Annual LTER Information Management Committee Report (2017-2018)

Date: May 1, 2018

Name of Committee: Information Management Committee (IMC)

Name and affiliation of the Committee Chair: M. "Gastil" Gastil-Buhl (MCR)

Current IMC members: Dan Bahauddin (CDR), Stace Beaulieu (NES), Sven Bohm (KBS), Emery Boose (HFR), Renée Brown (MCM), James Conners (CCE, PAL), Jason Downing (BNZ), Stevan Earl (CAP), Hap Garrit (PIE), Gastil Gastil-Buhl (MCR), Corinna Gries (NTL), Kris Hall (SEV), Don Henshaw (AND), Brian Herndon (CWT), Hope Humphries (NWT), Li Kui (SBC), Jim Laundre (ARC), Mary Martin (HBR), Eda Melendez-Colom (LUQ), Margaret O'Brien (SBC), John Porter (VCR), Ken Ramsey (JRN), Suzanne Remillard (AND), Adam Sapp (GCE), Wade Sheldon (GCE), Chris Turner (NGA), Kristin Vanderbilt (FCE), Jonathan Walsh (BES), Tim Whiteaker (BLE), Yang Xia (KNZ)

How membership is determined (identified by sites, voluntary, appointed by the Executive Board, etc): Membership and roles are outlined in the LTER IMC Bylaws* . Membership includes an information manager at each site that serves as the primary site information management contact. Additional members may be identified by individual sites, by the LTER Network Communications Office (NCO), and by the Environmental Data Initiative (EDI) from among site or project personnel who are involved with information management. The Information Management Executive Committee (IM-Exec) is the steering committee for the IMC. IM-Exec members, including the IM-Exec Chair and representative to the LTER Network Executive Board (EB Representative), are nominated and ratified by the IMC committee as outlined in the IMC Bylaws.
A revised version of the IMC Bylaws (v. 3.0) was ratified on April 27, 2018 by the IMC.

Current Information Management Executive Committee (IM-Exec) members (*LTER site, term end-date and role in parentheses*): M. "Gastil" Gastil-Buhl (MCR, 2018), Wade Sheldon (GCE, 2018, EB Representative), Stevan Earl (CAP, 2019), Jason Downing (BNZ, 2020), and Suzanne Remillard (AND, 2020).

Meeting frequency:
- The IMC meets triennially at the LTER All Scientist Meeting (ASM). Additional meetings are held annually in non-ASM years, often in conjunction with a related

meeting (e.g., Earth Science Information Partners), to which attendance is strongly encouraged.
- The IM-Exec meets monthly via VTC to plan events, follow-up on key Network topics, and coordinate cross-site activity.

Major activities or accomplishments for the year:
- Monthly Virtual Water Cooler (VWC) sessions, via VTC, were conducted with informal discussion and follow-up on key Network topics. Meeting topics and notes are posted at http://im.lternet.edu/home/meetings/virtualupdates. Information Managers from all LTER sites are invited and encouraged to participate in these meetings, and they are typically well-attended.
- The 2017 Annual LTER Information Managers meeting was held at the Indiana University, Bloomington, hosted in conjunction with the Earth Science Information Partners (ESIP) Summer Meeting in July (see meeting report at http://im.lternet.edu/news/meetings/2017). Highlights and products of the meeting include:
  - LTER Information Managers, LTER Network Communications Office (NCO) representatives, Environmental Data Initiative (EDI) representatives, and other guests gathered to discuss issues related to LTER information management, the working relationships between the newly formed organizations (i.e., NCO, EDI) and information management in this new era.
  - Three new LTER sites are onboard, and the new Information Managers from these sites attended this meeting. Each presented their vision for information management at their respective sites, and received feedback on their proposals
  - NSF officer Dr. Peter McCartney participated remotely, providing updates from the NSF and answering questions from the Information Managers in attendance.
  - John Porter (VCR) led a session on *Visioning for Information Management*, during which common tools and issues of scalability for managing information across disciplines were discussed.
  - The IMC held a closed session business meeting in which voting on nominated officers occured.
  - Members of the IMC, some as representatives of EDI, co-organized six workshop sessions:
    - Create EML Using R and Share the Script via the Information Management Code Repository. Corinna Gries (EDI, NTL)

- - Use Application Programming Interfaces of Data Repositories to Create Local Data Catalogs. Duane Costa (EDI), Stevan Earl (CAP), Gastil Gastil-Buhl (MCR), John Porter (VCR)
    - Tools and Strategies for End-to-End Sensor Data Management Speakers. Matthew Bartos, Mike Botts, Wade Sheldon (GCE)
    - Annotating datasets with measurement classes from the Ecosystem Ontology (ESCO). Margaret O'Brien (EDI), Mark Schildhauer (NCO)
    - Sustainable Data Management, Return on Investment. Margaret O'Brien (EDI)
    - Developing an Information Management Code Repository. Colin Smith (EDI), Kristin Vanderbilt (EDI, FCE)
  - IMC members presented posters at the 'Research as Art' poster session; Jonathan Walsh (BES) presented a poster of BES Arts and Science Integration Program; and Eda C. Meléndez-Colom (LUQ) presented two posters: Luquillo LTER - LCZO Collaboration in Data Collection, and Management and DEIMS: An IMS for Scientific Research.
- A spring 2018 DataBits issue was published. For this issue, the first in four years, Editor Eda C. Meléndez-Colom (LUQ), in cooperation with co-editors Donald Henshaw (AND) and Hope Humphries (NWT), compiled and edited articles from authors spanning six countries. The articles touched a wide array of topics, including cross-national information management, commentaries on the history of the IMC, a community welcome to the new LTER sites, and technical articles among many others.
- Accomplishments from working groups are described below.

Subcommittees or working groups (WG):
- The Information Management System (IMS) Guidelines WG revised the Review Criteria for LTER Information Management V1.1. 2009 document. The document (Version 2.1. January 3, 2018), which defines best practices for LTER site information management, ratified by the IMC and approved by the EB.
- IMC Website Improvement & REDesign (WIRED) WG suspended activity during 2017 so as not to conflict with development of the new NCO LTER website. Upon the launch of the new NCO website, the WIRED group began discussions about revising and maintaining the LTER Information Management website (IMC website). In the meantime, the current IMC website, http://im.lternet.edu/, is still in use.
- After the Guidelines for Information Management System (IMS) were revised (see above), it became apparent that the Guidelines for LTER Web Site Design and Content (V1.1. 27 January 2009) required revision. The LTER Website

Guidelines WG, which is composed of representatives from the information management, communication, education, and PI communities formed to update the guidelines. The proposed revisions have been distributed to the IMC for comment with feedback requested by May 1, 2018. The tentative schedule calls for providing the revised document to the LTER Executive Board for approval at the May 15, 2018 meeting.

- The Ecological Metadata Language (EML) Congruency Checker (ECC) WG have developed and implemented several new checks that will improve the quality and interpretability of LTER data housed in the Network data catalog. These checks operate on EML files uploaded to the EDI repository. The new checks will encourage better documentation of dates and times in published datasets and improved discoverability of funding sources.
- The Drupal Ecological Information Management System (DEIMS) WG consists of seven sites that employ the Drupal-based DEIMS tool as the foundation for their information management system. This group is discussing enhancements of the current version, and developments required to accommodate a recent major update (version 8) to Drupal.
- The Governance WG formed during the summer meeting to update the current IMC Terms of Reference (ToR). This documented needed updating to represent the new Network structure that includes collaboration with NCO and EDI. The new document, now called "IMC Bylaws", describe IMC governance, protocols and structure. Formal adoption was accepted by majority vote on April 27, 2018.
- The IM Training WG developed a document on skillset and training resources recommendations, particularly for onboarding new LTER Information Managers. The document was reviewed by the IMC on May 3, 2017 and is online on the IMC website (http://im.lternet.edu/projects/training).

Planned activities for the coming year:
- The Annual IMC Meeting will be held on September 30, 2018 in advance of the LTER All-Scientist Meeting (October 1-4, 2018) at Asilomar Conference Grounds in Pacific Grove, CA.
- Details are forthcoming but members of the IMC are preparing to lead and co-lead workshops, and present posters at the LTER ASM. The IM-Exec and IMC will be working diligently through the summer to plan a fruitful annual IMC meeting, and to coordinate IMC participation throughout the ASM.
- Active WGs will meet and make progress on the activities listed below. It is likely that new WGs may form during the next year to address particular issues or events. The IMC maintains a roster of active WGs.

- ○ WIRED: Discuss options with the IMC during a VWC session to identify a path forward for this information resource. Develop a process of migrating website content from the historic IMC website to appropriate locations at either the LTER network website (NCO) or at EDI.
  - ○ ECC: The next few checks in the prioritized queue for development will be evaluated by the working group and developed by the EDI software engineer following a typical approximately six-month cycle of discussion, testing, and deployment on the staging server for evaluation before implementation.
  - ○ DEIMS: Discuss enhancements of the current version, and developments required to accommodate a recent major update (version 8) to Drupal.
- Prepare for adoption of EML 2.2: several Information Managers have been contributing to the development of EML 2.2; upon release, the IMC will work on approaches that will enable all Information Managers to take advantage of new features.

Upcoming changes in leadership, purpose, or process: Jonathan Walsh (BES) and Yang Xia (KNZ) rotated off of IM-Exec at the 2017 summer meeting. Suzanne Remillard (AND) and Jason Downing (BNZ) were elected to the committee. M. "Gastil" Gastil-Buhl (MCR), IMC Chair, and Wade Sheldon (GCE), EB Representative, will rotate off IM-Exec this year at the LTER ASM in the fall. IMC members have voted Dan Bahauddin (CDR) as the new EB Representative in a vote held on April 27, 2018; this recommendation will be presented to the EB for approved at their May 15 meeting. Dan will begin attending the EB VTC meetings following the May Science Council meeting in June pending confirmation. The IMC will vote on the other IM-Exec member and an IMC Chair at the annual meeting (September 30, 2018).