

**Report for Long Term Ecological Research Site Communicator Training Workshop  
Held June 2-5, 2013 in Albuquerque New Mexico at the LTER Network Office at  
the University of New Mexico**

**Lead Organizer: Susan Dailey**

**Co- Organizers: Julie Doll, Clarisse, Hart, Marcia Nation**

**List of participants:**

**Workshop Participants**

<b>Site Science Communicators</b>	
AND	Lina DiGregorio
AND	Michael Nelson
BES	Lori Quillen
BNZ	Marie Thoms
CAP	Marcia Nation (co-organizer)
CDR	Mary Spivey
CWT	Brian Burke
FCE	David Lagomasino
GCE	Janice Flory
HFR	Clarisse Hart (co-organizer)
JRN	Jin Yao
KBS	Julie Doll (co-organizer)
KNZ	John Briggs
NWT	Chris Ray
NTL	Adam Hinterthuer (Skyping)
NTL	Carol Warden
SBC	Kristin Evans
SEV	Amaris Swann
VCR	Arthur Schwarzschild

**LTER Network Representatives**

Ross Boucek, LTER Graduate Student Committee

Nich Oehm, Co-chair, LTER Education Committee

McOwiti Thomas, Public Information Officer, LNO (co-organizer)

**Resource People**

Dan Childers, CAP LTER co-PI

Susan Dailey, lead organizer and trainer

Steve Davis, Everglades Foundation

Cheryl Dybas, National Science Foundation, Office of Legislative and Public Affairs

Rebecca Gill, Web Savvy Marketing (Skyping)

Jay Han, Freelance graphic designer

Richard Kern, Professional videographer, Odyssey Earth

## **Introduction: Rationale and Background**

Science communication is central to the LTER Network's mission to "increase understanding of Earth's ecological systems towards providing the scientific community, policy makers, and society with the knowledge and predictive understanding necessary to conserve, protect, and manage Earth's ecosystems, their biodiversity, and the services they provide." While the LTER Network and its associated sites have long engaged in science communication, new modes of electronic communication and the call for greater outreach have presented challenges to LTER sites that have focused mostly on traditional scientist to scientist types of communication with much less attention to communicating outside of the scientific community. However, a 2009 survey of participants in the Network suggested considerable interest in broadening communication efforts to include a variety of external audiences, such as decision makers, community stakeholder groups, educators, and the media. At the same time, there has been a gap at the site level between the desire to engage in more science communication and the capacity to take on this new set of work. For example, a survey of site lead PIs found that in most cases the lead PI and/or co-PIs write content for the LTER site's website; few sites had dedicated communication or outreach staff to take on this task or any additional science communication work.

The 2010 LTER Strategic Communication Plan outlines a set of initiatives to enable the Network to take on the challenge of science communication in the 21<sup>st</sup> century. One objective of this plan is to build capacity across the Network to engage target audiences through communication activities. The LTER Communication Committee has worked with LTER sites to identify site science communicators that can contribute to science communication at the Network level vis-à-vis the LTER Network Newsletter and website as well as communication at the site level. At the 2012 LTER All Scientists Meeting, these site science communicators were invited to a meeting to discuss moving forward as a group within the Network. This meeting and related workshops on science communication at the ASM indicated great interest in communication capacity building. A sub-committee of the LTER Communication Committee (Susan Dailey, Julie Doll, Clarisse Hart, Marcia Nation, and McOwiti Thomas) circulated a survey to lead PIs to test the waters for holding a workshop on science communication for site science communicators. Nineteen sites responded with names of individuals who might attend such a workshop. Sites indicated an interest in learning about designing materials for decision makers, social media, and communicating effectively through their websites. Using this information, the sub-committee minus McOwiti Thomas applied for funding from the LTER Network Office to hold a three-day training workshop. The proposal was funded, and the LTER Site Science Communication Workshop was held June 2-4, 2013 in Albuquerque, New Mexico.

## **Description of Workshop Activities**

Day 1: All workshop participants were asked to travel to Albuquerque and to arrive by the afternoon to register. Site Communicators and trainers met at 5 pm at the Hotel

Andaluz and introductions took place. Participants dined together and discussed communication strategies at their sites in three groups. Participants were briefed and instructed to meet at 7:30 AM the following morning for a three-mile walk to the training facility at the LNO training facility.

Day 2 and 3 of the workshop were planned and structured to encompass both a morning and afternoon session. Day Two continued until 5 pm because we worked in breakout groups as described in the notes but not included in the agenda (Appendix 1 A).

For a detailed chronological listing of our activities for each day please see our agenda- Appendix 1 A.

#### Day 2: Morning Session:

For detailed account of our workshop activities please see both the Agenda Appendix 1 A and see notes by Clarisse Hart Appendix 1 B.

#### Day 2: Afternoon Session

We heard presentations from Clarisse Hart and Julie Doll for their successful strategies in communicating their sites' LTER research:

"Using communications to further education goals" Clarisse Hart

HFR LTER

"Using dialogue to engage stakeholders" Julie Doll

Next, Social Media Boot Camp was administered to all workshop participants through a rigorous interactive presentation with Rebecca Gill. Following the training, site communicators signed up for 30-minute site-specific training periods. All of the evaluations were completed in the week following the workshop through scheduling organized by Julie Doll (See Appendix 2 X). During these individualized social media trainings Rebecca provided each of the site communicators with tools to increase their site's website pages visibility through social media.

After the trainings Rebecca provided these follow-up tips:

"I tried to encourage people to utilize Google+, set up Google authorship, and use your #LTER hashtag on Twitter. I also pushed Google+ communities."

Rebecca also recommended using Google metrics, an online service to report site and page visits and identify audiences through each of the social media networks including Facebook, Twitter, Pinterest, and Google groups.

Our social media training was followed by Steve Davis leading through his third training module (Appendix 1 D).

The graphics and videos that Steve showed us led to a lively discussion lead by Robert Waide and Scott Collins from the LTER Network Offices. Scott recommended to each of us that we strive to "Be Known Locally" and both expressed that united efforts of this newly formed LTER communication group are useful for conveying our LTER research. A discussion of the LTER efforts in the new Ecotrends book was generated and recommended as a good example of LTER efforts to showcase.

### Day 3: Morning Session:

Steve Davis led us in his final training module for the workshop (Appendix 1 D ).

Richard Kern then lead the group through cooperative video productions of LTER research and explained the process for involving researchers in film productions. Next, Clarisse Hart lead the group in a media messaging activity and site communicators worked in pairs for the exercise described below.

#### MEDIA MESSAGING ACTIVITY (1 hr)

Participants worked in pairs. Each pair was given a scientific paper to read, then asked to:

- Pick 3 main story points you'd include in a blog or news article.
- Draft a headline and lede for the story.
- Decide: who would you get quotes from?
- Envision a photo or piece of media to accompany the text.

A press packet corresponding to the scientific paper was distributed to each pair. The packet included the original university press release announcing the paper's findings, and subsequent stories printed by the media. Pairs were asked to:

- Watch the evolution from scientific paper title to press release to headline.
- Track the dates on the publications: how long did it take news to spread?
- Note:
  - What ledes were used?
  - What image led the story?
  - What story points were chosen?
  - Who was interviewed?

For the materials themselves, see: [Media Messaging Activity Materials](#).

### Day 3: Afternoon Session:

1 pm to 2:30 pm we met via teleconference/Polycomm with Cheryl Dybas from the National Science Foundation to discuss how LTER discovery articles and press releases are developed. Cheryl explained current NSF requirements for formatting for this process and discussed what is and is not a news story with examples provided by the site communicators.

Marcia Nation then lead the workshop participants in a triangle, square circle activity summarizing each on giant Post It Notes- (See Appendix 1 E). Following this activity we met in breakout groups in each of the LTER training classrooms for two breakout sessions. The breakout groups included: "Becoming Known Locally", Video Production", "Creating Nuggets through synthesis and distillation", and "Evaluative Exercises".

Evaluations of the workshop were collected from the workshop participants (See Appendix 2 X).

The workshop adjourned at 5:30 pm June 4, 2013.

Day 4 of the workshop was a travel day for workshop participants.

### **Workshop Products/Outputs:**

Several products have emerged from the workshop throughout the planning, planning implementation process as well during and after the workshop. Here our outcomes and products to date are reported into two categories:

#### **Products and site communication implementation developed during the workshop (and process of workshop development):**

First, as a network of LTER sites at the LTER network headquarters, we have now met and trained with site communicators. This was both our first meeting and first training as site communicators. These first tangible products are mailing lists and solid contacts for communicating research among, between and beyond the individual LTER sites. Site communicators were provided with a backbone for developing their site communication plans and examples of how to best implement their communication strategies to each of the targeted audiences (Appendix 2 C, D, and G)

The second of these in-house workshop products is a list of successful site strategies (Appendix 2 B) that site communicators have offered as models other site communicators.

The third product developed during the workshop was a table created across two blackboards where site communicators listed their strengths by site (Appendix 2 A)

#### **Products, outcomes, and site communication implementation developed after the workshop:**

LTER Site Communicator Google Group- Site communicators have been using the Lter site communicator google group that was initiated by David Lagomasino during the workshop. Since the workshop, site communicators have engaged in 10 different posts and conversations for LTER science communication ranging from posts about current science communication training opportunities to media releases.

Evaluations from the workshop revealed a need for more training, workshops and working groups for LTER science communication (Appendix 2 X)

2013 ESA Meeting presentation on LTER Science Communication by Clarisse Hart et al.

Two news stories were published in the LNO Network News, one before the workshop and one after the workshop, summarizing the highlights of the workshop.

LTER Education and Outreach implementation of the triangle, square, circle technique for communicating LTER research at two of the LTER sites at the workshop.

FCE LTER Synthesis Workshop June 24, 25 2013- Presentation by Dan Childers with LTER Workshop materials by Steve Davis et al.

A resource handbook spanning media from movies to printed materials designed for and by LTER Science Communicators (Appendix 2 E).

## Appendix 1 A



# ***The Long Term Ecological Research Network***

## **LTER Site Communicator Training Workshop**

**June 2-5 2013**

Albuquerque, New Mexico

### **Working Agenda:**

Please note: Working agenda times are shown in Mountain Standard Time (MST)

### **Sunday June 2, 2013:**

Arrival and check in at the Andaluz Hotel in Albuquerque, NM

5:00 pm WELCOME Reception at Andaluz Hotel Valencia Room

Opening Remarks and agenda briefing- Susan Dailey FCE LTER- Lead Organizer

Introduction activities; workshop digital and print materials distribution

6:30 pm Dinner and retire

### **Monday June 3, 2013:**

**A.M. Facilitator Susan Dailey; Notes: Co-Organizer Clarisse Hart**

**P.M. Facilitator Julie Doll; Notes: Marcia Nation**

Walk or use Rapid Ride to training facilities from Hotel (3 miles walking distance)

8:00 a.m.-Breakfast at training facility

8:30 a.m.-Opening remarks and Your Site Communication Plan– Dailey  
 8:40 a.m.-“LTER Strategic Communication Plan Marcia Nation”, CAP LTER  
 Project manager and Co-Chair LTER Communications Committee  
 8:50 a.m.- Training Steve Davis, Everglades Foundation, and Dailey  
 Part a: Audience ID (progressive group activity) and Distillation of your message  
 to address strategic goals and objectives-Dailey  
 Developing messaging points by knowing your audience  
 - *Session overview:* This session will involve discussion of considerations and  
 means for developing key messaging points for LTER sites.  
 9:20 a.m. With student strategies- Graduate Student representative Ross Boucek  
  
 9:30 a.m. *Practical activity:* Leader: Davis Site representatives will develop one or more  
 "nuggets" for their respective site. [For “nugget”, I draw upon more recent usage  
 of the term, i.e., a compact, valuable unit of information.  
 10:00 a.m.: Group discussion  
 10:30 a.m.- Break  
 10:45 a.m.-“LTER Network Communication - How it works and how sites may  
 contribute” mcOwiti Thomas, LTER Network Office  
 10:50 a.m. Group Activity- Leader Hart- Messaging for the Media  
 12:00 p.m. – Lunch  
 1:00 p.m.- Social Media Boot Camp - Rebecca Gill  
 3:00 p.m.- Social Media and Website Consultation- Doll  
 3:05 p.m.- Tools of the Trade and Modes of Message Delivery by Davis  
 - *Session overview:* This session will expose the audience to examples of  
 different modes of communication (fact sheets, illustrations, video/PSAs, briefing  
 materials) used in Everglades restoration education and advocacy. My hope is  
 that we will critique approaches presented and discuss novel tools and approaches  
 employed by folks at other sites.  
 - *Practical activity:* Sharing and discussing examples from other sites.  
 4:00 p.m. - Break  
 4:10 p.m. - “Using communications to further education goals” Clarisse Hart  
 HFR LTER  
 4:20 p.m. - “Using dialogue to engage stakeholders” Julie Doll KBS LTER  
 4:30 p.m. - Group discussion about site communication strategies  
 5:00 p.m. - Group discussion- Co-moderators Dailey and Dan Childers  
 5:30 p.m. – Adjourn

## **Tuesday June 4:**

**A.M. Facilitator a.m. Hart; Notes: Doll**

**P.M. Facilitator p.m. Nation; Notes: Dailey**

Walk or use Rapid Ride to training facilities from Hotel (3 miles walking distance)

8:00 a.m. Breakfast at Training Facility

Co-organizers and Trainers meet

Participants work on worksheet packets in groups

9 :00 a.m.- Meet at the Roundtable for LTER Communications Briefing- Thomas, Dailey, Nation, Hart, Doll, Group Discussion and Activity

10:00 a.m.-Training Module 3 Davis

- . Developing effective graphics and illustrations: from concept to final
- *Session overview:* This session will walk the participants through the iterative process of developing effective graphics, illustrations and animations.
- *Practical activity:* Each site representative will develop a concept or plan for an illustration

11:30 a.m.-LTER strategies in on the big screen: Presentation “Odyssey Earth and LTER”- Richard Kern

12:00 p.m. Group discussion and site strategies

12:30 p.m. – Lunch at Training Facility and Presentation “Your Site Calling card” Dailey, Oehm, Han

1:00 p.m.- Cheryl Dybas- “NSF press releases and LTER breakthroughs”

1:30 p.m. – Group Activities for Site Communication Plan Development and Best Practices sharing

3:00 p.m. - Break

3:15 p.m. – Wrap up activities & next steps, led by Dailey, Nation, Hart, Doll

4:00 p.m. - Workshop adjourned

## Appendix 1 B

### LTER Communications Workshop Monday, June 3, 2013 - MORNING Notes by Clarisse Hart

#### **Speaker SUSAN DAILEY – *Your Strategic Communication Plan***

QUESTION: Has anyone ever heard of LTER?

- It was touted at a recent USDA meeting (John Briggs)
- Putting LTER aside for a moment, NSF to some extent is not even a known entity (Janice).

IDEA: Could LTER start a really slick magazine (Richard K)?

IDEA: Is there a place with the top 5-10 findings of LTER (Lori)? These could rotate over time, so there's equity among sites. Or there could be 5 general areas of inquiry that we promote (B Waide).

#### **Speaker MARCIA NATION – *Strategic Communication Plan***

IDEA: In strategic comm plan, should the term “decision makers” in the goal be made more specific?

CLARIFICATION: The “media” mentioned in the strategic comm plan goals: that includes both the medium writ large (which could include LTER making its own media by having, say, a radio station) and also the practice of working through journalists to reach the public.

NOTE: LTER annual report has been very well received.

ACTION STEP: LTER grad student blog – all sites should encourage their reps to contribute.

ACTION STEP: Let Susan know if you're on Twitter. Let's make an effort to put all of our social media + blogs together during this workshop. A list of these should go on the LTER website.

IDEA: Site Facebook pages should include LTER in the name (David L)

### **Speaker STEVE DAVIS See Also Appendix 1 D**

Communications products he admires:

Linking to policy: Wildlands and Woodlands from the Harvard Forest

Blogs:

- Grist
- Shaping Science Policy blog

Magazines

- National Geographic
- Science News
- Science

Graduate students seem to be much better at communicating than their predecessors.

The key to effective communication is knowing your audience.

We all consume information differently – some are better listeners, some prefer text or graphics.

RESOURCE: Steve recommends the book *Don't be Such a Scientist* by Randy Olson.

Science worth communicating:

- things people care about (food + water, property value, recreation, biodiversity)
- things people *should* care about

Important features of science communication:

- images of biodiversity
- analogies: you're basically building a wall, and you need to embellish it with the things people care about

IDEA: Consider, what makes your site special? Something economic, something recreational, something cultural/historical, something biodiversity-related?

*Everglades case study:*

--What makes it special: The Everglades are the water source for nearly 7 million Floridians. Florida is a swing state. South Florida is a popular destination.

--Historical context – maps of what the Everglades used to look like, compared to today.

- also see the [Manahatta Project](#) (an example from NYC)

--Money talks: "Everglades restoration: a 4-to-1 return on investment" [on property value, water supply, recreation, hunting and fishing].

--A May 2013 study prepared for the Bonefish and Tarpon Trust notes that each bonefish, in this catch-and-release fishery, is worth \$75,000.

--Celebrity involvement helps. The Everglades Foundation's annual gala event is the #2 gala in the Palm Beach area.

--Packaging matters: match your title to the audience.

RESOURCE: [Chesapeake Bay report card](#)

QUESTION: Who is funding these kinds of documents?

-At Harvard Forest, foundations funded the Wildlands and Woodlands report (Clarisse).

You want to maintain accuracy while not boring people (weigh errors of accuracy v. errors of boredom).

- avoid jargon & forget about uncertainty
- concision is important
- creativity is key
- hone the message: test and rework it

QUESTION: Are we stretching the truth if we say something “is” instead of “might be”? (Dan)

You still need to be accurate in light of your own knowledge and your colleagues’.

“If-then” statements can be just as strong as “is” comments. e.g. If x happens it could lead to y

QUESTION: How do we foster a feeling of benevolence among the scientific community? So we’re not attacking each other about public communications that don’t capture every single nuance. Scientists are all carrying this big backpack of context.

QUESTION: How do we deal with the fact that the press always wants to bring up both sides? (John)

It’s our job to say that these 2 sides are not equally represented in the community. And more scientists should be talking (Marie).

Re: Uncertainty - the public forgets how science works (Mary).

IDEA: LTER can show how long-term data helps the public understand uncertainty and change over time. (Marie)

Uncertainty in the fishery of the VA coast is a crucial part of the conversation. This is true for sea level rise, too (Art).

Sometimes uncertainty is the story (Brian). And it’s good for raising discussion; that creates a different type of engagement between the public and science.

Short of discovery, uncertainty is when science is most often brought up in the news (Steve).

Uncertainty also fosters collaboration between fields of science. Collaborative research is interesting to journalists (Susan).

Whenever someone brings in too much uncertainty in a press story, an editor is probably not going to publish it. They’ll say, wait until you’re sure (McOwiti).

If you can *encapsulate* uncertainty into a simple message, it’s accepted. But we get lost in the minutia (Steve).

People listen to the weather report, buy insurance – let’s give them a little more credit for being okay with uncertainty (Adam via skype).

Sometimes giving someone the worst-case-scenario allows them to prepare and saves them a lot of money in the long run, if the worst-case scenario comes true (Art).

In real estate and insurance and city planning – these folks are all thinking about climate change.

Ethics of science communication is worth a lot of attention. We need guidance for this kind of conversation – perhaps in the future (Michael).

U. of Georgia recently had a conference on ethics of science communication (Janice).

IDEA: It might be worth developing LTER/site talking points for some scientists when they do presentations, for those who don't deal with the public (Carol).

IDEA: At FCE, Dan Childers & Susan Dailey developed some slides that were usable by everyone at their site.

RESOURCES: [Michael Nelson's recent op-ed on the NYT](#), [AND newsletter](#)

*Back to Steve's presentation:*

Marketing v. Production -- we invest very little in the marketing of the products we create, compared to the film industry, which spends a ton of money on marketing.

CCE collaborates with its nearby aquarium, which has many messengers for getting the word out (Kristin). Harvard Forest did that with Wildlands and Woodlands. Their year-long roll-out/distribution plan for the project mainly relied on conferences and NGO partners to get the report out into the world (Clarisse).

### **Speaker ROSS BOUCEK, FCE graduate student**

One of his blog posts (need the link as a resource!)—which covers extreme ecology—has about 5,000 views. Readership on posts is highly variable and largely unpredictable. He does outside research to make these blogs interesting. Keywords may boost readership.

His diagrams were made in Powerpoint but really bring the messages home.

*Oikos* asked him to write a blog on his just-published paper, and it's since been featured on agency & org websites.

QUESTION: How do you advertise your blog? Do you have a sense of who's reading it? David from FCE has given students a toolkit for advertising their blog entries on social media. Facebook has been the most effective resource for that. Ross also writes to companies to ask if they want to post his blog entries.

Blogger analytics show the locations of where your bloggers are coming from.

The [Google AdWords keyword tool](#) will show you what people are searching for, and what keywords have low competition in Google (Clarisse).

Ross would like to increase the following of his blog.

IDEA: Cross-posting with other blogs. Do guest blogs – these blogs each have their own audience. (David)

IDEA: Put blog links in your email signature (Marie)

IDEA: Look up Adam's work on the NTL blog.

**Speaker McOWITI THOMAS – LTER Network-level communications See Also Appendix 1 C)**

The LNO website is a work in progress and they invite input. He asks, too, that sites contribute content for features.

ACTION STEP: Cheryl Dybas is usually in the loop for press release dissemination. Let's build adding McOwiti into the loop into our press strategy plans. (Lori)

IDEA: Coweeta recently interviewed PIs on their views of communications; they are currently reviewing the data. Brian suggests there's value in targeting faculty who already have tenure. But it seems people are motivated by a sense of professional responsibility. We want to make it extremely easy for them to act on those principles. Communication can also be used as an educational opportunity for their grad students.

IDEA: Thinking about education: with a small investment, you could create a program in site communications at the Network level or at individual sites (teaching assistantships, research assistantships from LTER funding – devote one to comm.) (Steve)

IDEA: Have grad student site reps send 5 or 6 story ideas to their PIs and have them pick one for them to write. (Ross)

ACTION STEP: McOwiti says he's game to work with grad students on this.

QUESTION: Do we now have a list of site communicators, from the survey that was sent out? (Nick)

Marcia says we got one list 2 years ago, and then again last fall we said we were doing this workshop and got a different list. There's an overlap there, but not a huge overlap.

The executive committee for education also recently gathered a list of reps, including communication contacts. Half the time, the comm person was the edu & outreach coordinator.

Traveling exhibit for LTER – currently a series of banners. They have done 13 sites so far. They try to make these regional to where the meeting is occurring.

IDEA: Make this exhibit more of a digital streaming exhibit, with a series of interactive screens (Susan)

ACTION STEP: Please make sure McOwiti has content for the LNO annual report each year. They are hoping to feature sites up for review, or sites presenting at the mini-symposium. This information starts to be gathered in September.

In 2010, the Network did away with site brochures. But McOwiti is still willing to help out with layout, printing for brochures for individual sites. (Is there an action step there?)

The Network Newsletter is mostly for internal communications.

ACTION STEP: Send McOwiti ideas for stories. The summer issue will go out by the end of June.

The Network Office now has [Facebook](#) & [Twitter](#). Would like to create a Wikipedia entry that links to all the other sites.

Cheryl Dybas has compiled a bunch of Discovery articles on the LTER network.

REQUEST: Where appropriate, please include the phrase LTER – not just your university name -- in press releases.

IDEA: Broader impacts section – have PIs set up media expectations in their broader impacts section, and then help them track successes to report back to NSF on those grants.

QUESTION: Would it be fun and interesting for groups/regions from this group to take on the Network newsletter? (McOwiti)

IDEA: Sites that are already producing a newsletter: revise content to submit to the LTER News!

QUESTION: Is there some interest in going beyond the internal communications audience with the LTER Newsletter? Some stakeholder groups might find this very interesting but they are not getting it.

It's difficult to contextualize LTER each time in these stories.

Others are on the mailing list, besides LTER staff.

QUESTION: What software can you use to make a newsletter?

Lori recommends Adobe products for print newsletters.

IDEA: EcoTrends publication soon to be out is a step towards getting science out to the public.

There could a roll-out for this - - an LTER News story, a story on the website, a press release targeted to educators.

IDEA: Might Tumblr be a better format for the Newsletter? Or a blog? (Nick) The fear is, who will contribute to keep that content current?

Cary recognizes the need to stay current with technology while recognizing that many of their donors consume media in a more traditional way. (Lori)

RESOURCE: The Cary Institute has put [its newsletter](#) online so the content can be shared more easily; their mailing list is just shy of 2,000 people (Lori).

RESOURCE: [Tech Soup](#) sells software to nonprofits at a low rate.

IDEA: Could have a session in the future on integrating traditional and digital/social media.

IDEA: Let's think about how engagement relates to communication. UGA just started a graduate program on engagement.

QUESTION: does the LNO want non-LTER stories? (NTL)

The work described must be funded by NSF's LTER program.

## **Appendix 1 C**

## LTER Network Communication - How it Works and How Sites May Contribute

Summary report by McOwiti O. Thomas, LTER Network Office

McOwiti O. Thomas, LTER's Public Information Officer (PIO) presented a detailed overview of the current LTER Network communication efforts, including challenges and opportunities. He noted that the Public Information Office exists to meet the LTER objective of maintaining a strong public outreach program in line with one of the LTER goals:

Outreach: "To reach out to the broader scientific community, natural resource managers, policymakers, and the general public by providing decision support, information, recommendations and the knowledge and capability to address complex environmental challenges."

The specific ways and actions needed to meet the LTER communication goals and objectives are set out in the SIP, which charges LTER with establishing "a two-way exchange between the LTER science community and decision makers, including the public, and to share information of interest in a timely, consistent, and easily understood manner."

To meet the growing needs for science communication within the Network, the LTER Executive Board charged LNO with developing a Strategic Communication Plan (SCP). After a thorough review of current communication goals, objectives, demands, tools, techniques, and, projected demand for communication within the LTER Network in the coming decade, LNO put together a planning team comprising people from various LTER sites and acquired the services of a facilitator to guide the process. The resulting SCP, which was published and unveiled in January 2011, thus incorporates input from the larger LTER community and advice from communication specialists.

The greatest challenge to implementing the recommendations of the SCP was the lack of resources for communication within the Network, with the entire Network communication personnel comprising just the PIO and very limited funding for communication activities. Although the SCP recommended that LTER hires new communication staff, including a Director of Communication, to complement the PIO's efforts, the current Cooperative Agreement between the NSF and LNO did not envisage the new positions, and so there's been no new hire so far.

Another recommendation of the SCP was the creation of a Communication Committee comprising representatives from sites to oversee the implementation of the plan. The CC in turn recommended that LTER designate site communication representatives at each of the 26 sites to work with the PIO and take charge of communication activities between their sites and LNO, as a way to build communication capacity within the Network. The specific individuals designated site communication reps were chosen by the site Principal Investigators.

Subsequently, the CC organized two science communication-related workshops at the LTER 2012 All Scientists Meeting at Estes Park, CO, bringing together LTER scientists and students interested in science communication. It was at those meetings that the idea for a formal Science Communication Training Workshop was mooted, leading to the first ever LTER site communication representatives meeting in Albuquerque in June 2013.

Due to the aforementioned lack of resources, LNO is carrying out a phased implementation of the SCP. Among the activities already carried out or in progress:

- A new LTER gateway website
- A new LTER annual report detailing LTER's accomplishments and other important scientific activities over the previous 12 months
- A quarterly electronic newsletter, replacing the old print edition newsletter
- Expanded annual LTER mini-symposium, with a schedule that includes a visit with decision makers at the Hill.
- Partnership with an ecological science-based Logan Science Journalism Program at MBL (Woods Hole, MA).
- A new LTER traveling exhibit involving new display banners from sites that are close to or in the vicinity of scientific meeting venues
- Enhanced social media presence, with a Facebook page, Twitter feed, and a new blog.

The PIO noted that more SCP activities were planned and hoped that success would be faster and greater with the help of the new team of LTER site science communicators.

## **Appendix 1 D**

Davis units:

Communicating LTER Science to Policy-makers and Resource Managers

Sessions and descriptions

Developing messaging points by knowing your audience

- Session overview: This session involved discussion of considerations and means for developing key messaging points for LTER sites.
- Practical activity: Site representatives will continue to develop one or more "nuggets" for their respective site. [For "nugget", I draw upon more recent usage of the term, i.e., a compact, valuable unit of information.]

Developing messaging points by knowing your audience

Session overview: This session involved discussion of considerations and means for developing key messaging points for LTER sites.

- Sifting out the noise
  - o Stepping outside your comfort zone
  - o Scientific uncertainty
  - o Differentiating "things people care about" and "things people SHOULD care about".
- Use of polling and focused studies
- Studies on economics and ecosystem services
- Identifying and incorporating audience interests: does that "thing" resonate with all audiences?

- Importance of network connections and relationships
- Political realities

Tools of the trade: modes of message delivery (1 hr total)

- Session overview: This session will expose the audience to examples of different modes of communication (fact sheets, illustrations, video/PSAs, briefing materials) used in Everglades restoration education and advocacy. My hope is that we will critique approaches presented and discuss novel tools and approaches employed by folks at other sites.
- Practical activity: Sharing and discussing examples from other sites.

Developing effective graphics and illustrations: from concept to final (1-1.5 hr total)

- Session overview: This session will walk the participants through the iterative process of developing effective graphics, illustrations and animations.
- Practical activity: Each site representative will develop a concept or plan for an illustration.
  - Photos are great, but don't show everything
  - It's not as simple as you'd think!
  - The process: working with illustrators and scientists

## **Appendix 1 E**

Giant Post It Notes from Marcia Nation Afternoon Session June 4 2013

Square, Triangle, Circle Activity:

Square:

- Specific examples- e.g. Steve Davis' video, concept figures
- Press Release Messaging Exercise
- Social Media Options and Consulting
- Guidance on Scientific Papers and discoveries to NSF
- Range the site communication encompasses
- Developed and discussed the idea of a communication plan rather than ad hoc as well as a structure for enacting plan
- Identification of approaches and comparisons with other LTER sites based on needs
- Diverse group sharing practices from broad range of activities and vast expertise

Triangle:

- We are at Step 1- getting people together; understanding how far we need to go; establishing contacts, exposure to techniques
- Next workshop training should have more practical tips

- There is a need to identify who is working with each of the audiences and different techniques for reaching them- possibly through working through the Strategic Plan as a living document
- Need to maintain reasonable expectations for what we can achieve

Circle:

- Future collaborations between sites
  - buddy system
  - Google Plus or LinkedIn Group
- Merits discussed for Google Hangout, Google Drive and Facebook

What are the products from this workshop

- site's successful strategies to be posted on the intranet
- strategic plan for site communicators
- building this group

Action Items:

Start Google Plus Group for Site Communicators

LNO News story for Network news

A May 2014 workshop- funding opportunities?

For LNO Website:

Add Section For Decision Makers (add information from Janice Flory)

Add Section for Media Contact List- national (add critique by Adam and Carol)

For Social Media

Follow, Like, Share, #lter

Plan a follow-up call for Site Communicators

Water Cooler Subgroup Meetings or water cooler subgroup phone calls?

Appendix 2 A

LTER Communication Strengths by Site

	Media	Policy Makers	Mgmt/Decision Makers (including landowners)	General Public	Schools	Others
Coweeta	-would love radio but not doing it now	-very limited, but goal at local level	-collaborate/support for NGO communication groups -hosting bio-monitoring database	-local newspaper every two weeks -dialogues & Pop. Ed -Presence at comm events -podcast & website/FB	-SLTER -some individual work with teachers	
Cary/BES/HBES	-press, radio -working on journalist-focused retreat	-science and mgmt. forums -testimony -site visits	-municipal folks/land managers white papers	-public lecture series -edu events -radio, newspaper, newsletter	-teacher training workshops -data-driven lessons	-artist/writer residence program
FCE	-fishing magazines	-local and state gov	-state gov and NPS	-anglers and fishing clubs	-SLTER	
GCE			-partner program: Georgia coastal research council -website, listserv, 'colloquium'		-SLTER -curriculum tie-in with kid's books	
VCR	-local papers -newsletters	-science advisors when requested	-partnerships w/ TNC, state/fed prot. Areas	-monthly seminar series -master naturalist program -clubs/group presentations	-SLTER -PD programs for teachers -highschool intern program	
CDR	-local papers	-local gov't advising	-partnerships w/ other agencies regarding prairie & Anoka sand plain health	-master naturalists -special interest groups -citizen scientists	-SLTER on-site and at schools -PD for teachers	-CDR and Univ or MN grad students providing broader impacts opps. and science comm.
Andrews	-local papers -site newsletter	-some site visits by staffers	-partnerships with forest service	-website -field day	-SLTER -canopy connections program for OR middle-schoolers -children's books and teachers guides	-Oregon State admin -visibility of AND across campus
NTL	-local papers -blogs	-more reaching out to the stakeholders so they are empowered to use their political will	- more reaching out to the stakeholders so they are empowered to use their political will	-alumni associations -local libraries -local private businesses as hosts or 'champions' -open houses at our field station	-SLTER - connecting w/other field stations to teach our info to their pool of students -individual classes for schools through lake associations and our station	-collaborating with regional research stations to connect research ideas/work/ students.

## Appendix 2 B

### Successful LTER Site Communication Strategies

- FCE Blog and FCE Facebook
- We are very open to inquiry calls from folks that run the gamut from biofuels to sandhill cranes they are observing in their yard. While we are not a nature center, we try to build community goodwill by honoring each call and suggesting other resources if we can't answer their questions. This has helped us increase our positive perception by locals who wonder why they can't hunt/hike/camp within Cedar Creek boundaries.
- We are very happy with the outreach to managers conducted by the GCRC, which maintains a regular dialogue with natural resource managers in GA on a variety of locally-important issues. Through the activities of the GCRC, we have had the opportunity to give talks about LTER research and share results with managers. It also gives us easy access and ready cooperation when planning new activities.
- Our Schoolyard Program is very strong, and we feel we have a direct effect on the participants in our summer workshops. We are also very happy with the initial reception of the children's book and are partnering with many environmental educators to distribute it to teachers (4H, National Estuarine Research Reserve, Marine Extension, DNR other local groups). The book is also being used in the Chatham County School District (Savannah).
- Every fall I do a 2-hr media/communications training with our site researchers & students, not just on broad topics like "how to talk to a reporter" (although that is very valuable) but also on

site-level logistics: the ways they can work with me throughout the year to get the word out about their work (e.g. timelines and procedures for LTER News submissions, press releases, social media, website highlights).

- Every summer, we reach out to the PR offices of our REU students' home institutions. As a result, colleges/universities often write nice stories about the student's Harvard Forest research, which is a good recruitment tool for getting more applications from that school the following year.
- We overhauled our website (<http://harvardforest.fas.harvard.edu>) in 2012. All the content is tagged, which is great (so, a search for "invasive species" will get you not only text pages but also photos, videos). We also use Google Analytics to annually determine which website pages people spend the most time on, and what webpages/web searches refer people to our site in the first place. This informs our site improvements and also gives us a better understanding of our audiences.
- We've had a lot of luck working with NSF, our university news office, NGO partners, and other groups to co-release press releases that receive regional and national exposure. Our tricks to success are 1) partnering with a group that has access to a prominent wire service like EurekAlert (NSF has this and so do most university news offices) and 2) having a really good media contact list in-house (so you can call journalists, including your local Associated Press bureau, directly to pitch stories).
- Every time we do a press release, I create a "press resources" page that contains the press release, the original scientific paper, plus high-res photos with credits & captions. I include this link in the press releases I send out. It helps keep me organized and also saves me a lot of back and forth with reporters. Here is an example:  
<http://harvardforest.fas.harvard.edu/press-resources-inside-look-pitcher-plants-4113>
- One place where we have had some outreach success is in involving teachers (at-sea) in our process cruises. The challenge probably has been in sustaining that excitement/interaction after the cruise. We all relax it seems after the big push and move on to the next thing. I suspect that it is also the same with the teachers.
- Partnerships with regional information science education institutions (ISEI): Birch Aquarium (e.g., EOCB coordinator is director of education; Explore It: Plankton activity; RET connections) and Ocean Institute (Temp-Chlorophyll time series program, integrated with their daily middle/high school field trips/programming).
- Numerous successful REU experiences. In communicating our REU opportunities for URM students, we have had some success with making partnerships and advertising with larger organizations and programs that specifically target URM undergraduates at a national, statewide and regional level - eg. the California Alliance for Minority Participation and the Scripps Undergraduate Research Fellowship (SURF) REU site.
- The creation of our blog has been very successful. We have had more than 13,000 visitors this year and an average of about 100 unique visitors per day.
- We also began hosting a public open house at both the Trout Lake and Hasler Lab research stations, events that draw large numbers of visitors each summer.
- "Success" in communication is extremely hard to measure, and especially so for LTER because the end product of our communication should be behavior change—be it in society's greater awareness and better care of our environment or recognition of LTER as an authority on long term ecological research matters (our goal).

- LNO: For external communication: Exhibition at major scientific conferences, notably ESA and SACNAS; Wide distribution of press releases, sometimes working with sites to issue regionally focused releases; LTER website and online news portal; Brochures and occasional informational flyers; Annual Report (newly launched); Congressional visits (locally and recently, the Hill); Information material to coincide with the annual mini-symposium at NSF
- LNO: For internal communication: Intranet (for easy retrieval of information by LTER folks); Newsletter
- Our Research Highlights on the web, which summarize and often synthesize our research for an educated, but not necessarily scientific, audience
- Building good working relationships with university media relations people, who handle our press releases.
- Several stories over the last few years in our university's daily newsfeed
- Including a 'how can we help you?' widget on our website; it makes us available and shows that we want to engage with stakeholders.
- Working directly with journalism organizations to bring journalists to our site and to bring journalists and scientists together.
- Working with project partners we were able to run a MWEE field trip for every 3<sup>rd</sup> grade student at one Northampton County Elementary school last year. We also have a track record of running successful programs for other area school groups including all classes involved in our Oyster Gardening program. VSEEP partners from the ESWR and ESSWCD also have a track record of running successful field trips for local schools.
- Working with Flint Hills Discovery Center (<http://www.flinthillsdiscovery.org/>) that incorporated the science associated with our site in the planning and execution of this museum.
- Giving a tour of KPBS to new K-State President and Provost.
- Over 1,700 individuals attended our Biennial Visitors Day on KPBS in 2012.
- First Media day (see objectives); resulted in news articles being shown in the region with some being picked up by National Press.
- Two articles in the KSU Foundation publication that highlighted K-State scientists who work at KPBS and KNZ-LTER.
- Private donations that have resulted in improvements at KPBS.
- Issuing press releases, most recently for the stream/pharmaceutical work (some takes place at BES), to national media. <http://health.usnews.com/health-news/news/articles/2013/04/02/antihistamines-adding-to-drug-pollution-in-streams>

## Appendix 2 C

### Challenges to Science Communication at LTER Sites

Communicating science to non-scientists and policymakers.

Linking site science to tangible outcomes or benefits for the general public, policymakers, public managers, and other stakeholders. Why should they care?

Advertising events to the general public and targeted audiences.

Lack of funding for supporting communication efforts.

Under-staffing of communication efforts.

Communication a low priority at sites.

Staff wearing many hats with numerous responsibilities other than communication.

Lack of network support for communication.

Insufficient communication skills or not enough breadth in skills to do “all things communication” (policy outreach, press releases, websites, social media ...)

Unsure of what communication tools (press releases, social media, website ...) to use for what purpose.

Lack of strategy (goals and objectives) – just doing communication when the opportunity arises.

Difficulty reaching targeted audiences, such as undergraduate students.

Timing communication, particularly on the web and with social media.

Cracking into the news media in cities where reporting on university science is not a big story.

Getting information from scientists and others for communication. Herding cats!

Finding the balance and synergies among education, outreach, and communication activities – prioritizing and leveraging efforts.

Funding challenges in the external communication environment; for example, in schools.

Peer-group support for LTER communication efforts.

Being reactive (when the press calls) rather than proactive (seeking media coverage)

## **Appendix 2 D**

### **Goals from Homework on LTER Site Communication Plans**

- Within the context of greater visibility leading to a long-term goal, I strive to better communicate science with recreational anglers. In particular, I would like to help change the negative perception that science means regulation and limited access to natural resources
- Greater visibility leading to more University and Federal funding
- Our site is interested in being recognized as a reliable source of ecology science information for people/media/policy makers searching to increase their understanding and awareness of ecology which would lead ultimately to well-informed decision making.
- Inform our site members about our own activities and about opportunities at the LTER network.
- Communicate important scientific findings to coastal resource managers in Georgia.
- Communicate about our study ecosystem and general research framework to K-12 students and educators.
- Communicate our important findings to our peers (leading to more citations and funding)
- Communicate our important findings to the general public (leading to popular support for our research).
- WITHIN HARVARD:
  - Increased funding for undergraduate education programs, which requires
  - increased Harvard student & alumni interest in HF programs
  - increased Harvard faculty research participation
  - increased incidence of HF programs in Harvard internal news
- OUTSIDE HARVARD:

- a socioeconomically diverse student pool for our REU program
- citations of site science in public policy
- recognition by regional/national journalists as first-to-call experts on New England forest/land use topics

- We are looking to entrain a more socio-economically diverse pool of students as participants in our LTER site research, both undergraduates and graduates.
- To build awareness of and interest in CCE-LTER research and resources in non-scientist audiences (K-12; public; etc).
- Build new and/or leverage existing partnerships with entities/organizations that serve/reach non-scientist audiences.
- While we think that every citizen of Wisconsin should know what “limnology” is, we realize that’s a difficult goal! To move to that end of better awareness, the NTL-LTER site wants to increase our communications and outreach to achieve best outcomes in the management decisions made on Wisconsin lakes, rivers and wetlands, increase our pool of donors as state support erodes, better fulfill the outreach requirements of our federal grants and raise the profile of the Center for Limnology, North Temperate Lakes research site and, of course, the LTER in both local and national media outlets.
- As far as I’m concerned, there’s only one communication goal for LTER: to be recognized as the ultimate authority on matters of long term ecological research (or even better, ecology in general). That means LTER folks should be the go to people when questions arise about ecological (some would say environmental) challenges or issues. In return LTER should attract greater investment by the public (through NSF/Congress), a more diverse pool of scientists (current and future) leading to more groundbreaking work and, perhaps, a Nobel Prize or two.
- Goal 1: Improved environmental literacy about agroecosystems
  - Inclusion of ecological principles/concepts in Extension agricultural programming, policies/programs, and popular press
- Goal 2: Engaged LTER graduate students and scientists and good recruitment of new ones
- My long term goal is to form a sustainable partnership with other local environmental education outreach programs/coordinators that will enable us to provide Meaningful Watershed Educational Experiences (MWEEs) each year for every 3rd, 4th and 5th grade student in the public schools of Northampton and Accomack Counties on the Eastern Shore of VA.

- The democratization of ecological knowledge through (a) multi-directional communication and learning around issues of environmental and social change (i.e., scientists and non-scientists communicating with and learning from one another, rather than a traditional model of education or extension), (b) increased incorporation of popular knowledge and concerns into ecological science, and (c) increased use of LTER science in local decision-making (at individual and collective scales).
- Increase utilization of the Konza Prairie Biological Station (KPBS) and KNZ-LTER data by a broad cross section of scientists and students in order to advance ecological understanding (by informing other scientists of ongoing research, new findings, etc.); enhance recruitment of high-quality graduate students by promoting Konza as a premier grassland research site; increase financial support for KPBS (through university, state, federal and private funding).
- Broader impacts—e.g. from K1-12; Undergraduate, graduate, post-doctoral training General public (docent Program); using science to help with societal needs.
- An improved understanding of urban ecosystems.
- Public understanding of the importance of long term research in both developing and assessing environmental policy.
- Increased ecological literacy, across socio-economic groups.
- Stronger ties to 'decision makers.'
- Educational impacts at all levels
- Funding through partnerships
- Diversity at all levels
- Policy impacts: water and air quality, chemical deposition
- Empowering rural communities

## **Appendix 2 E**

### **Resources for Science Communication**

## Readings on science communication

- AAAS resources on communicating science  
<http://communicatingscience.aaas.org/>
- #scicomm on Twitter
- Randy Olsen *Don't Be Such a Scientist: Talking Substance in an Age of Style*
- Cornelia Dean *Am I Making Myself Clear?*
- Scott L. Montgomery *The Chicago Guide to Communicating Science*
- Leslie, H. M. et al. 2013 "[How good stories and science go hand in hand](#)"  
*Conservation Biology*
- <http://compassblogs.org/>
- [The Plainspoken Scientist: Communicating Science](#), AGU Blogosphere
- [Melissa Marshall: Talk Nerdy to Me](#) Ted Talk

## Examples of excellent science communication Check this out!

Dr. Dan Childers' invited urban sustainability talk at NRC in Raleigh, NC April 2013 – The video was created 146 days ago and has over 400,000 viewer minutes as of 9/30/2013

[http://www.livestream.com/naturalsciences/video?clipId=pla\\_ca198662-fd92-4919-bbc2-703e154c5fbb&utm\\_source=library&utm\\_medium=ui-thumb](http://www.livestream.com/naturalsciences/video?clipId=pla_ca198662-fd92-4919-bbc2-703e154c5fbb&utm_source=library&utm_medium=ui-thumb)

- [LTER Discovery Articles](#) by Cheryl Dybas, NSF
- [NSF News](#)
- ANNUAL REPORT: [Cornell Lab of Ornithology 2012](#)
- VIDEO: NOVA's [Secret Life of Scientists](#)
- TWITTER: [@YaleE360](#)
- RADIO: PRI's *The World* – [environment coverage](#)
- NEWS: AAAS "[Science Shots](#)"
- [Scicurious Brain Blog](#)
- "[Snowfall](#)" (not sci comm per se, but a lot of buzz about this article and its presentation)
- *NYTimes* [Scientist at Work](#) articles
- Science on Tap <http://www.centerforcommunicatingscience.org/science-on-tap/>
- The Flame Challenge <http://www.centerforcommunicatingscience.org/the-flame-challenge-2/>
- Science communication on the radio collected at <http://science360.gov/radio/episodes/>

## Social media and science communication

- About blogging <http://scienceofblogging.com/8-tips-on-starting-a-science-blog/>
- "[Why should scientists use Twitter](#)"
- "[Reaching Out: So You Want to Communicate Science Online](#)"

- [“Why Scientists \(Should\) Blog”](#)

## Managing social media

- Hootsuite

## Outreach and policy communication

- Smith et al. [“COMPASS: Navigating the Rules of Scientific Engagement”](#) *PLoS One*
- #reachingoutsci on Twitter

## Measuring media reach

- Setting up a [Mention](#) alert
- Metrics on your Twitter account <http://www.twitonomy.com/index.php>
- Setting Google Alerts for your site, science topics, etc. to see when these are mentioned online
- Set up Google Analytics for your website to measure traffic to your site

## Graphics, visuals, data visualization and infographics

- Stephen Few *Show Me the Numbers: Designing Tables and Graphs to Enlighten*
- Blog on data visualization <http://www.perceptualedge.com/blog/?p=1668>
- Alberto Cairo's website/blog <http://www.thefunctionalart.com/>, which is also about data visualization.
- Alberto Cairo *The Functional Art*
- <http://blogs.agu.org/sciencecommunication/2013/05/13/picture-this-visuals-and-your-research/>

## LTER-related blogs

- Steward Pickett: <http://besdirector.blogspot.com/>
- Miriam Goldstein: <http://seaplexscience.com/>
- MCM blog <http://biologistsinantarctica.blogspot.com/>
- Gretchen Hoffman: <http://hofmannlab.msi.ucsb.edu/research/antarctic-research/bravo-134>
- PAL blogs <http://pal.lternet.edu/outreach/blogs/>
- David S. Johnson for TIDE project (affiliated with PIE) <http://tideproject.wordpress.com/>
- LTER-related student blog <http://longtermresearch.blogspot.com/>
- KBS blog <http://lter.kbs.msu.edu/blog/>
- FCE student blog <http://floridacoastaleverglades.blogspot.com/>
- Harvard Forest summer alumni blog <http://harvardforestalumni.blogspot.com/>
- CCE blog <http://cce.lternet.edu/outreach/blogs/>
- Coweeta blog <http://coweeta.uga.edu/blog>

### **LTER sites on Facebook**

- BES, CAP education, KNZ, NTL, PIE students, SEV REU site, VCR, HFR, AND, FCE

### **LTER sites on Twitter**

- @CAPLTER, fcelter, HarvardForest, BNZ\_LTER, KBS

## Appendix 2 F

### Workshop Evaluation Responses

#### Written Responses on Workshop Evaluation

1. This workshop:   exceeded my expectations   met my expectations   did not meet my expectations

Please explain:

- With few expectations other than learning social media, I wasn't sure what to expect other than learning innovative ways to share our science. It was good to meet other site comm and see what others do and where I can find resources. Great talent in our network!
- Thought there would be more time spent on training and practice on communication techniques/skills.
- The collegiality and collaborative feeling from and of the group is amazing and a credit to the participants.
- I must say I didn't have very specific expectations outside getting a chance to share resources, explore these resources, and possibly get at how to inform LTER Network level communication.
- I learned many ideas, concepts, tips, techniques.
- I was hoping for more hands-on activities. The exercise that Clarisse ran was helpful
- Diversity of experience/expertise was really helpful. Everyone was fun!
- As a collaborator outside of the LTER, I wasn't really sure what to expect.
- Lots of good discussion and some good ideas to take home; what I expected.
- I learned a lot about social media and different [strategies?] with stakeholders like the fishbowl.

2. Please use the scale to rate the major workshop components.

Comments:

- I felt like I too would have liked more exercises to see science writing in journalism. I like that we just did the Google group! Done! Yes!
- Site communication plan deserved more time and x-site discussion. Social media could have been improved by doing it as a demo of what could be done at one site or an eval of one site's plan ... this way more tailored to our work. In general, many of the activities (not necessarily the presentations) deserved more time so we could fully develop them and do wrap-up.
- We needed our science writer trainer there.
- There was no science writing or policy communication discussion other than to identify it's importance. Apologies if I missed it. Social media speaker was not informative or useful. A lot of chatter without well-articulated rationale. Site comm plan was good. Template useful and a help to frame process of development.
- Networking opportunities and informal peer communication was very valuable.
- We received CNN approach to site communications – the short-burst approach was sufficient for some areas and left me wanting more in others.

3. In general, please indicate how much knowledge on science communication you gained during the workshop:

A lot                      Some                      Very little                      None                      Already had  
expertise

Comments:

- Spent more time talking about why instead of how.
- Knowledge and awareness of what others are doing was the useful and enriching component of workshop.
- Already had expertise to a certain degree, but always nice to hear from peers and others.
- Most of the topics touched on things that we already know about and want to do but lack time, money and resources – but that limitation still holds.
- What a trove of resources from all the site communicators.
- More than sci comm, I gained significant knowledge about the other LTER sites.

- I felt like I came in with a fair amount, maybe due to a diverse background. I really liked the internal networking. All new faces and resources for me. I never even knew there was a McOWiti!

If you gained knowledge on science communication during this workshop:

- What specific knowledge did you gain?
  - Thinking about press release summaries.
  - Detailing and knowing who the audience is.
  - I learned a lot about social media.
  - Fish bowl!
  - Reach out to students in different departments to do independent research projects that benefit you both. Cool cheap labor. Also writing com right into our LTER grants.
  - How to most effectively gather information from scientists and work with them to distil and communicate that information to a target audience.
  - Some specifics on process/techniques (how sci translated by media, how illustrations/films produced), but more important than new knowledge was inspiration – seeing what other sites are doing and imagining if/how it could apply to mine.
  - LTER communication takes many forms and our site can benefit from adding new activities and products.
  - What other sites are doing.
  - Lots of new resources on basically every topic discussed. I also liked thinking through the illustrations.
  - Facebook, like others so our Facebook will be liked by others too.
  - Some new resources (people and materials/media)
  - Fishbowl approach to engagement. Awareness of the LTER Network, the people involved, and a sense of what they do was significantly important for me.
  - Number of different social media systems/outlets now available reinforced need for newsletters.
  - Thoughts about LTER Newsletter and advancing LTER more generally as national entity.
  - Social media, value of really knowing your audience, and paths for thinking outside of the box.

- How do you intend to use this in your work?
  - TBA-I plan on meeting with our newly-developed Sci Comm team upon my return.
  - More flow with LNO
  - Will submit 2 or more items to network newsletter each year and will start site newsletter.
  - What I've heard will be incorporated directly or indirectly into my comm plan. Will help me relate to and communicate with my LTER folks.
  - Explore how it might be used and integrated. Share with others. Hopefully tap expertise of folks I met.
  - I am going to tell our Facebook person a few Facebook pages I learned from the workshop, e.g. LTER Facebook, LTER graduate student blog site.
  - I haven't decided yet but mostly am just looking forward to going back over my notes and contacting people who are doing things that aspire to do better.
  - Contact colleagues for future projects for our site when/if advice is needed.
  - Provide tips and information from workshop.
  - Long list of possible actions to discuss with LPI and others ... and good list of people from here to support that. Examples: summer fieldwork blog by students, Google Alert to track use of our work, more art and illustration and animation for web site.
  - By tailoring my production workflow appropriately.
  - Work with PIs to get communication and its deliverables written into our site grant. And reach out to the design/journalist students.
  - I will use this to improve our social media presence at GCE.
  - Continue and better promote my research and scientific interests for both LTER and NASA.

4. How do you intend to move forward on your site communication plan after this workshop?

- Write regularly for McOwiti, partner with NGOs locally to tap into their audience, keep growing relationships with local entities: businesses, chambers of commerce, library, school.
- I'll develop it more on the plane and discuss with rest of team.
- Identify willing partners for a communications committee. Develop plan with committee input. Seek plan approval at our next annual meeting.

- Lead PI and I will sit down and draft a plan.
- Had only developed goals and audiences thus far – can now add objectives and activities for the coming year.
- Ask our lead PI if she wants a site calling card with a QR code. Maybe create a QR code for our site, so we can put it on our posters.
- Meet with PI and other site members (who are invested in science comm); begin to develop plan.
- Write it and if possible, have it be incorporated into the BNZ strategic plan and used.
- Will speak with PIs and ideas past peers and workshop co-ordinators.
- Some very specific things for BES.
- Together with the Sci Comm Team, we plan to draft an initial plan – and outline 3 concrete action items.

5. Do you have a need for additional training or professional development on science communication?

Yes                      No

If yes, please indicate specific areas of training and development that you need.

- Science writing for general public.
- How to write a press release.
- How to approach traditional media (NPR), magazines, newspapers
- Sure, some people spend their whole college careers doing this. What do they teach? Let's do it. Maybe something like "water words that work." Google it. Maybe tech training too for others; Twitter etc.
- Yes, but not on specific topics that I can ID at the moment.
- More experience translating journal pieces into news items.
- Taking site science and finding the story.
- Evaluation; broader impacts strategies; website development
- I am not the communicator for our site. I don't know if our site has a designated communicator. This workshop convinced me that our site needs one.
- Maybe – need to consider what and when and how. It may not be me from site that needs it/wants it.
- I am very interested in media training on how to talk to legislators and policy makers. Programs such as the Compass training (Nancy Baron)

would be/appears to be what I'm looking for. It suspect it would be useful for PIs, post-docs, etc.

- How to use social media; practice with press releases.
- Policy connections.
- This will depend on which direction our site comm. Plan proceeds. TBA.

How would you prefer that this training and development be delivered (circle all applicable):

- Videos
- Articles and web resources
- Synchronous webinars
- Face-to-face meetings and trainings
- Other (specify):

6. How else can we support science communication in the LTER Network?

- Somehow become as cohesive as the LTER IM community. They all seem to be able to steer the LTER IM ship in an effective, productive manner.
- Maintain momentum from this workshop, follow up with e-mails etc., with resources and build a sense of community among site communicators.
- It's great that we're in touch now. I think we need to continue to think about LTER's audiences writ large – NSF etc. – and how we can better reach them. Would love to use the Strategic Comm Plan (2010) as a plan for action.
- Network support for graphics help, for press release help.
- \$ to support staff who are already trained in science communication.
- Google group is a good start ... but will probably need some prompting to make useful. Sharing of our pre-workshop homework would be useful, also of strategic communication plans. Also sharing of best practices ... w/examples. General: Given our different roles and missions, might have been useful to have simulation sessions on different topics so we could self-organize a bit more and also build and connect with and gain knowledge from similar sites.
- Keep networking.
- Support graduate student involvement in communication and outreach.

## Appendix 2 G

### Your Site Communication Plan

1. Using your homework, refine your site goals. Remember that these are the big things that you are trying to accomplish.
2. Link each of your goals to a set of objectives. Objectives are what you are defining and implementing to attain your goals. Objectives should be specific (not vague), measureable (i.e. 6 press releases per year), attainable (be sure to be realistic given available resources), relevant (directly applicable to your goals), and time-bound (expectations for when objective will be attained).
3. Think about what you will be doing (activities or actions) to attain each objective. For each activity, think about who will be implementing the activity, the time frame of implementation, and the audience for each activity.
4. Look at the LTER Communication Plan (on your USB key) for examples of how to set up your own plan. For example:

#### Goal 2

Harness the power of long-term ecological research for decision making through two-way exchange between LTER scientists and policy makers, natural resource managers, funders, and the media.

Specific objectives for this goal include:

- A. Engage decision makers in developing questions and informing distillation activities, particularly related to issue-based synthesis efforts.
- B. Expand the Network's capacity to disseminate high-impact scientific findings to local, national, and international media.

Please feel free to use the attached template to build your plan.

Remember: Your plan is a living document and can and will change over time. Once you have a working draft, share it with your PI, scientists at your site, students, and other LTER staff to get feedback for further refinement. You can think about building a committee to work on the plan. Science communication cannot happen within a silo – you need to have a “village” to make your plan a reality and to get everyone on board.

**Goal 1:**

**Objective 1.1:**

**Activity 1:**

**Activity 2:**

**Activity 3:**

**Objective 1.2:**

**Activity 1:**

**Activity 2:**

**Activity 3:**

**Objective 1.3:**

**Activity 1:**

**Activity 2:**

**Activity 3:**

**Goal 2:**

**Objective 2.1:**

**Activity 1:**

**Activity 2:**

**Activity 3:**

**Objective 2.2:**

**Activity 1:**

**Activity 2:**

**Activity 3:**

**Objective 2.3:**

**Activity 1:**

**Activity 2:**

**Activity 3:**

(and repeat for each goal)

Objective	Activity	Who will implement?	Who is the audience?	Time frame for implementation

## Appendix 2 H

### WEDNESDAY, JUNE 12

- 9:30-10:00am – Marcia Nation, [marcia.nation@asu.edu](mailto:marcia.nation@asu.edu), CAP LTER; website & Twitter
- 10:00-11:00am – Susan Dailey, [drskdailey@gmail.com](mailto:drskdailey@gmail.com), FCE LTER; Facebook, Twitter, Google+

- 11:30am-12:00pm – Clarisse Hart, [hart3@fas.harvard.edu](mailto:hart3@fas.harvard.edu), HFR LTER; Google+
- 1:00-1:30pm – Ross Boucek, [rbouc003@fiu.edu](mailto:rbouc003@fiu.edu), FCE/FIU; Google+, blog
- 2:30-3:00 – Chris Ray, [cray@colorado.edu](mailto:cray@colorado.edu), NWT LTER; Facebook, Google+, personal v. site accounts

### **THURSDAY, JUNE 13**

- 12:00-12:30pm – McOwiti Thomas, [tmcowiti@lternet.edu](mailto:tmcowiti@lternet.edu), LTER Network Office; pros and cons of auto-posting on Facebook and Twitter
- 12:30-1:00pm – Richard Kern, [kern.wildlife@gmail.com](mailto:kern.wildlife@gmail.com); how to do a website report, how to use social media to link his website <http://www.odysseyearth.com> with the release of the new FCE collaborations and hopefully upcoming additional LTER site endeavors.
- 1:00-1:30pm – Kristin Evans, [klevans@ucsd.edu](mailto:klevans@ucsd.edu), CCE LTER; Google+, Twitter
- 1:30-2:00pm – Mary Spivey, [spive007@umn.edu](mailto:spive007@umn.edu), CDR LTER; TBA
- 3:00-3:30pm – Lori Quillen, [quillenL@caryinstitute.org](mailto:quillenL@caryinstitute.org), Cary Institute for Ecosystem Studies; blog
- 4:30-5:00pm – Lina DiGregorio, [lina.digregorio@oregonstate.edu](mailto:lina.digregorio@oregonstate.edu); AND LTER; homepage of website