

2020 LTER Information Management Committee Annual Meeting Report

August 10, 2020

Virtually hosted in Zoom due to the COVID-19 pandemic

Table of Contents

Introduction.....	2
Participants.....	2
Agenda	3
Elections	3
<i>Timeline.....</i>	<i>3</i>
<i>IM Executive Committee member position description.....</i>	<i>3</i>
<i>Executive Board representative position description</i>	<i>4</i>
<i>Nomination statements</i>	<i>4</i>
<i>Announcement of election results.....</i>	<i>5</i>
Databits proposal and discussion	5
IMKE Breakout group activity.....	6
<i>Background</i>	<i>6</i>
<i>Previous IMKE virtual water coolers (2019-2020).....</i>	<i>6</i>
<i>Activity plan and group discussion questions.....</i>	<i>6</i>
<i>Breakout activity summary</i>	<i>6</i>
Appendix A: Databits proposal.....	8
Appendix B: IM Exec and breakout group reports from the IMKE activity.....	10
<i>IM Exec breakout summary.....</i>	<i>10</i>
<i>Individual IMKE breakout group reports</i>	<i>12</i>

Introduction

The 2020 LTER Information Management Committee (IMC) Annual Meeting was originally planned to take place at the Salt Lake Convention Center in Salt Lake City, UT, preceding the [Ecological Society of America \(ESA\) 2020 Annual Meeting](#) planned for August 3-6, 2020. Due to concerns surrounding the COVID-19 pandemic ESA decided that this meeting would be fully virtual. As a result, the IMC Annual Meeting consisted of an extended IMC virtual water cooler meeting held on 10 August 2020 at 3p ET / 12p PT. One advantage to this rescheduling was that, due to the tremendous cost savings afforded by virtual meetings, there were sufficient funds budgeted to cover registration fees for one IMC representative from each LTER site to attend both ESA, and the virtual [Earth Science Information Partners \(ESIP\) Summer Meeting](#) (July 8-25, 2020). IMs were strongly encouraged to attend and participate in both these meetings, particularly given the “40 years of LTER” theme at ESA. The two prior meetings provided discussion points during the IMC Annual Meeting, and IMC business items, elections, and special topics were also covered.

Participants

There were 27 participants in the meeting this year. They are listed below with their LTER site affiliations.

Dan Bahauddin (CDR)	Hap Garrit (PIE)	An Nguyen (BLE)
Stace Beaulieu (NES)	M. Gastil-Buhl (MCR)	John Porter (VCR)
Emery Boose (HFR)	Corinna Gries (NTL/EDI)	Suzanne Remillard (AND)
Renée Brown (MCM)	Kris Hall (SEV)	Vicky Rowley (CCE/PAL)
Jason Downing (BNZ)	Li Kui (SBC)	Adam Sapp (GCE)
Marty Downs (LNO)	Jim Laundre (ARC)	Chris Turner (NGA)
Stevan Earl (CAP)	Miguel Leon (LUQ)	Kristin Vanderbilt (FCE/EDI)
Sarah Elmendorf (NWT)	Mary Martin (HBR/BES)	Tim Whiteaker (BLE)
Mark Gahler (NTL)	Greg Maurer (JRN)	Yang Xia (KNZ)

Agenda

- Welcome (15 minutes)
 - Announcement of election results
 - ESA or ESIP follow-up comments
- Databits – (25 minutes)
 - Share proposal and Discussion
 - Ask for volunteer editors
- IMKE Breakout Groups
 - Share breakout group charge (5 minutes)
 - Breakout groups (30 minutes)
 - Report back (15 minutes)

Elections

There are two positions open for elections this year:

1. a member of the Information Managers Executive Committee (IM Exec)
2. the IMC representative to the LTER Network Executive Board (EB Representative)

Since the in-person meeting was cancelled, voting for these positions was addressed electronically, and results were announced during the August virtual water cooler. Candidates must be a member of the LTER Information Management Committee, must agree to be nominated, and can self-nominate if desired. Nominees submitted a statement of interest, a one-paragraph description of their experience, qualifications, and goals, to the IM Exec via email (imexec@lternet.edu) before July 20, 2020. Statements of interest were compiled for the community of LTER Information Managers to review prior to voting. Each LTER site was entitled to one vote on these positions, which could be exercised by the [lead IM at the site](#). Brief descriptions of the open positions and links to additional information are included below, as are the nomination statements from all candidates.

Timeline

- deadline to submit nominations: July 20, 2020
- electronic ballot distributed: July 27, 2020
- voting closes: August 5, 2020 at 15:00 Pacific
- results announced: August 10, 2020 at 12:00 Pacific

IM Executive Committee member position description

The IM Exec committee meets monthly via video conference. Major activities of the IM Exec include planning the IMC virtual water coolers and the annual IMC meeting, preparing reports for the LTER Executive Board, and coordinating and facilitating communication on IMC

activities. For a more complete and formal list of IM Exec activities and responsibilities, please see the [README](#) file in the IM Exec GitHub repository and the IMC [Bylaws](#). In 2020 there was an opening for one IM Exec committee member, who would serve for three years (2020-2023).

Executive Board representative position description

The [LTER Executive Board](#) develops bylaws and strategies for the LTER Network. The IMC EB Representative brings to this group the interests of, and input from, the IMC. This is a profoundly important position, with the EB Representative sitting at the interface of LTER Information Management and Network-wide policy. To be considered for this position, nominees must have served, or currently serve, on the IM Exec committee. The EB Representative, if not currently an elected member of IM Exec, is a non-voting, ex-officio member. The term is three years (2021-2024), which would begin following the annual LTER Science Council (SC) meeting in spring 2021.

Nomination statements

1. Statement on nomination to IM Exec committee

Greg Maurer, 20 July 2020

I'm pleased to accept nominations and run for a position in the LTER Network IM Exec committee. I'm a new IM, but I have worked at LTER sites in a variety of capacities over the years – REU student, field technician, postdoctoral researcher, and data manager – so I understand LTER science well and appreciate the diverse contributions that LTER network participants make. In my initial year as the IM for Jornada Basin LTER (JRN), I've gained valuable insight into managing data for an active research community with a long history, and we are now making significant improvements in the quality and efficiency of our IM system. I'm also gently pushing JRN research in a more open and collaborative direction by developing open tools and workflows, increasing the involvement of PIs and students in IM, and increasing our interaction with LTER and other research networks at the Jornada Basin. If elected to IM Exec, my priorities would reflect many of these themes. I plan to 1) contribute to development of software tools, documentation, and best-practices to help data managers build and maintain effective, efficient IM systems, 2) push forward initiatives that will bring LTER IMs, researchers, and students together to create quality research and open data products (synthesis projects, data management workshops, data papers, etc.), and 3) raise the visibility of LTER data generally and ensure interoperability and collaboration with other data collection networks and repositories. More specifically, collaborative writing of the network's "EML Best Practices" documents and transitioning ClimHy and LTER site meteorology data to the CUAHSI

HydroServer repository are examples of high priority activities that IM Exec should facilitate over the coming year or so.

2. Statement on nomination to IMC Representative to the LTER Executive Board (EB Rep.)

Renée Brown, 7 July 2020

I am delighted to have this opportunity to run for the important position of the IMC representative to the LTER Executive Board (i.e., EB Rep). Dan Bahauddin has done an excellent job representing us in this role, and I would be pleased to follow in his footsteps. If elected, I would continue to serve as a voting member of IM Exec for another year, after which I'd remain on IM Exec as an ex-officio non-voting member through the end of my term as EB Rep. As many of you know, I have been involved with the LTER Network since 2002. I was system administrator and lead sensor network technician at SEV for 15 years, during which I was inspired to pursue undergraduate and graduate degrees in ecology. In 2017, I became Information Manager at MCM, and I continue to maintain several active research projects at SEV. My experiences as a technician, and later, as an independent researcher, have significantly influenced my approach to IM. Similarly, these past few years as an IM have had a tremendous impact on how I think about ecological research data management. I believe my collective experiences put me in a good position to represent the IMC's interests on the EB, and if elected, I would also look forward to working on efforts to improve communication and engagement between our scientific and IM communities.

Announcement of election results

Elections resulted in the following:

- Greg Maurer (JRN) was elected as IM Exec member replacing Jason Downing (BNZ) beginning August 2020.
- Renée Brown (MCM) was elected as EB rep beginning in May 2021.

Databits proposal and discussion

A new proposal to continue the [Databits](#) publication was provided to the LTER IMC in advance of the meeting (see Appendix A), and during the meeting the floor was opened for discussion. There was very little discussion. Volunteers were asked to serve as editors for this next year. John Porter agreed to serve on a 1-year term. An Nguyen agreed to serve, but was unsure whether she could commit to a full 2-year term.

IMKE Breakout group activity

Background

The initial series of IM Knowledge Exchange (IMKE) virtual water coolers seem to have been a success in sharing skills and tools with our group. In looking toward the next year and the continued development of this exchange series, we would like to facilitate small group discussions to provide guidance as we develop the next set of installments.

There are vast and diverse pools of knowledge and experience within this group. Our water coolers provide an opportunity for all of us to learn and to grow, and to foster the strong sense of community within our group that has contributed to LTER IM leadership in the field of ecological informatics.

Previous IMKE virtual water coolers (2019-2020)

- #1 - Project Management (Aug 19, 2019)
- #2 - Data Attribution and Ownership (Dec 16, 2019)
- #3 - Preparing for Site Reviews (Feb 10, 2020)
- #4 - Site Website Systems (Apr 13, 2020)
- #5 - Git Usage Showcase (July 13, 2020)

Activity plan and group discussion questions

The purpose of this activity was to discuss past IMKE Virtual Water Cooler sessions, then develop topic ideas and identify potential contributors for IMKE water coolers in the upcoming year. Participating IMs were assigned randomly to four groups and sent into Zoom breakout rooms. In the breakout groups IMs were tasked with creating a Google doc, assigning a recorder to transcribe the discussion, and then discussing the following questions regarding the IMKE Virtual Water Coolers.

- What was/were the most useful IMKE, or otherwise (e.g., synthesis working group presentations) to you in the last year and why?
- What topics would you find useful to cover in the next year?
- Is there a skill or tool that you use at your site that could be useful to other IMs?
- Could we use the water coolers to work toward some sort of development goal, like what, what would that look like?
- With less travel and even fewer than our already-limited number of opportunities to meet in-person, how can we better leverage our remote meetings to maintain and foster the cohesiveness of the community?

Breakout activity summary

After the breakout group activity, IM Exec was charged with reading the four breakout group documents to identify important takeaways from those groups. IM Exec then collaboratively

produced a summary of those findings for use in planning future IMC virtual water cooler sessions. This executive summary and the individual breakout group reports are included in Appendix B.

A few themes emerged when IM Exec summarized the breakout group notes. First, knowing what other IMs are doing at their LTER site, particularly in terms of information management tools and practices, is very valuable. So, formulating VWCs around topics like EML generation and website administration will continue to be important, and there is interest in greater opportunity for informal discussion time during water coolers to allow new ideas, relationships, and collaborations to arise. Second, since not all IMKE sessions are relevant to every site at a given time (site review preparation, for instance), organizing the information presented in water coolers for future access should be a priority. Some IMs expressed frustration at being unable to locate past information that could be relevant to IM activity at their site in the present. Finally, there was interest in how data management and publishing is done outside of the LTER Network and EDI environment that IMs are most familiar with. Researching the practices of, and inviting speakers from, other research networks (CZO, LTAR), agencies (USGS, NCEI), or data repositories (ADC, DataOne, BCO-DMO) would be of general interest.

Appendix A: Databits proposal

Databits Proposal

August 7, 2020

Since at least 1989, the LTER Information Management community has published [Databits](#), a newsletter dedicated to disseminating information relevant to data management. Databits topics have included GRID computing, applications of GIS, information management in the (then new) National Ecological Observatory Network, web development, vocabularies, partnerships, and international collaborations -- as well as many reviews of software, languages and resources, and site updates (SiteBytes).

Beginning in the fall of 2020, the IM Executive Committee is proposing a new process for editing and distributing Databits. One goal of changing the process is to produce a resource that will be more easily shareable, as well as interesting and valuable for researchers and students in addition to information managers.

Traditionally, the role of the LTER Databits editors has been to decide on a theme, solicit ideas and commitments for articles, follow up with authors to ensure that drafts are submitted on time, and lay out and edit a final publication -- first in print, more recently as a PDF file. Two editors served staggered two-year terms, which allowed new editors the opportunity to learn the ropes alongside an experienced editor. New issues were published approximately twice per year.

The new model proposes to distribute articles as both individual articles on either the LTER or EDI website depending on relevance, and collections of articles that can be referenced as issues.

If IMC agrees, the new editors will:

1. Develop themes. Meeting together with IM Exec, the new editors will identify timely themes related to the questions, concerns, and opportunities that are upcoming for the Network.
2. Identify articles and authors. At the theme meeting, editors and IM Exec will brainstorm specific story ideas and potential authors and discuss appropriate tagging and search optimization.
3. The editors will approach potential authors and discuss article content, length, potential accompanying graphics, and deadlines. Additionally, potential authors would be informed of other articles envisioned for the issue, so that the articles slated for a given issue form a cohesive whole. They will also field inquiries from volunteer authors with ideas for articles and issue themes.

4. Editors will remind authors of deadlines, track submissions to each issue, and collate articles in one location.
5. Editors will work with authors to ensure that each completed article is clean, accurate, interesting (for the intended audience), readable, and includes an accompanying graphic with caption and credit information, if appropriate. Articles must provide minimum context so that a PI or graduate student could decide whether they want to learn more about the topic.
6. Individual articles will be published as they are completed, on the LTER Network website (<https://lternet.edu>). The Environmental Data Initiative website will also publish articles that are relevant for their audience (<https://environmentaldatainitiative.org/>). Publication is the responsibility of the web editors of the respective websites (Marty Downs/Kristen Weiss and Susanne Grossman-Clarke). Web editors may request additional edits based on the needs and audiences of their websites.
7. When an issue is completed, the Databits editors will alert the LTER Network Office so that articles included in that issue will be tagged to appear together as an issue. The link to the issue will be highlighted on the [Information Management webpage](#), distributed to im@lternet.edu, and promoted on social media.
8. Terms of Databits editors will remain the same (two years in staggered rotations), which will require one editor elected in 2020 to stand for a 1-year term and one for a 2-year term.

We feel this approach has several benefits. By developing themes and article ideas together with the IM Executive Committee, even editors who are new to the network will be able to draw on the institutional knowledge and connections of several experienced information managers. By publishing stories individually, as they are completed, it will be possible to provide links to individual stories and to do targeted outreach around them. As individual stories, they can be tagged in other appropriate categories, which we hope will facilitate more interaction among IMs, PIs, and graduate students across the LTER Network.

Appendix B: IM Exec and breakout group reports from the IMKE activity

IM Exec breakout summary

2020 LTER IMC Annual Meeting IM Knowledge Exchange (IMKE) Breakout Group Summaries

Charge to IMEXEC: Read through the 4 breakout group documents and record here what you see as the highlights or important takeaways from those groups.

Due Date: Before our next meeting on September 16, 2020

Thoughts on useful IMKE and other VWC sessions/formats?:

[Tim]: I get the impression that knowing what other IMs are doing is very valuable. One was surprised and exhilarated that another was using Drupal. One thought learning how sites handle websites was useful. Continuing to formulate VWCs around these topics, such as how sites generate EML, should be a major part of our VWC plan.

[Renée]: All IMKEs useful, although some more than others depending on where one is at with a particular technology or time in their site. Not every VWC is going to be relevant to every IM, but that is OKAY. Some comments about how the recordings / IM information are difficult to locate, including “How can we effectively share code and tools? Currently helter-skelter in github or elsewhere.”

[Greg]: A theme that appeared in many of the breakouts was interest in how data management and publishing is done outside the LTER IM and EDI sphere. Several groups discussed inviting speakers from, or “studying” the practices of, other research networks (CZO, LTAR), agencies (USDA, NCEI), or data repositories (ADC, DataOne, BCO-DMO). Inviting representatives from ESIP working groups might also be useful here.

Topic Suggestions:

- Can each meeting include a breakout for a few minutes so that we can have some informal communication?
- **SiteBytes:** Brief highlights of two or three sites at the beginning of each VWC. Rotate through every site 1x/year. Community building. Puts a person to a name/site. Would be different than Databits SiteBytes, which would be written to the particular issue’s theme.
 - How do we foster the cohesiveness of the community? Hard to really connect with people you don’t already know virtually.
- **IMKE Topics (~4/year)**
 - EML: How to upgrade to 2.2

- EML: How do sites make it (e.g., Li's Excel-to-EML tool)
- FAIR: How can we benchmark whether our data is FAIR, and how do our governing bodies (like NCEAS) measure/report this?
 - [Renée]: is this an IMKE topic or should this be an invited speaker, like Shelly Stall from AGU
 - [Greg]: Either, or both in one meeting (if planned well) would be beneficial
- Field data apps - what are you creating and using to digitize data collection in the field
- Bring in outside speakers like reps from other data repositories
- **Working Group Updates (1-2/year)**
 - E.g, non-tabular data working group (when they are farther along).
 - There is particular interest in the “data in other repositories” issue that this group is working on, and there may be an opportunity to put together a session covering best practices when your site's data is published in other repositories (many LTER sites collaborate/publish in other repositories). It may also be useful to invite representatives from other repositories as a part of this.
- **Invited Speakers (~2/year)**
 - DataONE, ESIP, etc.
 - Synthesis Working Group leaders
 - These were not viewed as useful by some IMs. But IMs who are also scientists found them very interesting. Important to hear perspectives from researchers on how they use the data, etc.
- **Preparing for Site Reviews (~1/year) (very popular), renewal proposals, annual reports:**
 - These are most useful for sites up for review, but archives of these VWC discussions, and any other up-to-date information on site reviews, would be something IMs would likely refer back to (should occur every 1-3 years as things change)
- **Miscellaneous**
 - **Education/training** for new students & investigators
 - Some IMs/EDI are Software Carpentry instructors...

Hackathons/Workshops/Working Meetings (i.e., longer than VWC):

There seems to be widespread interest in organizing working meetings and educational meetings. These don't fit under the purview of the monthly VWCs and would be in a longer format. Some might be hackathons, some could be demonstrations & Q/A sessions, some could be informal workshops/classes on technical topics relevant to IMs.

Suggested topics:

- Git/GitHub

- The VWC on this topic was helpful, but some still had questions. Teaching Git/GitHub with in a small group, hands-on session would be interesting to some IMs
- How to solve a particular problem (e.g., how to use pasta web services)
- ClimDB: Implementing Part B at sites
- Non-tab WG a good example of a task-focused group working on a product

Spontaneous:

There's a desire to have informal gatherings of IMs. How, and how often? Slack? Hangouts? Open zoom rooms to bounce ideas off of each other?

Issues or concerns to address:

There was some frustration concerning the digital landscape of the IMC. Participants are finding it difficult to identify where they should look for resources: Google Drive, GitHub, LNO website. This is compounded as many resources now reside with EDI, requiring yet another location that must be considered. Participants would like to see a consistent, streamlined digital space.

Separate but related to concerns over the fractured digital landscape, participants are concerned about having to learn new tools (GitHub, Slack), pointing out that they already have tools at their sites that they need to use that may be different from what the IMC is using.

Individual IMKE breakout group reports

Group 1

2020 LTER IMC Annual Meeting IM Knowledge Exchange (IMKE) Breakout Group #1

Stevan Earl, Kristin Vanderbilt, Vicky Rowley, Kris Hall, Hap Garrit, Mary Martin

- technology has improved greatly over the years
- newer technology may afford more opportunities; ESIP was run very well and had great features that allowed for things like quick chats; missing spontaneity
- people are more comfortable with the vwc since we have been doing it awhile
- Vicky also misses spontaneity, perhaps we could use Slack and Hangouts more; does not feel like she can just throw things out there.
- Hap would like to settle on fewer platforms and one that we could all use and band around.
- Workflow from Google to Git is confusing (in the context of nontabular).
- Kristin indicated that we did not always have a VTC every month.

- By doing it every month at the same time folks bookmark that time, could lose that if not doing one every month - are there better ways to schedule things? Vicky circling back to spontaneity.
- Focus used to be around working groups that required the monthly interaction but we do not have that as much these days.
- What do we want to have happen at these meetings, needs to be more than just chatting.
- Kris has enjoyed the meetings, some more than others, maybe we do not need to have them if not a good topic - generally interesting and helpful, good to see others. SEV can be isolating so the water coolers are nice for connecting.
- Stevan asked if water coolers could be modeled after the EDI office hours if there are not strong topics, more of a drop-in thing? Kristin felt something like that could work.
- But Hap noted that sites are doing things with different tools so it could be hard to identify common themes.
- Wait, you use Drupal? What a discovery in this meeting! One of the intangibles of these meetings.
- These could be a tool for working on projects as per the past but what projects, especially without funding?
- Mary liked the IMKE, and learned a lot, some things that were a surprise to learn. Serendipity again.

Group 2

2020 LTER IMC Annual Meeting IM Knowledge Exchange (IMKE) Breakout Group #2

Greg Maurer, Sarah Elmendorf, Corinna Gries, Miguel Leon, Suzanne Remillard, Chris Turner, M. Gastil-Buhl

Prompt questions:

- What was/were the most useful IMKE, or otherwise (e.g., synthesis working group presentations) to you in the last year and why?
 - Site review IMKE was useful, but it may depend on where a particular site is in the review cycle. This will be one to refer back to.
 - Git IMKE was useful, but there should have been more time for questions.
- What topics would you find useful to cover in the next year?
 - Non-tabular WG report and demonstration would be useful when that work is closer to complete.
 - Data in other repositories which may be useful to sites using USFS/USDA/BCO-DMO

- Perhaps we should invite reps from other repositories to speak with the IMC - could be grounds for collaboration, how to connect between repositories, how to standardize and
 - What happened to CZO - should we be collaborating/coordinating with data management at the old and/or new CZO sites (their data should be on HydroShare)
- Is there a skill or tool that you use at your site that could be useful to other IMs?
 - Git/Github - could we make some hands-on tutorials or connect IMs into groups to cooperatively learn about particular project-management tasks using these tools
 - Small-group or 1 on 1 technical instruction
 - Software Carpentry lessons could be a good teaching tool - maybe we can create an IM group for these.
 - Mark Servilla and Renee Brown are Carpentries instructors; Stace @ NES is coordinator for Carpentries at her institution
 - .. and Liz Dobbins at NGA (Axiom/UAF), and Adrienne Canino at Axiom
 - Axiom (NGA LTER) works with [NCEI](#) commonly and might be able to ~~provide some expertise~~ share their experience with the IMC. (NCEI does not require using EML.)
 - FAIR data community knowledge exchange - how can we benchmark whether our data is FAIR (how do we show our funding bodies how FAIR we are with metrics?).
 - Could NCEAS show us how they measure/report data sharing/access
 - [CoreTrustSeal](#) - is it worth it, is it useful
- Could we use the water coolers to work toward some sort of development goal, like what, what would that look like?
 - No responses
- With less travel and even fewer than our already-limited number of opportunities to meet in-person, how can we better leverage our remote meetings to maintain and foster the cohesiveness of the community?
 - No responses
- Summary:
 - a. IMKEs were useful though in some cases having a more thorough how-to session for certain topics would be helpful
 - b. Bringing outside people in to speak to IMC
 - i. Representatives from other repositories - how do we collaborate and connect data in disparate repositories.
 - ii. Software Carpentries
 - iii. FAIR data

iv. ESIP clusters

Group 3

**2020 LTER IMC Annual Meeting
IM Knowledge Exchange (IMKE) Breakout Group #3**

Group Members: Dan B. (moderator), Jason D., Adam S., Yang X., Emery B., An N.

Previous Episodes (2019-2020):

#1 - Project Management (Aug 19, 2019)

#2 - Data Attribution and Ownership (Dec 16, 2019)

#3 - Preparing for Site Reviews (Feb 10, 2020)

#4 - Site Website Systems (Apr 13, 2020)

#5 - Git Usage Showcase (July 13, 2020)

Group Questions for Discussion:

- What was/were the most useful IMKE, or otherwise (e.g., synthesis working group presentations) to you in the last year and why?
 - Useful to see other systems in use and glean new tools or techniques
 - Promotes proactiveness
 - Site websites was particularly helpful +2
 - Site review discussion was also really helpful
 - Git not so useful for some sites
 - All meeting are useful and this is a good way to see what others are doing
- What topics would you find useful to cover in the next year?
 - Cover site review topic annually (how to be done virtually?)
 - Excel to EML tool +1
 - How different sites are generating EML
 - Field data apps - what are you creating and using to digitize data collection in the field
- Is there a skill or tool that you use at your site that could be useful to other IMs?
 - Generating field data applications
- Could we use the water coolers to work toward some sort of development goal, like what, what would that look like?
 - Working group stimulation
 - Metadata standards and convergence and interoperability
 - Executing the new CLIMDB plan - site work for individual data mappings

- With less travel and even fewer than our already-limited number of opportunities to meet in-person, how can we better leverage our remote meetings to maintain and foster the cohesiveness of the community?
 - Use breakout groups more to improve participation with smaller groups
 - Informal chats in breakout groups

Group 4

2020 LTER IMC Annual Meeting IM Knowledge Exchange (IMKE) Breakout Group #4

Tim Whiteaker, John Porter, Renée Brown, Mark Gahler, Stace Beaulieu, Li Kui, Jim Laundre

What was/were the most useful IMKE, or otherwise (e.g., synthesis working group presentations) to you in the last year and why?

- Data attribution & ownership useful because a direct outcome came out of it.
- Got a lot out of all of the IMKE sessions. +2
- But, hard to find stuff... don't know where to access the videos, need to improve.
- Did not get as much out of synthesis working group presentation because don't do this on a daily basis as an IM. But cool to see scientist's perspective. Good idea maybe 1x/year. Other people found useful. Good to see interface between the science and the data. For IMs that are also scientists, or data analysts (there are several of us), found useful.
- Liked preparing for the site review (couple people like this one best) because have a site review coming up. Need to repeat this one again.

What topics would you find useful to cover in the next year?

- want to hear more from newer IMs.
- like SiteBytes. Could work well for VWC. 1-2 per month. +2
- also, upgrading EML. Timeframe, challenges. What can we do as a group together to get to 2.2?
- also, do all datasets need to go to 2.2?
- can we develop tools that will upgrade existing datasets to 2.2?
- education for new investigators & students on data/metadata +2 (e.g., ESIP Session 'What I wish I learned about data management in grad school')
- Working group developments
- E.g., Dealing with Non-EDI Data (Non-tabular working group)
- What content do you put in the annual report? What should go into NSF reports? Can compare posted reports as data....
- Related, what do you put in a renewal proposal? Data Management Plans as well as other proposal content related to IM.

- How can we effectively share code and tools? Currently helter-skelter in github or elsewhere.
- Other non-EDI repository standards, e.g ISO standard accepted by ADC.

Is there a skill or tool that you use at your site that could be useful to other IMs?

- Metabase + MetaEgress
- Static website development
- GitHub
- Excel-to-EML
- Working with metadata in R
- Drupal
- Databases
- R Shiny

Could we use the water coolers to work toward some sort of development goal, like what, what would that look like?

- Virtual hack-a-thons
- Open zoom rooms to bounce ideas off of each other?
- Working tutorials: e.g., how to use github, how to use pasta web services, how to solve a particular problem
- Non-Tabular working group a good example of a task-focused group working on document

With less travel and even fewer than our already-limited number of opportunities to meet in-person, how can we better leverage our remote meetings to maintain and foster the cohesiveness of the community?

- how do we foster the cohesiveness of the community? Hard to really connect with people you don't already know virtually.
- Can each meeting include a breakout for a few minutes so that we can have some informal communication?

The charge is to develop topic ideas and associate potential contributors.

- SiteBytes: rotate through every site 1x/year
- EML 2.2: How to upgrade to it
- Education for new students & investigators:
- Virtual hack-a-thon: John, Stace