoquality>

Yaxing Wei, Robert Downs,
Ge Peng, and David Moroni
esip-infoquality@lists.esipfed.org



Citizen Science In Earth Science: Challenges and Opportunities



This session explored the ways open citizen science data sets are used in research and discussed associated challenges and opportunities

Takeaways:

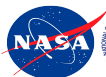
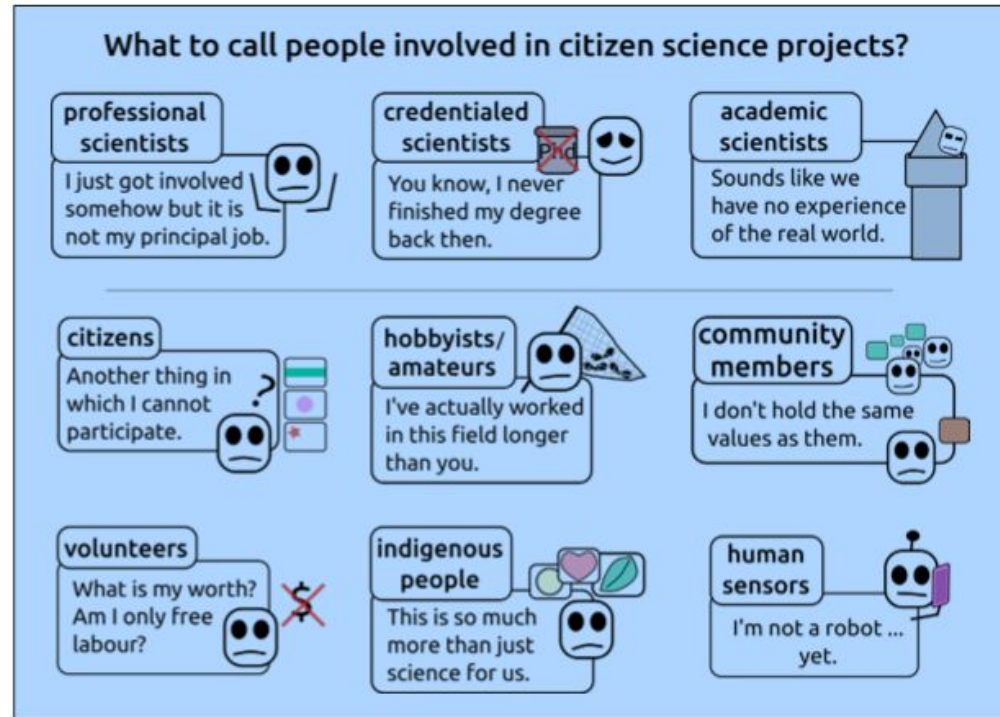
- Relationships, reciprocity, win/win scenarios, and terminology matter
- Attribution, identification, credit, citation, etc. are complex ethical issues
- Managing process, data, and metadata quality can be challenging

Want to learn more?

Contact: Alexis Garretson, Kelsey Breseman, or Ruth Duerr

Tags:

Citizen science, Ethics, Data



Data Stewardship Planning Meeting



Discussed priorities for 2020, potential collaborative outputs, and reviewed the work in progress from the last year.



Takeaways:

- A very active umbrella committee with multiple clusters
- Proposed activities for this year (each with a champion)
 - Identifiers for research objects
 - FAIR data
 - Ensuring Schema.org guidance works for repositories
 - Citizen science data collection, metadata, attribution, stewardship
 - Leading practices & identifying gaps in existing educational resources
 - Improving repository finding
 - Developing a corpus of positive examples of data stewardship

Tags:

Citations, Quality, Educational Resources, At Risk data, ROI, Identifiers

Want to learn more?

Contact: Amber Budden (chair)

Join: <http://lists.esipfed.org/mailman/listinfo/esip-preserve>

Next Telecon: 2/6/2020 2pm ET <https://global.gotomeeting.com/join/157892821>

COPDESS, the Coalition for Publishing Data in the Earth & Space Sciences, is an ESIP cluster that connects and fosters dialogue and coordination between publishers and data facilities. This session focused on progress and impacts of the ongoing implementation of FAIR Data principles by publishers, and touched on the status of data citation in journal articles, impact of t

Takeaways:

- **Implementation of FAIR Data principles by publishers has revealed the lack of clear and detailed guidelines, workflows, and policies that help authors, editors, and data curators to navigate the new publishing requirements.**
- **The COPDESS Cluster should organize a workshop in conjunction with the ESIP SM 2020 to address these challenges and specifically invite editors.**
- **Publishers are defining criteria for recommended data & software repositories. Data repositories need to urgently provide feedback and make their voices heard.**

Tags:

FAIR Principles, Publishing, Data Citation, Repositories

Want to learn more?

Contact: Kerstin Lehnert, Lesley Wyborn

2020 CDF Winter General Assembly Meeting



Recap of the semi-annual meeting of the Council of Data Facilities Assembly Members, co-located at the ESIP Winter Meeting.

Takeaways:

- **Several Activity Updates**, see meeting minutes:
 - <https://tinyurl.com/CDFagenda>
- **CDF supporting** Enabling FAIR Data Project and COPDESS:
 - [2-Part Webinar in Feb.](#) with Publishers, AGU, WDS representatives
 - Discuss Draft Pub: *Data Repository Selection- Criteria That Matter* <https://osf.io/m2bce/>
- Upcoming **CDF action items**:
 - Summer election, all offices - self nominate!
 - [Charter revision](#) open for comments



**Council
of
Data
Facilities**

Tags:

FAIR principles, repositories, CDF, earth space data

Want to learn more?

Contact: Danie Kinkade or Steve Diggs

dkinkade@whoj.edu, sdiggs@ucsd.edu



Schema.org

Advancing the governance of the science-on-schema.org guidance documents.

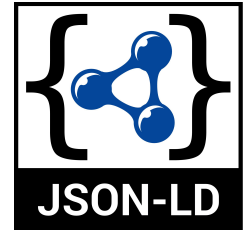


Takeaways:

- Decided on a Git workflow for publishing new releases of <https://science-on-schema.org>
- Decided how to link metadata records to Datasets
- Developed a plan to improve guidance for describing a Dataset's license.

schema.org

GOOGLE DOC NOTES: bit.ly/2QvxEPM



Tags:

Schema.org, structured data, JSON-LD, websites, web harvesting, distributed web

Want to learn more?

Contact: ashepherd@whoi.edu

Join: <https://lists.esipfed.org/mailman/listinfo/esip-schema-dot-org>

GoToMeeting: <https://global.gotomeeting.com/join/431083909>



2020
Putting Data to Work

ESIP Winter Meeting Summary

Disaster Lifecycle Cluster

All Hazards Consortium GIS
Meeting

Poster Session

NASA EOSDIS Meeting

Breakout Session

Karen Moe, Dave Jones
Co-chairs Disaster Lifecycle Cluster
karen.moe@earthlink.net,
dave@stormcenter.com

Operational Readiness Levels (ORLs)
Disaster Lifecycle Cluster Engaging Users
Accelerating Research to Operations



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Emerging EnviroSensing Topics:

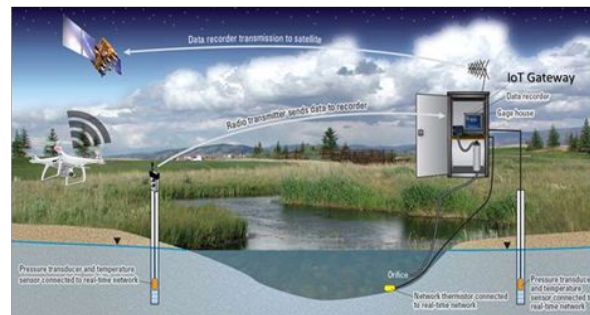
Long-range, Low-power, Non-contact, Open-source Sensor Networks

Presentations and discussion on approaches to standing up long-range, low-power monitoring networks; the value(s) added by non-contact sensing as well as innovative sensor developments, including open-source approaches, that promote connectivity on the ground or throughout Space.

Takeaways:

- Observation Architecture needs to account for point measures on Earth through remote sensing in Space
- LPWAN users are pushing processing to the fringe to maximize coverage, and power/data-transfer budgets
- Inexpensive does not equate to cheap; opensource hardware may serve as a means for market disruption

Tags: Internet of Space, LPWAN, Market Disruption, Opensource hardware, SUAS, Equipment Testing



Want to learn more?

Contact: Cluster Co-chairs:
[Scotty Strachan](#), [Renée F. Brown](#)

Join:

[ESIP EnviroSensing Cluster](#)
Telecons: [Monthly on the first Tuesday at 5:00pm ET](#)



2020 ESIP Winter Meeting

Community Fellow Highlights



Community Fellow Reflection

Machine learning/AI is in action across Earth & environmental sciences community.

Highlights:

- **New AI focus for Agriculture & Climate cluster;**
- **Value of PPP (Public-Private Partnership)**
- **Can we leverage 20-year ESIP archive to monitor our own community evolution?**

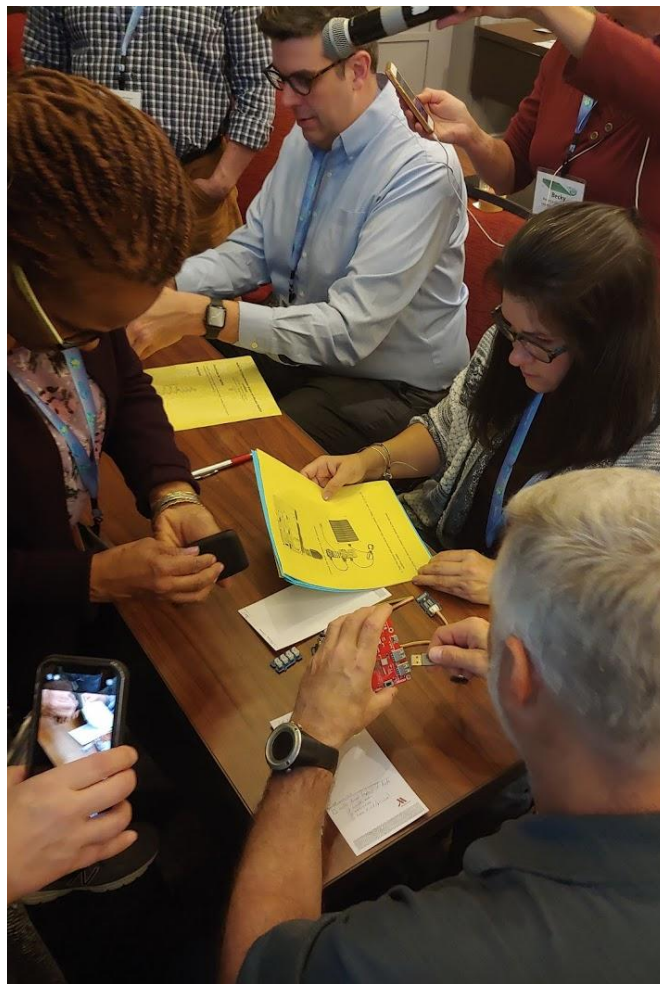
Want to learn more?

Contact: Yuhan (Douglas) Rao, Fellow for ML Cluster,
NCSU/NCICS

Email: yuhan.rao@gmail.com



Word cloud of keywords from 2020 Winter Meeting.



You get 15 Minutes



2020 ESIP Winter Meeting

Questions?

Meeting Sponsors

Lanyards



In-Kind



Many Ways to Stay Connected



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.

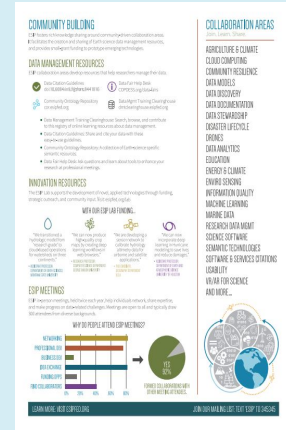


NETWORK

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



Encourage your organization to join ESIP's 110+ member organizations. Unlock membership benefits: start new collaborations, apply for funding, and more.



ESIP 1-pager: esipfed.org/onepager

Join Monday Update Mailing List:
<http://eepurl.com/rJQYn>

Thank you for attending the 2020 ESIP Winter Meeting Highlights Webinar!



More info coming soon at <https://2020esipsummermeeting.sched.com>.

Get in touch: staff@esipfed.org.