

The following report is the second semi-annual progress report for the Foundation for Earth Science’s Cooperative Agreement (NA13NES4400005) with NOAA. This report covers the period from December 1, 2014 through May 30, 2015. In the second half of the second year of this project, the Foundation for Earth Science focused on supporting the ESIP Federation platform for community collaboration. The following highlights are noted from the past 6 months:

ESIP Federation Platform for Community Collaboration .....	1
<i>ESIP Governance</i> .....	1
<i>Web Assets</i> .....	2
<i>ESIP Testbed</i> .....	2
Synergistic Activities and Outputs .....	2
<i>Support Earth Science Data Management Initiatives</i> .....	2
<i>Winter ESIP Federation Meeting, Washington, D.C.</i> .....	4
<i>Professional Development</i> .....	4
<i>Facilitate Cross-Community Engagement</i> .....	4

## ESIP Federation Platform for Community Collaboration

### ESIP Governance

#### Staff

Following on Erin Robinson’s appointment as the Foundation for Earth Science’s (FES) Executive Director, in November 2014, Erin hired four new staff members this Spring. Dan and Annie Keyes are collectively a single full-time position focused primarily on operations and logistics. Annie Burgess joined FES at the end of April as ESIP’s Community Director and Rebecca Fowler joined FES in May as the Communication and Outreach Director.

#### ESIP Leadership

In January 2015 the ESIP Federation elected new leadership. The new officers started their terms, January 10, 2014, at the conclusion of the ESIP Federation’s Winter Meeting in Washington, D.C. Peter Fox, Tetherless World Constellation Chair and Professor of Earth and Environmental Science and Computer Science at Rensselaer Polytechnic Institute, serves as President and Emily Law, Science Data Systems Manager at NASA/JPL serves as Vice President. Ken Keiser, University of Alabama-Huntsville, chairs the Constitution and Bylaws Committee. Bill Teng, NASA GSFC, chairs the Finance and Appropriations Committee. Tyler Stevens, Associate Scientist, NASA Global Change Master Directory, chairs the Partnership Committee. LuAnn Dahlman, NOAA, chairs the Education Committee. Ethan Davis, UCAR/Unidata, chairs the Information Technology and Interoperability Committee. Justin Goldstein, USGCRP, serves as the chair of the Data Stewardship Committee. Danie Kinkade, Woods Whole Oceanographic Institute/BCO-DMO, serves as the Type I (data center) Representative. Steve Richards, Arizona Geologic Survey, serves as the Type II (research) Representative. Ted Haberman, The HDF Group, serves as the Type III (applications) Representative.

#### Membership

The ESIP Federation has had two classes of new members in the last six months, accepting 8 new members total, bringing the membership to 173 partner organizations.

- January 2015:
  - COOPEUS - ESIP-I (primarily data centers)

3980 BROADWAY SUITE 103-185 • BOULDER, CO 80304 • [WWW.ESIPFED.ORG](http://WWW.ESIPFED.ORG)

- E-DECIDER - ESIP-II (primarily research)
- GeoGateway - ESIP-II (primarily research)
- Geological Data Center, SCRIPPS - ESIP-I (primarily data centers)
- Kitware - ESIP-III (primarily applications)
- Marymount University - ESIP-II (primarily research)
- Purdue Libraries - ESIP-II (primarily research)
- UC Berkeley Libraries - ESIP-I (primarily data center) 1.9 UNAVCO - ESIP-I (primarily data center)

### **Strategic Plan 2015-2020 Update**

ESIP Vice President, Emily Law, and the ESIP Assembly are in the final stages of completing the 2015-2020 strategic plan. Emily worked with Committee and Collaboration Area leaders to align work plans with roadmap (mapping of goals and tasks) and has created a wiki page to document background, status, lessons learned, and to manage execution of the plan. The near final draft of the strategic plan and an implementation plan can be found on the wiki: [wiki.esipfed.org/index.php/2015-2020\\_Strategic\\_Plan\\_Workspace](http://wiki.esipfed.org/index.php/2015-2020_Strategic_Plan_Workspace)

### **Web Assets**

In the first half of 2015, ESIP provided a new app, ESIP Connects to enhance how meeting attendees can find information and connect with each other. The app is free for download and can be found here: [visitors.genie-connect.com/esipwintermeeting](http://visitors.genie-connect.com/esipwintermeeting).

### **ESIP Testbed**

The ESIP Testbed started a new tradition of showcasing funded work at the ESIP Winter Meeting poster session. These testbed projects were showcased: (1) Disaster Life Cycle: Establishing a Collaborative Common Operating Picture; (2) ToolMatch Service Project to Expand Community Engagement An entity linking service for documents and datasets in Earth and environmental sciences (3) Connect, Share and Discover ESIP Research and Expertise using VIVO

#### **FUNDing Friday**

- (1) Leveraging the Power of Google Earth Engine to Derive High Quality Water Reference Data for Flood Disaster Decision Support
- (2) Enhancing and Educating with the WxSat Mobile App
- (3) HDFCRAFT – Making Earth Data Fun!
- (4) ToolMatch Extension

This Spring, the ESIP Testbed Configuration Board held a 1.5 day workshop in Boulder April 24-25, 2015 on the next phase of the ESIP Testbed. To date, projects have primarily focused on incubation. Moving forward, the Testbed will also include a second stage of prototype assessment. Over the next eight months, the Products and Services Committee will be piloting a small prototype assessment phase with some NASA AIST projects. Details on the Testbed evolution can be found here:

<http://testbed.esipfed.org/>

## **Synergistic Activities and Outputs**

### **Support Earth Science Data Management Initiatives**

The ESIP Federation continues to support a wide variety of technical activities that emerge out of the community. Particularly active were the following technical activities:

- **Data Stewardship Committee –**
  - Data Stewardship Maturity Matrix
  - Defining data publication (see session)
  - Continued PCCS work, including Eos and D-Lib articles
  - Dynamic data citation workshop to be held Thursday afternoon at ESIP Winter Meeting; Details
  
- **Documentation Cluster –**
  - Attribute Convention for Data Discovery Version 1.3 Approved in December 2014 (<http://wiki.esipfed.org/index.php/ACDD>)
  - Documenting the Big Earth Data Initiative (BEDI) - [http://wiki.esipfed.org/index.php/Category:Documentation\\_Connections](http://wiki.esipfed.org/index.php/Category:Documentation_Connections) 2015
  - Encoding metadata groups/attributes in HDF and netCDF
  
- **EnviroSensing Cluster –** The Cluster formed Spring 2014. The primary objective for the ESIP EnviroSensing Cluster is to provide sensor network resources for environmental sensor practitioners through a wiki page and regular monthly teleconferences. Primary activities include:
  - 1) building a sensor and sensor data management best practices guide through community participation,
  - 2) regular monthly teleconferences, and
  - 3) ongoing maintenance of the EnviroSensing wiki page ([http://wiki.esipfed.org/index.php/EnviroSensing\\_Cluster](http://wiki.esipfed.org/index.php/EnviroSensing_Cluster)) and sensor network resource links.

The sensor and sensor data management best practices guide is an open-source, community-supported, living document that implements the “wiki process”. This best practices guide builds on the collective experience of community participants and is organized around the following six topics:

- Sensor site platform selection – selecting sites and acquisition systems
- Remote data acquisition – transmission from field to server
- Streaming data management middleware – available software systems
- Sensor management tracking and documentation – life cycle events to document
- Sensor data quality – QA/QC procedures EnviroSensing

Cluster monthly teleconferences provide a discussion forum that is open to the community. Teleconferences in 2015 have featured presentations by sensor research projects (e.g., the Monterey Bay Aquarium Research Institute, the Desert Research Institute, and Heat Seek NYC), and by sensor manufacturer and software developers (e.g., Aquatic Informatics, Onset, LI-COR, and Kisters).

- **Other active technical clusters and working groups** - All details for all groups can be found here (State of the Federation, Jan 2015)
  - Cloud Computing
  - Drupal Working Group
  - Earth Science Data Analytics (New Jan 2014)
  - Semantic Web Cluster

### Winter ESIP Federation Meeting, Washington, D.C.

The Winter Meeting showcased Food Resilience and included plenary talks by Joseph Fiskel, Center for Resilience at Ohio State University, Molly Jahn, University of Wisconsin and a panel on ‘User Needs for Food Resilience’. The second day plenary was a panel on ‘Enhanced Use of Earth Observations for Societal Benefit’ moderated by Curt Tilmes, NASA with Tim Stryker (OSTP), Fabien Laurier (USGCRP) and Rick Driggers (Climate Resilience Toolkit).

- 250+ participants, mostly in-person (approximately 5% remote)
- NOAA participation – 22 people either in-person or remote at ESIP Meeting (from across NOAA/NESDIS (3 Data Centers and NOAA Environmental Visualization Lab)) and CIRES
- 40+ breakout sessions covering a range of technical and nontechnical topics
- Proceedings here: <http://commons.esipfed.org/proceeding/Winter%20Meeting%202015>

### Professional Development

The ESIP Federation offered some education activities during the period of this report:

- Education Committee – ESIP was affiliated with NESTA over the last year. Through this affiliation the Education Committee collaborated with NESTA on the development of a teacher professional development workshop on the use of ESIP data in the context of the Next Generation Science Standards at the three fall 2014 National Science Teachers Association (NSTA) area conferences and the spring 2015 national conference (the NESTA-ESIP Data Workshop for Earth and Space Science Educators, or NESTA-ESIP Data Workshop for short). NESTA has a proven approach for offering professional development for educators that is well received, and is well attended by teachers. Through this collaboration, we will be able to offer the workshop at all four conferences, as a component of NESTA’s suite of workshops at the conferences, and provide professional development to a minimum of 120 teachers during the year. This approach dramatically decreases the cost of offering professional development for teachers (to less than \$20/teacher assuming 120 teachers at the four conferences) because it leverages the same workshop content at multiple venues and also does not require funding for teacher participation (either in travel, materials, or stipends).

### Facilitate Cross-Community Engagement

ESIP facilitated cross-community engagement through collaboration area activities including:

- *Agriculture & Climate Cluster* – Continued engagement with (1) USDA LTAR (Long-Term Agroecosystem Research) Network and (2) National Agricultural Library (NAL), which will handle the data system part of LTAR, in exploring areas of collaboration, with current focus on linking NASA and other satellite data with LTAR sites.
- *Energy & Climate Working Group* – Focused on issues related to data provenance, access, transparency issues for energy apps (Breakout session at the Winter meeting) Stakeholder engagement and observation gap identification (participated in NCSE meeting in late Jan.); Supporting the 2nd USGEO Earth Observation Assessment energy SBA
- *Disaster Response Cluster* – Established a “Collaborative Common Operating Picture” testbed with StormCenter Communication, NASA JPL and others.

Beyond collaboration areas, the ESIP Federation led a variety of activities over the last six months.

- A ESIP Innovator Interview series continued with interview from Simon Hodson, Executive Director of CODATA. All interviews can be found here: <http://esipfed.org/taxonomy/term/1396>

---

3980 BROADWAY SUITE 103-185 • BOULDER, CO 80304 • [WWW.ESIPFED.ORG](http://WWW.ESIPFED.ORG)

- We continued to produce “Member Highlights” on the ESIP Blog to showcase cool things happening around the Federation. All highlights are here:  
<http://esipfed.org/MemberHighlights>
- Ignite@AGU 2014 - For the fourth year in a row, NASA's Applied Sciences Program -- in partnership with the Federation for Earth Science Information Partners (ESIP) and the American Geophysical Union (AGU) Earth and Space Science Informatics (ESSI) group -- co-sponsored Ignite@AGU 2014 (<http://esipfed.org/igniteAGU2014>) at the 2014 Fall AGU meeting. NOAA was represented by Jeff de la Beaujardiere and Ken Casey.

ESIP was also represented at the following meetings:

- NASA ESDSWG, Greenbelt MD, March 2015
- RDA, San Diego, CA, March 2015
- OGC, Boulder, CO, June 2015