

*Long-Term Research for Understanding
and Sustaining Earth's Ecosystems*

LTET Strategic Communication Plan: *Bridging to Broader Audiences*



LTET is the largest long-term ecological network in the world. It spans 2000 scientists, 26 sites and over three decades of transformative research supported by the National Science Foundation.

LTET Ad Hoc Communication Committee
Project Consultant: Kathy Fallon Lambert

November 2010

www.lternet.edu



**Long-Term Research for Understanding
and Sustaining Earth's Ecosystems**

Long-Term Ecological Research (LTER) - Network Office
 Department of Biology, MSC03 2020
 1 University of New Mexico
 Albuquerque, NM 87131-0001

Phone: 505 277-2597 Fax: 505 277-2541
Office_support@LTERnet.edu
www.lternet.edu

About LTER

LTER is the largest long-term ecological network in the world. It spans 2000 scientists and 26 sites reaching from the Arctic to Antarctic and from the Caribbean to the Pacific. LTER was initiated by the National Science Foundation in 1980 and for over three decades has generated rigorous scientific research to understand and sustain Earth's ecosystems. As centers of excellence in ecological research LTER sites hosted by universities, government agencies, and non-profit institutions provide extensive opportunities for collaborative research and unparalleled training grounds for the next generation of scientists and decision makers.

LTER Ad Hoc Communication Committee

Name	LTER Site	Affiliation	Role	Email
Robert Waide	LNO	University of New Mexico	LNO Executive Director, EB	rwaide@lternet.edu
Karen Baker	PAL	University of California-San Diego	IM	kbaker@ucsd.edu
David Foster	HFR	Harvard University	Principal Investigator (PI), EB	drfoster@fas.harvard.edu
Peter Groffman	HBR	Cary Institute	PI	groffmanp@caryinstitute.org
Nicole Kaplan	SGS	Colorado State University	IM	Nicole.Kaplan@colostate.edu
Kathy Lambert	OTHER	LTER consultant/Harvard Forest	Consultant	klambert01@fas.harvard.edu
Bill Michener	LNO	University of New Mexico	New Mexico EPSCoR Director	bmichener@lternet.edu
Marcia Nation	CAP	Arizona State University	Project Manager	marcia.nation@asu.edu
Daniel Nidzgorski	CDR	University of Minnesota	Graduate student	nidzg001@umn.edu
Dan Reed	SBC	Marine Science Institute, UCSB	PI	reed@lifesci.ucsb.edu
Phil Robertson	KBS	Michigan State University	Chair, Science Council (SC) & Executive Board (EB)	robertson@kbs.msu.edu
McOwiti Thomas	LNO	University of New Mexico	LNO Public Information Officer	tmcowiti@lternet.edu
Jonathan Walsh	BES	Cary Institute	Information Manager (IM)	walshj@caryinstitute.org

Acknowledgements

Special thanks to the reviewers listed in Appendix C for their contribution of time and ideas to the development of this plan. Cover photo courtesy of David Foster.

LTR Strategic Communication Plan: *Bridging to Broader Audiences*

Table of Contents

Executive Summary	5
I. Introduction	10
A. Background	10
B. Purpose	11
C. Ad Hoc LTER Communication Committee	11
II. Communication Vision, Mission and Situational Analysis	12
A. Communication Vision	12
B. Communication Mission	12
C. Situational Analysis for LTER Communication	12
III. Communication Framework	13
A. Communication Goals	13
B. Communication Principles	13
C. Overarching Communication Strategies	14
D. Target Audiences	14
IV. Recommendations: Communication Goals, Objectives and Tactics	15
Goal 1	15
Objective 1.1	15
Objective 1.2	17
Objective 1.3	19
Goal 2	19
Objective 2.1	19
Objective 2.2	22
Goal 3	22
Objective 3.1	22
Objective 3.2	23
V. Draft LTER Messages	24
A. Proposed Tag Line	24
B. Draft LTER Mission Statement	24
C. Proposed Messages	24
D. LTER at a Glance	24

VI. Proposed Implementation Strategy	26
A. Getting Started	26
Build Communication Capacity	26
Launch Three Flagship Projects	27
Take Small Steps Now	28
Conduct Additional Communication Research	30
B. Draft Communication Metrics	31
C. Summary	31
VII. References	32
VIII. Appendices	33
A. LTER Communication Survey - Summary of Responses	33
B. Ad Hoc Communication Committee – Meeting Summaries	42
C. List of Reviewers	49
D. Model messages for other science organizations	50
E. LTER Strategic Implementation Plan – Communication Table	52
Boxes	
Strategy Focus 1: Supplemental Capacity	16
Strategy Focus 2: LTER Science Spotlight Pilot Project	18
Strategy Focus 3: Science Journalism Partnership	21
Acronyms and Abbreviations	
CC	Communication Committee
EB	Executive Board
ED	Executive Director
IM	Information Manager
LNO	LTER Network Office
LTER	Long Term Ecological Research
NSF	National Science Foundation
PIO	Public Information Officer
SC	Science Council

Executive Summary

Overview

“Planetary Stewardship”, “Sound Science”, and “Broader Impacts” – these phrases represent calls from major scientific bodies to strengthen the connection between science and decision making. The growing need for a stronger interface between science and society is well documented in both the popular media and the academic literature (e.g. Lubchenco 1998; Groffman et al. 2010). The Long Term Ecological Research (LTER) Network supports long-term research that provides an unparalleled foundation to move beyond these broad calls and build effective linkages between scientists and target audiences. In 2002, NSF’s 20-year review of the LTER Program recommended that, “the LTER program assume a more powerful and pervasive role in informing environmental solutions at local, national and international levels” (NSF 2002). The LTER Strategic Communication Plan provides a roadmap for such an effort. The plan encompasses both conventional aspects of “science communication” as well as tools for “public engagement” and “boundary-spanning”. It draws on both traditional and new media approaches to communication. The LTER Strategic Communication Plan was developed with input and direction from the Ad Hoc Communication Committee, an LTER communication survey, social science literature, and discussions with more than a dozen internal and external experts.

“...improving the use of ecological information in environmental decision making and problem solving requires a rededication to outreach and a thorough re-evaluation of our audiences and the public responsibilities of ecologists. In particular, ecologists must make greater efforts to reach non-scientific audiences and need to think more deeply about the social networks that influence these audiences.”

From Groffman et al. 2010 based on outcomes of the 2009 Cary Conference, *Effective Communication of Science in Environmental Controversies*.

Target Audiences

The target audiences identified for the LTER Strategic Communication Plan are based on results from the LTER communication survey. The survey responses suggest there is substantial interest within the LTER community in developing communication efforts targeting external audiences, particularly funders, policy makers, natural resource managers, as well as the broader scientific community and the media. There are currently few staffed activities and little if any dedicated LTER site funding to reach these groups.

The “general public” is often cited as an important audience, however most communication experts consider this category too broad to be useful in developing specific tactics. Therefore, rather than call out the general public as a specific audience in this plan, we recommend instead activities that focus on reaching the general public through the media, existing education programs for K-12 teachers and students, and site-based activities for local organizations and interested citizens.

ILTER Communication Goals

Input from the Ad Hoc Communication Committee and the communication survey was used to develop the following communication goals.

1. To be recognized as a leading resource for long-term ecological research by the broader scientific community, decision makers, and the media.
2. To 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.
3. To advance scientific collaboration and innovation by strengthening communication within the LTER Network and between the LTER Network and the broader scientific community.

ILTER Communication Objectives

The following objectives were developed for the LTER communication goals.

Objectives for Goal 1

1. Build capacity across the LTER Network to engage target audiences through communication activities.
2. Strengthen LTER's name recognition and reputation among decision makers and the media as a source of rigorous, long-term research.
3. Increase opportunities for scientists to highlight LTER accomplishments to funders and other target audiences.

Objectives for Goal 2

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

Objectives for Goal 3

For the LTER community:

1. Promote a shared mission and sense of community by strengthening communication channels for reaching all LTER participants.
2. Advance network-scale science, synthesis and other collaborative activities by facilitating regular interactions across sites and among all LTER participants.

For the broader scientific community:

1. Raise awareness of the value of the LTER Network and the impact of LTER science within the broader scientific community.
2. Facilitate collaboration, learning and information sharing between the LTER Network and the broader scientific community.

Summary of Major Recommendations

To achieve the LTER communication goals and objectives, we have identified a set of tactics that can be phased in as resources become available. To get started, a series of priority activities are summarized below in four actionable categories: (1) Build Communication Capacity, (2) Launch Three Flagship Projects, (3) Take Small Steps Now, and (4) Conduct Additional Communication Research. Sections II and III of the plan provide the rationale for the recommended tactics, section IV offers additional details for each of the activities, section V enumerates a set of draft LTER messages, and section VI proposes specific next steps for the first phase of the plan.

The LTER Strategic Communication Plan: Getting Started

#1 – Build Communication Capacity

There is a considerable unmet demand for communication activities across the LTER Network yet the communication survey results revealed that LTER scientists cannot meet this demand on their own. We recommend that LTER develop an LTER Science Translation and Outreach Program (LTER Research STOP). The major elements of an LTER Research STOP should include:

- A standing LTER Communication Committee to oversee the implementation of this plan.
- A Communication Manager or Director to assist in the implementation of the Strategic Communication Plan.
- A flexible communication site supplement funding program to support site and cross-site activities, and to facilitate coordination with the LNO.

#2 – Launch Three Flagship Projects

We recommend pursuing three new flagship projects beginning with planning efforts in 2010-2011 followed by pilot efforts in 2011-2012.

- Create a new LTER gateway website to integrate the five existing websites and shift the focus to external target audiences.
- Equip the Network's synthesis initiatives with full communication and outreach resources starting with the Future Scenarios effort.
- Explore a new science journalism partnership with the Marine Biological Laboratory's Logan Science Journalism Program, as part of a larger set of activities to reach the media.

#3 – Take Small Steps Now

The following activities can be implemented in 2010-2011 with existing staff and a modest allocation of time or budget resources.

Decision makers:

- Adopt a tag line, mission statement, and three core LTER messages.
- Expand the LTER mini-symposium to reach Congressional and additional agency audiences, and distill the content of the presentations for the LTER website and other outlets.
- Publish and distribute an annual *LTER Transformational Science* publication that replaces the biennial print newsletter (which will be replaced with a more frequent e-newsletter).

The Media:

- Develop written communication guidelines for releasing high-impact research results to the media and organize a webinar series to exchange outreach practices among LTER sites.
- Expand LTER use of searchable expert databases to increase access by decision makers and members of the media to willing LTER experts.

LTER Community:

- Transition the LTER Network Newsletter to electronic format with a goal of moving towards bimonthly publication starting.
- Encourage site exchanges and workshops through the annual working group competition and by working with the Science Council to identify 1-2 workshop themes each year.

#4 – Conduct Additional Communication Research

Use LTER experts to conduct additional research on social networking and new media tools.

- Assess science spotlight, knowledge exchange websites, and rapid response teams produced by other organizations to inform LTER website development and media outreach efforts.
- Conduct social media monitoring to determine if, where, and how LTER should engage in the social media world (e.g., blogs, twitter, podcasts, facebook).
- Undertake an LTER social network analysis and distill best practices from other member-based organizations to improve connections between the LTER Network Office and the sites, among sites, and within sites.

Next Steps

The success of the LTER Strategic Communication Plan will depend on garnering support and engagement from both the LTER community and key National Science Foundation personnel. The release of the plan should be coordinated by the LTER Network Office, the Ad Hoc Communication Committee and Executive Board, and should include the following steps:

1. Announce the release of the LTER Strategic Communication Plan on the LTER website and the LTER Network Newsletter with a link to the full plan.
2. Organize and market two webinars to share the details of the plan and to engage scientists and target audiences in the implementation of the plan.
3. Publish a brief summary of the plan's recommendations and distribute it to LTER site representatives, NSF program officers, and prospective funders (government agencies and private foundations).

Helpful Terms

Boundary-spanning: activities to engage stakeholders in framing questions and distilling research, with a focus on enhancing credibility, legitimacy and saliency.

Decision makers: in this plan the term “decision makers” refers to policy makers, natural resource managers, and funders.

Distillation: activities to synthesize data, interpret findings, describe implications, and convey results target audiences in formats that meet their needs.

Public engagement: activities to promote the two way flow of information and ideas between scientists and target audiences through listening and shared understanding.

I. Introduction

A. Background

The Long Term Ecological Research Network (LTER) is a unique network of scientists dedicated to the continuous study of the world's natural and human-built environments. It is the largest long-term ecological network in the world spanning 2000 scientists, 26 sites and over three decades of rigorous research supported by the National Science Foundation. The research conducted through the LTER Network over the past 30 years has made significant contributions to the field of ecology and to the advancement of ecosystem protection and stewardship efforts in the US and beyond.

Several LTER sites run model programs to distill key findings from long-term research and share them with target audiences. Examples include the Hubbard Brook Science Links program, the Andrews Experimental Forest Land Management Partnership, efforts at Seville LTER related to the Hanta virus, the Harvard Forest's Wildlands and Woodlands Initiative, and the Georgia Coast Research Council with resource managers.

A strategic communication plan that builds on these successes to advance site-based communication activities and coordinate network-wide efforts will lead to: (1) more effective exchanges with decision makers and the media, (2) better integration of long-term science with stewardship efforts, (3) enhanced research through collaborations with target audiences, and (4) increased appreciation and support for LTER research.

LTER communication and outreach efforts began in the 1980s with a focus on facilitating interactions and data sharing within the network, and on publishing research results in the primary literature. The LTER Network Office (LNO) coordinated internal communication through the creation of a personnel directory, development of an e-mail forwarding system, preparation of a network pamphlet, the publication of the first Network newsletter in 1987, and the hiring of a data manager in 1990. Efforts to increase information exchange with broader audiences have been coordinated by the larger LTER community and include the Oxford book series and special journal features that underscore the value of long-term research and major contributions of the LTER Network (Franklin et al. 1990, Hobbie et al. 2003, Peters et al. 2008).

Starting in the late 1990s, communication and outreach efforts took a step forward with the publication of site brochures by each LTER site, revision of network-wide brochures, and the creation of a traveling exhibit. A focus on K-12 education also took hold with the support of annual LTER site supplements (\$24,000/site/year) which led to the LTER Schoolyard Education Program and a new children's book series. This work and network publications for broader audiences were supported by



the hiring of Stephanie Martin as the first Publications/Public Information Officer in 1987. She was followed by Patricia Sprott from 1997 to 2004 and then McOwiti Thomas (2004 to the present).

With the advent of the internet, communication efforts have expanded and over the past 15 years and the LTER website is now the primary vehicle for sharing information about the Network and Network Office with broader audiences. The LTER has five distinct websites: the LTER Network public website, the LTER Schoolyard website, the LNO website, the Information Management website and the LTER intranet (www.lternet.edu; schoolyard.lternet.edu; lno.lternet.edu; databits.lternet.edu; intranet.lternet.edu). In addition to these network-wide websites, all individual LTER sites maintain websites specific to their research.

In 2007, the LTER Network identified the need for a strategic plan for communication in the Network's Decadal Plan and assigned the LNO responsibility for developing that plan. The LNO included a budget for the communication plan in its renewal proposal and formed an Ad Hoc Communication Committee in April, 2007. In April 2009 the committee created a general scope for the plan, and the committee was expanded to its current membership in July 2009. The value of an expanded communication effort was further recognized at the 2009 All Scientists Meeting as part of a larger need to better integrate scientific research and societal needs. This renewed focus led to the development of an outline for the strategic communication plan by the LTER Network Office, and a consultant was hired in February 2010 to facilitate the process of developing the plan.

B. Purpose

The purpose of the LTER Strategic Communication Plan is to develop a roadmap for LTER communication and outreach activities with defined goals, objectives, target audiences, messages and recommendations to pursue at the site, network and LNO levels. The direction and recommendations in the plan draw on input from the Ad Hoc Communication Committee, an LTER communication survey, and targeted interviews with over a dozen scientists and educators in the LTER Network.

C. Ad Hoc LTER Communication Committee

Nine members from the LTER Network were appointed to the Ad Hoc Communication Committee by the Executive Board (see inside front cover). The committee's charge was to develop the scope, process and format for the communication plan. The committee also served as the liaison for the plan to the larger LTER community, including the Executive Board. Kathy Fallon Lambert was hired as the consultant to help draft the plan. Kathy is the former executive director of the Hubbard Brook Research Foundation and worked with that organization to develop their Science Links program. She has been a consultant on the integration of science and policy for several research institutions as well as for the U.S. Environmental Protection Agency. She is currently the Science and Policy Integration Project Director at the Harvard Forest, Harvard University.

II. Communication Vision, Mission and Situational Analysis

A. Communication Vision

The LTER Network envisions a future in which a rich exchange between science and society strengthens the stewardship of Earth's ecosystems and shapes future ecological research.

B. Communication Mission

The communication mission of the LTER Network is to inspire understanding and stewardship of the Earth's ecosystems by promoting a long-term ecological perspective, distilling advances in ecological research and facilitating collaboration among LTER scientists, decision makers and the media.

C. Situational Analysis for LTER Communication

1. Strengths

- a. LTER sites, scientists and staff with national and international expertise who are experienced at engaging diverse target audiences including decision makers, the media and the broader scientific community, as well as K12 students, teachers, and the public.
- b. Long-term research that is compelling and relevant to society, useful in informing the development and assessment of policy and management actions, and of broad interest to decision makers, the media and the public.
- c. A history within the LTER Network of communicating findings to resource managers and other decision makers.
- d. A commitment to long-term research that provides consistency in the information base, knowledge, and relationships as a strong foundation for communication efforts.
- e. Expertise and resources within the LTER Network Office to assist with the implementation of a communication strategy.
- f. Partnerships with government agencies and non-governmental organizations that provide numerous opportunities for two-way exchange and knowledge transfer at national and international levels.

2. Opportunities

- a. Significant external demand for building stronger connections between ecological science and environmental policy and management in the US.
- b. Frequent opportunities for communicating directly with target audiences.
- c. Opportunities to engage with other scientific communities/networks working on issues of human – environment interactions, e.g. Global Land Project (GLP), National Ecological Observatory Network (NEON) and others.

3. Challenges

- a. Insufficient expertise and experience in making long-term ecological research tangible and visible to target audiences.
- b. Inadequate means for establishing and sustaining effective dialogues with target audiences.

- c. Insufficient understanding of regional and audience diversity and of strategies and messages that address that diversity.
- d. Uneven knowledge of communication strategies, technologies and costs within the LTER Network.

4. Threats

- a. Limited resources for communication, including funding, time, human resources and expertise.
- b. Significant institutional barriers and disincentives for research-focused personnel within academic institutions.

III. Communication Framework

A. Communication Goals

1. To be recognized as a leading resource for long-term ecological research by the broader scientific community, decision makers, and the media.
2. To 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.
3. To advance scientific collaboration and innovation by strengthening communication within the LTER Network and between the LTER Network and the broader scientific community.

B. Communication Principles

The LTER Strategic Communication Plan should abide by contemporary principles of effective communication and outreach such as:

1. *Communication starts at the beginning, not the end* – Approach communication as an integrated process to span the boundaries between science and stewardship. Engage with target audiences and exchange information throughout the research process, rather than at the end of the research pipeline.
2. *Communication should frame research results so they are relevant* – Focus on the importance of building trust and framing issues in terms that are salient to target audiences rather than assuming that better decisions will simply flow from more information (this outdated approach is referred to as the “deficit model”).
3. *Communication should adapt to changes in engagement approaches and technology* – LTER efforts should draw in diverse target audiences using new media tools that augment traditional one-way communication approaches.

C. Overarching Communication Strategies

The recommendations in this plan embrace five overarching strategies for expanding the LTER Network's communication capabilities and effectiveness.

1. Expand staff, expertise, and funding resources for the distillation of science and engagement of target audiences by developing new NSF-supported activities.
2. Increase participation in existing LTER and NSF communication efforts through increased marketing, streamlined internal communication, and exchange of best practices through peer-to-peer programs.
3. Expand strategic partnerships with national observatories, scientific societies, other scientific institutions, and non-governmental organizations to increase the presence and involvement of LTER in existing communication programs hosted by other entities.
4. Start with pilot projects and conduct regular monitoring and external evaluation of current and new communication activities. Adapt and expand communication efforts based on measurable results and feedback.

D. Target Audiences¹

The following groups were identified as target audiences for the LTER Strategic Communication Plan through a survey of the LTER community. The primary target audiences *in order of priority* are:

1. Funders – officials with the National Science Foundation, other governmental agencies, large private foundations, members of Congress and their staff.
2. LTER scientists and students – Principle Investigators (PIs), co-PIs, LNO staff, technicians, information managers, graduate students and undergraduate students.
3. Policy makers and natural resource managers – state and federal elected officials, agency officials with oversight responsibility for the environment and related areas, conservationists, foresters, land managers and others.
4. The Media – journalists associated with media outlets, freelance writers, associations that serve journalists and entities that distill science for journalists. The media also serves as an important conduit for reaching the audiences above and the general public.

Note: where the term “decision makers” is used in this plan, it refers to policy makers, natural resource managers and funders.

¹ Note: it is assumed that outreach and communication to K-16 audiences will be covered elsewhere and therefore is not included in this plan.

Additional audiences that emerged as important based in the LTER communication survey.

1. Non-LTER Scientists – scientists at academic and research institutions.
2. Scientific societies – staff and governing boards of major scientific societies such as Ecological Society of America (ESA), American Institute of Biological Sciences (AIBS), and American Geophysical Union (AGU).
3. General public/concerned citizens – members of the public who live near LTER sites and interested citizens who can be reached through local and major media outlets.

IV. Recommendations: LTER Communication Goals, Objectives and Tactics

In order to fulfill the LTER communication mission, the Ad Hoc Communication Committee has developed the following tactics linked to each of the communication goals and associated objectives.

GOAL 1: *To be recognized as a leading resource for long-term ecological research by the broader scientific community, decision makers, and the media.*

Objective 1.1 – TARGET AUDIENCE = ALL

Build capacity across the LTER Network to engage target audiences through communication activities.

Tactics

- BUILD CAPACITY – Establish a Science and Translation Outreach Program for LTER research (LTER Research STOP)². The LTER Research STOP should start with the activities delineated below. Over time, the Communications Committee could consider expanding the LTER Research STOP to include: (1) a staffed office in Washington DC to facilitate government affairs activities (perhaps jointly with a scientific society), and (2) a grant program to fund communication projects that exceed site supplement funding and fall outside NSF guidelines for Informal Science Education programs.
 - *Form a standing LTER Communication Committee* with strong ties to the Education and Publication Committees. The formal charge of the committee should be established by the LTER Executive Board and should include implementing the LTER Strategic Communications Plan starting with the priorities articulated in the Executive Summary and in section VI: Proposed Implementation Strategy.
 - *Hire a Communication Manager or Director* to assist the Communication Committee and coordinate with LNO staff and LTER participants in the implementation of the Strategic Communication Plan and to address other priorities set by the Committee.

² The use of “STOP” in this context is both an acronym and a noun referring to a place that someone could go for one-stop access to LTER research.

- *Initiate a flexible site supplement program* starting with ten \$25,000 supplements to support site, cross-site, and site-LNO communication activities. The supplement program should be flexible so that sites can use funds as planning grants for experimental outreach projects or combine funding across sites to support a regional program or position. LNO should develop a process for sharing results and best practices from these activities across the network through sessions at the All Scientists Meeting (ASM) and peer-to-peer webinar exchanges.

STRATEGY FOCUS 1: LTER COMMUNICATION SITE SUPPLEMENT PROGRAM

The LTER Strategic Communication Plan distributes the responsibility for communication across LTER sites, the network, and the LTER Network Office. A new site supplement program would give sites the capacity to support outreach to external audiences and across a network that is now more than double its original size. Building on the model of the LTER schoolyard supplement program, a new site supplement program should be developed to support communication at LTER sites, including efforts to:

- Develop and implement electronic communication strategies, using best practices and standards to support a coordinated network-wide approach.
- Develop basic communication strategies and tools such as site websites, photography, annual summary of major accomplishments, and video footage.
- Contribute to the monthly e-newsletter developed and distributed by LNO.
- Assist with distillation and dissemination of key findings and accomplishments.
- Support a designated site contact for LNO to respond to information requests.
- Coordinate site outreach to media and decision makers.
- Partner with communication specialists to expand communication expertise.
- Sponsor artists, writers and historians in residence.
- Develop new publications that distill key findings from long-term ecological research.



Objective 1.2 – TARGET AUDIENCE = ALL

Strengthen LTER's name recognition and reputation among decision makers and the media as a source of rigorous, long-term research³.

Tactics

- WEBSITE – Create a new LTER gateway website with a focus on external target audiences.
 - *Refocus the website* to serve the interests and promote interaction with external target audiences while improving aesthetics, navigation, and searchability.
 - Consider whether the current LTER intranet site needs a separate entrance or should be password protected.
 - *Create a gateway page* to coordinate access to appropriate existing LTER Network websites.
 - *Develop a designated news room* with resources for reporters including a searchable subject expert database. Develop a marketing strategy to draw in journalists.
 - *Create and update multi-media content* as part of a science spotlight series.
 - *Develop and feature an interactive, clickable* map of the LTER network in a visible location on the website.
 - *Increase incidental exposure* by securing linkages to the LTER site from other websites.
 - *Undertake website search engine* optimization to ensure the LTER and LTER scientists are readily identified as experts online when reporters and others search terms such as “climate change science”.

- LTER SCIENCE SPOTLIGHT – Evaluate science spotlight websites produced by other organizations and develop a web-based LTER pilot project using multi-media content to spotlight new LTER research. The content for the spotlight series should be formatted for and distributed through multiple communication outlets to extend its' reach (e.g., LTER website, E-newsletter, press releases, and the annual *LTER Transformational Science* publication).

- SOCIAL MEDIA MONITORING PROJECT – Undertake a project to monitor all blogs and social network activity that relates to individual LTER sites and the network as a whole; track existing interactions across the web that are relevant to LTER; and use the results to determine if and how LTER should engage in the social media world (e.g., blogs, twitter, podcasts, facebook).

- LTER SCIENCE BLOG & NEW MEDIA CONTEST (*if supported by monitoring project*) – Provide a modest stipend to graduate students to develop a “Notes from the Field” blog featuring the people and faces behind LTER science with fun, personal angles on long-term research. A second blog, “EcoScience” could draw on the research summaries produced for the science spotlight series and the content from the LTER mini-symposium to develop regular posts on science that is relevant to public issues.

³ Communication through an expanded online presence and outreach to the media provides a conduit for reaching the interested public.

STRATEGY FOCUS 2: LTER SCIENCE SPOTLIGHT PILOT PROJECT

The LTER Science Spotlight pilot project is designed to produce compelling science content that can be used in a variety of formats to engage diverse audiences. To generate content for the Science Spotlight series, the Public Information Office could solicit a list of anticipated papers and upcoming experiments from LTER scientists each quarter. With the help of the Executive Director and the Executive Board, papers or experiments are selected for spotlighting. For the selected activities a 1-paragraph distillation is produced by a science writer. A student, staff member or contractor is assigned to produce multi-media content focused on the human interest elements behind the science. In this way, the Spotlight series can help bridge the narrative gap between the quantitative scientific papers and the story tellers.

The Spotlight Series should start with a review of similar existing efforts by other research institutions (such as those listed below) and a pilot project for 2 papers or experiments. As the project develops, the written and multi-media content from the Spotlight Series could be distributed in the following formats:

- Website – fresh front page content.
- E-newsletter – include 2-sentence introduction and link to website.
- EcoScience Blog – feature interesting aspect of the Spotlight in a regular blog.
- Twitter – send out a tweet about new development linked to the Spotlight.
- YouTube – post video content for each Spotlight on YouTube.
- Connect online – create an interactive feature via the website whereby viewers can pose a question, submit an idea or respond to a question embedded in the spotlight directly to author of the paper for a two week period.
- LTER Transformational Science publication – each year compile the content from the Spotlight Series into themes and raw material for an annual "LTER Transformational Science" document.
- Video– as part of this series LTER could also contract with a videographer to produce and post real-time videos of major new scientific experiments as they are conducted.

Examples of online science spotlight models:

<http://smithsonianscience.org/>

<http://www.actionbioscience.org/>

<http://www.fs.fed.us/ccrc/>

Objective 1.3 – TARGET AUDIENCE = DECISION MAKERS

Increase opportunities for scientists to highlight LTER accomplishments to funders and other target audiences.

Tactics

- EXPANDED MINI-SYMPOSIUM – Build on the existing LTER mini-symposium to develop a strategy for Congressional and agency briefings based on an awareness of committee appointments and the budget cycle. Expand dissemination of the mini-symposium content to target audiences through the web-based Science Spotlight series, the *LTER Transformational Science* publication, and special sessions at LTER or scientific society meetings.
- SCIENTIFIC SOCIETY PARTNERSHIPS – Coordinate with the Ecological Society of America (ESA) and American Institute of Biological Science (AIBS) to coordinate opportunities for LTER scientists to interact with funders and government agencies through existing Capitol Hill outreach events.
- SITE OUTREACH – Select 4-6 sites each year to host site visits by local, state and federal elected officials and support these sites with training, materials and best practices.
- LTER ANNUAL REPORT – Publish and distribute an annual “*LTER Transformational Science*” publication to highlight major LTER accomplishments. The publication could feature themes linked to the mini-symposium. Time the printing and distribution of the publication with the mini-symposium to expand the impact of both.

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.*

Objective 2.1 –TARGET AUDIENCE = DECISION MAKERS

Engage decision makers in developing questions and informing distillation activities, particularly for issue-based synthesis efforts.

Tactics

- NETWORK SYNTHESIS INITIATIVES – Equip cross-site synthesis initiatives (e.g., Futures Scenarios, Disappearing Cryosphere) with resources for boundary-spanning activities that help frame, synthesize, and distill research results and convey them in formats suited to the target audiences. These activities will expand the impact of cross-site synthesis efforts and draw attention to the value of LTER research by demonstrating its’ value to issues of public importance. Boundary spanning activities could include the following elements.
 - *Frame salient questions* – Conduct a scan of policy and management issues and engage individuals from target audiences to help develop questions to be addressed through the synthesis effort.

- *Distill implications* – Work with scientists to distill the implications of the synthesis results for specific policy and management questions.
 - *Convey results* – Work with scientists and target audience to produce outreach products that meet the needs of decision makers. These could include: science-based primers, short briefing papers on specific topics, websites with interactive maps or scenario simulations, training materials, etc.
 - *Disseminate findings* – Create a project-specific strategy for sharing outreach products with target audiences. This could include: workshops with managers, briefings for decision makers, press events for journalists, etc.
 - *Track results* – Develop a formative and summative evaluation process to establish metrics that can be used to shape the project over time and to track results.
 - *Share best practices* – Develop and share best practices with LTER community.
- PUBLICATION SERIES – Develop a new LTER publication series featuring Network synthesis initiatives and other efforts. The series would distill long-term research results for decision makers, perhaps as a partnership with a scientific society⁴. As part of this effort, explore new approaches to online publication such as “knowledge exchange” websites.
 - SPECIAL SESSIONS – Host special sessions at LTER All Scientist Meetings, Science Council meetings and other conferences aimed at building connections with decision makers and the broader scientific community.
 - BEST PRACTICES EXCHANGE – Support the work of LTER sites to conduct outreach to decision makers and other scientists by best practices, peer-to-peer exchanges, and communication training to the LTER community. Explore partnering with scientific organizations and existing science communications programs such as:

COMPASS <http://www.compassonline.org/meetings/training.php>
 Aldo Leopold Fellowship Program <http://leopoldleadership.stanford.edu/>
 Switzer Environmental Fellowship Program www.switzernetwork.org
 Heinz Center Institute for Science Communication and Policy Development
<http://www.heinzctr.org/Programs/SCPD/>

⁴ Examples include ESA’s Issues in Ecology series, Hubbard Brook Research Foundation Science Link series, and Harvard Forest Wildlands and Woodlands publications.

STRATEGY FOCUS 3: MBL LOGAN – LTER SCIENCE JOURNALISM PARTNERSHIP

The Marine Biological Laboratory Logan Science Journalism Program has a strong history of effective science immersion programs for journalists (<http://www.mbl.edu/sjp/>). The program has been operating for 23 years and is directed by Christopher Neill, PhD. The MBL Logan program “provides professional science journalists, editors, and broadcast journalists with a chance to forget about story deadlines and the latest breakthroughs, and instead immerse themselves in the process of basic biomedical and environmental research”. The program relies on support from site coordinators and some participation by researchers working at the host site. The program brought ten mid-career journalists from a range of media including National Public Radio, Nature, Audubon Magazine, National Geographic Weekend and the BBC to Toolik Field Station in 2007 to 2010. Journalists conducted hands-on activities associated with research within the Arctic LTER.

As the MBL program matures, there is an opportunity to consider rotating the program to additional field sites which would offer a fresh set of issues and questions for journalists to explore and provide exposure to a larger number of ecological field stations in the US. As a network of 26 diverse field sites with dedicated scientists and students, the LTER network represents a strong potential partner for the MBL Logan Science Journalism Program. Benefits to the LTER include a ready and proven program for developing meaningful relationships with journalists that build deeper understanding and respect for the professions and cultures of science and journalism. The MBL program could connect with the LTER Network in one of several ways. For example, it could:

1. Rotate to a different LTER site each year.
2. Alternate between an eastern US LTER site and other LTER sites.
3. Alternate between existing Toolik Lake site and other LTER sites.

The exploration of a potential partnership should include discussion of shared identity and funding, requirements of sites and site personnel, activities to increase communication capabilities of host sites, and opportunities to expand science communication products that are generated through the program.



MBL Logan Science Journalism Fellow Angela Posada-Swafford (right) captures the moment as scientists at Palmer LTER measure a Brown Skua egg. Photo by Chris Neill.

Objective 2.2 – TARGET AUDIENCE = THE MEDIA

Expand LTER’s capacity to disseminate high-impact scientific findings to local, national and international media.

Tactics

- SCIENCE JOURNALISM PARTNERSHIPS
 - Form a partnership with the Marine Biological Laboratory Logan Science Journalism Program to develop and sustain relationships with science writers and journalists (see Strategy Focus 3).
 - Explore partnerships with science-based radio and television outlets (e.g., Earth & Sky, Living on Earth, National Geographic, Discovery Channel, PBS) by arranging editorial board or producer circle meetings with outlets to brainstorm opportunities.

- THE 3 Rs – RELEASING RESEARCH RESULTS
 - Partner with NSF Public Affairs staff and communication offices at local sites to develop written guidelines for releasing high-impact LTER scientific results to the media. Post the guidelines on the LTER website.
 - Expand the capacity of sites and LNO to disseminate LTER research to DC trade media, science writers/bloggers, and local reporters near LTER sites by working with NSF Public Affairs office to improve access to media contacts.
 - Host science communication information sessions with NSF Public Affairs staff at LTER All Scientists Meetings and through other LTER venues (including webinars).

- RAPID RESPONSE DATABASE & TEAMS
 - Modify the existing LTER personnel directory to provide an online searchable database of LTER scientists willing to serve as subject matter experts for the media. Actively market the database through media societies and journalism programs.
 - Coordinate with ESA and LTER sites to add contact information of willing LTER scientists to the existing ESA expert database (<http://www.esa.org/pao/rrt/>).
 - Research options, including work done by ESA and others, to expand on current models for “ecology rapid response teams” and consider an LTER pilot project.

GOAL 3: *Advance scientific collaboration and innovation by strengthening communication within the LTER Network and between the LTER Network and the broader scientific community.*

Objective 3.1 – TARGET AUDIENCE = LTER COMMUNITY

Promote a shared mission and sense of community by strengthening communication channels for reaching all LTER participants.

Tactics

- WELCOME ABOARD – Develop a more formal welcome process to orient new scientists, staff and students associated with LTER. This should include information about LTER’s history, mission, and structure; research and data protocols; committees and working group; network-

wide research initiatives; schedule of major meetings; and ideas for engaging in LTER communication efforts.

- E-NEWSLETTER – Produce and distribute a coordinated quarterly or bimonthly E-newsletter to consolidate and streamline LTER internal communication.
 - *Start with a quarterly prototype*, monitor its' use and collect feedback from the Communication Committee to fine tune the newsletter.
 - *Include consistent section headings*: committee updates, and site news, major new research as well as links to meeting notes, presentations, and/or decisions.
 - *Set a goal of distributing 6 newsletters /year* and develop internal LNO and site discipline to use this tool to collect and distribute announcements rather than sending a stream of separate e-mail messages.
 - *Develop a mechanism* for site information managers (or outreach coordinators) to directly upload site updates for the newsletter.
 - *Provide a newsletter sign-up link* on the LTER website to draw in external audiences.
- COLLABORATION TECHNOLOGY – Review options for improving ease and accessibility of collaboration technology (e.g. televideo, online meetings, webinars and other technologies) when centralized coordination and technologies are needed.

Objective 3.2 – TARGET AUDIENCE = LTER COMMUNITY

Advance network-scale science, synthesis and other collaborative activities by facilitating regular interactions across sites and among all LTER participants.

Tactics

- FOCUSED WORKSHOPS – Encourage more “some participants” and “among site” meetings and focused workshops to exchange information, explore new science technologies, provide training, and promote activities of research interest groups. Solicit workshop ideas at Science Council meetings for 1-2 focused workshops/year.
- EXCHANGES – Encourage an exchange program in which 1-2 scientists or staff from one site visit annual meetings or special workshops hosted by other sites.
- SOCIAL NETWORK ANALYSIS – Undertake a social network analysis of LTER to improve collaboration and information flow. Review social network best practices of other member-based organizations to improve connections between the LTER Network Office and the sites, among sites, and within sites. For example, see the work of Beth Kanter (www.bethkanter.org and <http://zoeticamedia.com/>).

V. DRAFT LTER Messages

The following draft messages for the LTER Network unfold from a brief tag line and mission statement, to more detailed descriptions of the “who, what, and how” of LTER. These descriptions should be finalized and then adopted for use on the LTER website, Network publications, presentations, and other outreach materials.

A. Proposed Tag Line: *Long-Term Research for Understanding and Sustaining Earth’s Ecosystems*

B. Draft LTER Mission Statement: LTER’s research mission is 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. (Taken from October 16, 2010 version of the LTER Strategic and Implementation Plan).

C. Proposed Messages:

1. LTER is the largest long-term ecological research network in the world and a national scientific resource. It spans 2000 scientists, 26 sites and over three decades of transformative research supported by the National Science Foundation.
2. LTER generates long-term understanding about Earth’s ecosystems that has a transformative effect on science and society. Research sustained for decades provides an unrivaled foundation for decisions related to pollution, shifting land use, climate change and other stresses on vital natural resources.
3. LTER is a national leader in distilling long-term research to guide environmental stewardship and to promote ecological literacy. Policy makers, natural resource managers, educators and students across the US turn to LTER as a trusted source of rigorous scientific research.

D. LTER at a Glance:

On the LTER website or in publications where there is more space available to expand on these messages an “At a Glance” approach can be used. The “At a Glance” text has underlined phrases that would link to additional information online.

1. WHO WE ARE –THE LONG-TERM ECOLOGICAL RESEARCH NETWORK

LTER is the largest long-term ecological research network in the world. It spans 2000 scientists and 26 sites reaching from the Arctic to Antarctic and from the Caribbean to the Pacific. LTER was initiated by the National Science Foundation in 1980 and for over three decades has generated rigorous scientific research to understand and sustain Earth’s ecosystems. As centers of excellence in ecological research LTER sites hosted by universities, government agencies, and non-profit institutions provide extensive opportunities for collaborative research and unparalleled training grounds for the next generation of scientists and decision makers.

2. WHAT WE DO – THE VALUE OF LONG-TERM ECOLOGICAL RESEARCH

The LTER network provides the organizational structure, long-term datasets, and research framework necessary to document and analyze long-term environmental change. The understanding of long-term ecological processes is often hampered by the limits of short-term research efforts. By contrast, the LTER Network enables long-term observation, monitoring and experiments that build knowledge and understanding over time. Most LTER research is related to one or more core themes:

- The health of ecosystems and the effects of human-induced change from intensively managed urban environments to remote natural areas.
- The patterns of biodiversity for a range of ecosystems, land use histories and stewardship activities.
- The nature of critical services that ecosystems provide by regulating water flow and quality; supporting soil fertility; and providing diverse habitats and products.

3. WHAT WE'VE LEARNED – LTER TRANSFORMATIONAL SCIENCE

LTER long-term research has led to important new discoveries and had a transformative effect on science and society. These transformations are articulated in the annual LTER report.

4. HOW WE WORK -- LTER PRINCIPLES & STRUCTURE

The LTER network is dedicated to collaboration, data-sharing, coordination across networks, and communication with diverse audiences.

- LTER welcomes and seeks collaboration with other scientists and scientific institutions.
- LTER fosters scientific understanding by sharing LTER-supported data.
- LTER coordinates with other major research networks in the U.S. to leverage federal investment in environmental monitoring and research.
- LTER engages with target audiences to address questions of shared interest and develop new mechanisms for sharing results with diverse audiences through active education and communication programs.

LTER is a network of 26 independently run research sites. The Network is governed by an elected Chair and an Executive Board comprised of site representatives. The Science Council is made up of representatives from each site and establishes the scientific direction and vision of the LTER Network. A number of Standing Committees support and inform LTER oversight and management. An LTER Network Office (LNO) that is funded separately by the National Science Foundation coordinates communication, network publications, and research-planning activities.

VI. Proposed Implementation Strategy

The Ad Hoc Communication Committee working with the Executive Board, LNO and members of the wider LTER community should implement the LTER Strategic Communication Plan starting with the proposed steps outlined below. The standing Communication Committee should annually review the entire communication plan and look for opportunities to advance additional elements.

A. Getting Started

Build Communication Capacity

1. Form standing Communication Committee

Next steps:

- Executive Board to appoint standing Communication Committee which will be charged with implementing the LTER Strategic Communications Plan, starting with the priorities articulated in the Executive Summary and Section VI: Proposed Implementation Strategy.

Timeframe: 12/2010

By whom: Executive Board

Anticipated resources: none needed

2. Hire Communications Manager or Director

Next steps:

- Propose new senior LTER communication position to Executive Board.
- Secure funding for the position.
- Develop and circulate job description.
- Advertise, interview and hire for new position.

By whom: Executive Board; Communication Committee

Timeframe: 2/2011 - 12/2011

Anticipated resources: \$100,000-\$200,000/year (depending on compensation)

3. Develop a flexible site supplement program

Next steps:

- Executive Board to determine appropriate strategy for funding supplement program.
- Communication Committee draft supplement proposal.
- Submit proposal to appropriate entity.
- Upon funding, Executive Board implements equitable plan to distribute funding.
- Issue announcement of new supplements to sites.

By whom: Executive Board and Communication Committee

Timeframe: 3/2011 – 12/2011

Anticipated resources: \$25,000 per site x 10 sites to 26 sites = \$250,000-\$650,000 annually

Launch Three Flagship Projects

1. Create new LTER gateway website

Next steps:

- Establish a Website Task Force as a subcommittee of the LTER Communication. Committee to review model websites, build on recommendations in communications plan to identify additional characteristics needed to reach target audiences, and develop detailed process and budget for new website.
- Engage consultant(s) as necessary to visualize website, develop architecture, and plan implementation.
- Develop and circulate Scope of Work to implement website and request for proposals (RFP) and review proposals.
- Hire and work with vendor to implement website.

By whom: Website Task Force (subcommittee of Communication Committee) and LNO

Timeframe: completed by 2012-2013

Anticipated resources: \$100,000 - \$500,000 (to design and build)

2. Equip Network Synthesis Initiatives with Communication Resources

Next steps:

- Solicit budget and work plan for a communications pilot project associated with existing synthesis project.
- Executive Board to examine options to fund pilot project.
- Obtain 2 years of funding at \$50,000/year through redirection of existing funds, proposals to relevant agencies, foundations or programs, or supplement requests.

By whom: Communication Committee and Executive Board

Timeframe: 1/2011 – 12/2012

Resources: \$50,000/project/year

3. Form new MBL Logan-LTER Science Journalism Partnership

Next steps:

- Designate subset of Communication Committee to meet with Chris Neill, Director of the MBL Logan Science Journalism Program to scope out partnership.
- Develop written case statement with objectives, program description and budget and seek Executive Board approval.
- Identify funding sources and develop implementation plan.

By whom: Subset of Communication Committee

Timeframe: 1/2011 – 12/2012

Anticipated resources: \$50,000 - \$75,000/year

Take Small Steps Now

DECISION MAKERS

1. Adopt tag line, mission statement, and three core messages

Next steps:

- Circulate tag line, mission statement and core messages to LTER community for comment.
- Communication Committee revise language as needed and provide to Executive Board for approval.
- Integrate language into LTER website and written materials.

By whom: Communication Committee

Timeframe: by 1/2011

Anticipated resources: none needed

2. Expand Mini-symposium

Next steps:

- Identify additional target audiences for briefings based on mini-symposium theme (e.g., federal agencies, inter-agency working groups, Congressional staffers).
- Request assistance from AIBS to set up briefings.

By whom: Communication Committee, Executive Board Chair, and Mini-symposium Chair

Timeframe: by 2/2011

Anticipated resources: \$5,000

3. Publish and distribute LTER Transformational Science publication

Next steps:

- Define purpose, scope and primary audiences for publication.
- Develop outline, content and lay-out for publication.
- Review and approve by Executive Board.

By whom: LNO Executive Director, Public Information Officer, Executive Board, and Science Council

Timeframe: 9/2011 and each Sept. thereafter

Anticipated resources: \$5,000 to \$10,000

THE MEDIA

1. Develop written communication guidelines and organize webinar series

Next steps:

- Work with NSF to draft guidelines for releasing research results.
- Schedule and promote four communication webinars for 2011: (1) release of communication plan, (2) guidelines for releasing high-impact research results, (3) developing an LTER online communication strategy, and (4) stakeholder engagement exchange.
- Create communications page on web site to provide guidance for releasing research results

By whom: LNO Public Information Officer, NSF Public Affairs

Timeframe: 12/2010 – 12/2011

Anticipated resources: none needed

2. Expand LTER use of expert contact databases

Next steps:

- Analyze the needs of potential users of the expert contact database
- Determine the key topics as well as the expert contact information to include in the database
- Work with Information Management Committee and the LNO to consider options for modifying the existing LTER personnel directory to create an experts database that is searchable by topic and easily accessible by target audiences.
- Reach out to ESA to explore the potential for adding willing LTER scientists to the existing ESA “rapid response team” website/database.

By whom: Communication Committee and Information Management Committee and the LNO

Timeframe: 1/2011 – 12/2012

Anticipated resources: none needed

LTER COMMUNITY

1. Transition the LTER Network Newsletter from print to electronic

Next steps:

- Develop mission statement and outline for e-newsletter for review by Communication Committee.
- Develop relationships with contacts at each site to provide content for the electronic newsletter
- Test e-newsletter and track which sections are viewed most frequently and include a mechanisms for readers to offer ideas for new sections or content, and adapt format as needed.
- Find or adapt software that will allow electronic content to be formatted and printed on demand
- Begin with quarterly issues and expand to bimonthly distribution as content becomes available.

By whom: Site contacts, Communication Committee with LNO ED and PIO

Timeframe: 1/2011 – 12/2012

Anticipated resources: existing resources

2. Encourage LTER site exchanges and focused workshops

Next steps:

- Solicit ideas from the Science Council for 1-2 focused workshops each year.
- Invite Executive board to designate specific funds to be used each year for site exchanges.
- Consider including proposals for site exchanges in the annual working group competition.

By whom: LNO, Executive Board (site exchanges) and Science Council (workshops)

Anticipated resources: existing LNO working group funds, site funds

Conduct Additional Communication Research

1. Explore science spotlight websites, knowledge exchange websites and rapid response teams

Next steps:

- Communications Committee should designate one or more staff member, information manager, committee member or graduate student to review existing models.
- Designee should provide a report on the review to the Communication Committee and recommend next steps.
- Integrate recommendations into redesign of the LTER website.

By whom: Communication Committee with assistance of 1-2 volunteers

Timeframe: report back to Communication Committee by March, 2011

Anticipated resources: none for research

2. Conduct an LTER social media monitoring project

Next steps:

- Identify 1-2 volunteers within the LTER Network to review examples of other social media monitoring plans and undertake a short-term project for LTER.
- Define target questions and key words for monitoring effort and use web-based tools to monitor social media activity for 2-3 months.
- Present results to Communication Committee with early ideas for LTER's next steps in social media.

By whom: Communication Committee with assistance of 1-2 volunteers

Timeframe: report back to Communication Committee by March, 2011

Anticipated resources: none needed

3. Undertake an LTER social network analysis

Next steps:

- Undertake a social network analysis (SNA) for LTER using volunteers with SNA experience within the LTER Network or by hiring an external consultant.
- Use the results of the analysis to identify areas where connectivity and information exchange are high and areas where they need to be improved.
- Review approaches used by member-based networks that have effective social networks and distill a set of best practices.
- Report back to Communication Committee with examples and recommended next steps for strengthening the LTER social and organizational network.

By whom: Communication Committee with assistance of volunteers or consultant

Timeframe: report back to Communication Committee by March, 2011

Anticipated resources: up to \$10,000 if social network consultants are needed

B. Draft Communication Metrics

The Communication Committee should strive to track the impact of the LTER Strategic Communication Plan using a set of concrete metrics for each communication goal. The following draft metrics should be considered when developing final metrics for the first phase. Quantifying these metrics may be challenging at the outset, but supporting systems could be put in place over time.

1. Metrics for Goal 1

- Formation of Communication Committee by 12/2010 with clear charge and robust participation, as measured by attendance at meetings and follow-up on committee assignments.
- Creation of new communication position with new staff hired by end of 2011.
- Establishment of new supplement program with 10 sites awarded supplements by 12/2011.
- Increase in total number of discrete visitors and page views for the LTER website and number of visitors from defined target audiences, as measured using web analytics
- Increase in media coverage of LTER as measured by LexisNexis (or other search tools).

2. Metrics for Goal 2

- Increase in number of individuals within the target audience who request information from LTER sites or LNO.
- Increase in number of non-LTER individuals who receive LTER e-newsletter.
- Increase in number of cross-site initiatives that result in activities and publications aimed at decision makers and the media.
- Increase in extent to which major decisions affecting ecological systems refer to LTER and are consistent with LTER science.

3. Metrics for Goal 3

- Increase in number of students, staff and scientists who understand and embrace the LTER approach as determined through an LTER survey and other forms of feedback.
- Increased level of satisfaction in communication and information sharing across the LTER network as reflected in the number of cross-site activities that are advanced and in LTER survey results.

C. Summary

The LTER network of sites and its' long-term research dating back more than three decades offers an unmatched foundation for improving the scientific basis of decision making. A strategic communication program that prepares the ground for creative and sustained two-way exchange with decision makers, the media and the broader scientific community has the potential to establish LTER as a national leader in bridging to broader audiences. In order to realize this potential it is clear that substantial investment is needed in communication capacity, expertise, and resources to foster communication and boundary-spanning activities at the site and cross-site level. This plan provides a roadmap for developing and directing that investment.

VII. References

- Franklin, J. F., C. S. Bledsoe, et al. 1990. Contributions of the Long-Term Ecological Research Program. *BioScience*. 40(7): 509-523.
- Groffman, P.M., C. Stylinski, M.C. Nisbet, C.M. Duarte, R. Jordan, A. Burgin, M. A. Previtalli, and J. Coloso. 2010. Restarting the conversation: challenges at the interface between ecology and society. *Frontiers in Ecology and the Environment*. 8(6): 284-291.
- Hobbie, J. E., S. R. Carpenter, et al. (2003). The US Long Term Ecological Research Program. *BioScience*. 53(1): 21-32.
- Lubchenco J. 1998. Entering the century of the environment: a new social contract for science. *Science* 279: 491–97.
- NSF (National Science Foundation). 2002. Long-Term Ecological Research Program: Twenty-Year Review. A report to the National Science Foundation. 39 pp.
- Peters, D.P., P.M. Groffman, K.J. Nadelhoffer, N.B. Grimm, S.L. Collins, W.K. Michener, M.A. Huston. 2008. Living in an increasingly connected world: A framework for continental-scale environmental science. *Frontiers in Ecology and the Environment*. 6:229-237.

VIII. Appendices

- A. LTER Communication Survey - Summary of Responses
- B. LTER Ad Hoc Communication Committee – Meeting Summaries
- C. List of Reviewers
- D. Model messages for other science organizations
- E. LTER Strategic Implementation Plan – Communication Table

Appendix A.

LTER COMMUNICATION SURVEY SUMMARY OF RESPONSES MAY 8, 2010

A. Survey Response Statistics

Responses = 216

Completion rate = 79% completed survey

B. Demographics of Respondents

Degree (n=137)

PhD = 86

MS/MA = 31

BS/BA = 20

Age bracket

33 to 46 = 30.5%

56+ = 23.4%

21 to 32 = 22.8%

47 to 55 = 22.8%

Affiliation (top 6)

LTER Co-PI = 42

LTER graduate student = 25

LTER site scientist/educator = 21

LTER information manager = 14

LTER education coordinator/ researcher = 13

LTER PI = 11

C. Summary of Responses by Category

PART I: SCOPE & GOALS

- Learn about desired scope of LTER communication strategy.
- Solicit opinions about the desired goals & objectives.

Summary: The survey results suggest that LTER should develop a communication strategy that is consistent with the audiences and priorities articulated in the LTER mission statement and that targets external audiences through activities at and across LTER sites including synthesis, translation and dissemination of scientific findings. Responses further suggest that attention should be given to internal audiences, network activities and the potential for LTER to play a leadership role in communication efforts that span other networks. The potential for serving vulnerable populations and using the arts and humanities to promote appreciation for the natural world may warrant special attention.

All goal statements drafted for the survey were highly supported by respondents. Commonly cited “additional communication goals” include:

- promoting ecological literacy among the general public,
- advancing appreciation for local ecosystems by constituents near LTER sites,
- informing funders of value of long-term research and LTER,
- developing a two-way exchange with policy makers and natural resource managers to guide decision making, and
- strengthening communication about activities within the LTER network to LTER constituents.

Novel ideas for communication goals include:

- encourage understanding and appreciation of ecosystems through the work of arts and humanities at LTER sites,
- create a link between protected areas monitoring data bases and LTER data bases, and
- enhance ability of LTER scientists to engage in network-scale science & synthesis by reducing communication barriers

PART II: TARGET AUDIENCES

- Gather information to rank the importance of specific target audiences and beliefs about extent to which current programs serve the audiences.

Summary: Survey responses suggest that the LTER communication strategy should target the three groups of constituents below. The results further indicate that the communication strategy should include recommendations for better aligning resources and efforts with priority audiences and for communicating more effectively with LTER constituencies about the existence of those activities to address the prevalence of “I don’t know” responses.

Primary audience: LTER scientists & students
Funders (including NSF)
Decision makers (state & federal agency officials and legislators)

Secondary audience: Other scientists (beyond LTER)
Conservation organizations
Scientific societies
Media

Tertiary audience: K-12 teachers
General public

PART III: ROLES & NEEDS

- Gather perspectives regarding the role of the LTER Network Office and individual sites in LTER communication.
- Increase understanding of communication barriers and needs of LTER sites.

Summary:

The survey results suggest that the communication strategy should consider ways to expand the role of the LTER Network office to advance innovative communication and broaden the activities beyond conventional public information. Results further indicate that the strategy should explore the feasibility of expanding funding, staff resources, and professional development for site or cross-site outreach and communication programs to address what survey respondents suggest were the greatest barriers: funding, time and skills.

PART IV: PROGRAM DIRECTION

- Determine use of existing LTER Network Office communication tools and activities.
- Gauge community interest in additional program activities for target audiences.

Summary:

In general, survey respondents had the highest level of interest in contributing to activities that engage decision makers and had strong interest in contributing to activities that engage journalists. There appears to be a group of dedicated people interested in contributing to efforts serving educators (1 out of 5). Less interest was expressed in contributing to activities that serve the general public and to the extent there is interest, it is largely through field tours.

In reaching decision makers and the media, respondents had the greatest interest in contributing to the following activities (rated >50% of respondents responded with “very or somewhat interested”):

- Workshops with stakeholders (e.g., managers, agency officials) to define critical questions
- Issue-based synthesis papers in the peer-reviewed literature
- Issue-based synthesis documents translated for non-scientists
- 2-page summaries for decision makers
- In-person briefings with management and policy stakeholders
- Policy, communication & media training for LTER students and scientists
- Joint efforts with professional societies (e.g., ESA, AGU) to disseminate research results
- Journalist site tours or “science days” at LTER sites
- Media releases and events targeted to specific ecological issues
- Short-term rapid response team available to answer questions from journalists on specific issues

In terms of communicating within LTER and use of LTER products, the majority of respondents turn to email first to receive information about LTER activities, then the electronic newsletter, and then to the website. Most people do not prefer printed materials, social networking or virtual meetings. Most respondents use site-based websites, the LTER public website, the LTER intranet and online databases most often to seek out information

about LTER. The Oxford synthesis volumes and online webcasts of LTER meetings are not frequently used. (Note: frequency of use by this particular audience should not be interpreted to mean these products are not important. Some may be directed at non-LTER audiences).

SUMMARY OF IDEAS GENERATED BY LTER SURVEY RESPONDENTS – May, 2010

WHO	WHAT	HOW
DECISION MAKERS	Increase awareness of existence of LTER Network as “centers of excellence and integration in ecological research”	Through outreach programs to decision makers at local, state, and federal levels Through expanded media presence (see “media” below)
Policy makers	Improve use of LTER science for ecologically sound management and policy	Establish 2-way dialogue (with support) – LTER scientists should hear from environmental managers about what they need through roundtables, workshops, partnerships, “scanning”
		Develop and promote list of core research priorities key to promoting, across society, long-term ecological sustainability
		Co-develop studies that increase knowledge for land management and policy
		Make insights more applicable & more easily understood - develop and “provide translational modes” for LTER science (e.g., visualization, video, etc.)
	Increase communication with government agencies that have as a part of their mission statements an aspect of the LTER's mission statement.	This could potentially be done within an internet network where government agencies and the LTER communicate and ultimately work together developing studies that would help with better land management while increasing the knowledge of the ecology of the land.
Natural resource managers	Increase information on protected areas management and help land managers make informed decisions	Create a link between protected areas monitoring data bases and LTER data bases
		Create an online resource about local ecosystem, e.g. Miami area has everglades, Biscayne bay, Atlantic and numerous freshwater and saltwater habitats
		Develop courses and training for policy and conservation professionals
		Provide training in translation/science writing, communication with policy makers for scientists
FUNDERS		
Members of	Increase awareness of LTER and understanding of	Lobby congress on the value of LTER

Congress, federal agency officials, state and local government officials	importance of funding <i>long-term</i> research	
		Demonstrate value by serving as a resource on a key issue
		Arrange sites tours/visits for key stakeholders
LTER Scientists and Students		
	<p>Raise awareness of LTER Network goals and activities within the LTER community & promote active participation</p> <p>Promote engagement and enthusiasm – LTER is a benefit to individuals involved and needs their participation to thrive</p>	<p>Identify mechanisms for communication at multiple interfaces, e.g. site-site, site-LNO, and network-network</p> <p>More communication from, to, between existing LTER sites (Deal with internal communication problems first, e.g., graduate students don't know much about the network).</p>
	<p>Enhance ability of LTER scientists to engage in network-scale science & synthesis by reducing communication barriers</p> <p>Promote interdisciplinary collaboration</p>	
	<p>Improve coordination between sites and the LTER Network Office on technology development;</p> <p>Increase communication about interoperability & standardization</p> <p>Establish LTER as primary data repository</p>	
	Expand diversity of people involved in LTER through outreach to underrepresented groups	

MEDIA		
Journalists	Raise awareness that LTER exists, can be a resource to them and how it is different from other science/studies	Classes and tours for journalists
	Expand coverage of major LTER findings by the media (earned media)	Encourage sites to distribute at least 4 press releases each year, provide model press release Capture and further distribute media coverage Support the distribution of site press releases through LNO/NSF
	Use media to raise awareness of general public /constituents of policy makers of LTER and its benefits “The LTER system has the potential to have the popularity and funding of NASA if we could only find a way to advertise ourselves such that we become part of the everyday zeitgeist of Americans.”	Feature LTER in ecology-based TV shows Paid media – commercials, radio spots, site-based nature shows The LTER network should conspicuously make themselves known and of use to documentary film-makers
EDUCATION (K-16)		
	Enhance ecological literacy	Partnerships that link museums work with state of the art web portals
	Expand understanding of what science is and how it is done	Research experiences for students and teachers
		Encourage collaborations with arts and humanities
GENERAL PUBLIC		
Society	Raise awareness of LTER and its work	Annual report on state of the network for public release – taxpayers should know what we are doing and why Through the media (see above)
	Encourage understanding and appreciation of ecosystems and dependence on ecosystem services	Through the work of arts and humanities at LTER sites Media campaigns

	Build local support among elected officials and constituents	
Local public (schools, citizens, elected officials/local government)	Promote place-based ecological understanding Raise public awareness of significant local issues	Community based education activities, community engagement through citizen science programs

Appendix B.

LTER Ad Hoc COMMUNICATION COMMITTEE
Planning Conference Call
April 19, 2010
Meeting Summary

I. Discussion of Communication Strategic Plan Focus and Process

Role of Ad Hoc Communication Committee

- Advisory – serves as sounds board to help define the process of developing a strategic communication plan
- Working group – provides input on priorities and strategies for communication strategy
- Ambassador – represents the work of the committee and evolving results to members of the larger LTER community.

Comment – committee should convey to others that the planning is going on, that it is a serious effort, and that it could results in an important new initiative.

Questions from committee

What is the appropriate scale of the effort? Based on initial input, should it become a larger activity similar to the effort that led to the development of the ISSE?

Purpose – should the effort focus on the structure of content of communication?

Is the communication strategy a site-based or network office plan?

- As a centralized effort is it currently ad hoc.
- An entirely distributed model is unsustainable.
- Hybrid is most likely.
- Could be analogous to NIS – sites initially developed their own ways of handling data, today they think about the site-network connection and the efforts co-inform one another.
- Network perspective adds context – the “why” for doing these things
- Network could also help develop key messages that are then deployed locally in a variety of ways
- Network could play a facilitating role – provide training, share best practices and effective communication mechanisms, share understanding of stakeholder interests across networks

II. Discussion of Survey Results

The committee discussed the attached summary of the survey results. There was general agreement with the interpretation of results in the summary.

Suggestions

It would be useful to develop a suite of examples of current activities that are going on that would be good examples of what we envision in the communication plan. Do not need to start from scratch. Many excellent site-based activities.

Communication plan could help advance innovative science across the network – such NIS tiger teams. By looking across network, can frame a question in a way that had been previously articulated and thereby spur new approaches to address it.

III. Preparation for Science Council Meeting

The group discussed the approach to the Science Council meeting. With the 30 minutes available cover the following topics:

Bob Waide

- Introduction of the effort and committee
- History of the effort, why we are doing it, and outcomes

Kathy

- Process for developing the plan
- Results of the survey

David

- PI perspective
- Raise question of the scale of the effort and approach to engaging larger community

IV. Communication & Outreach Resource List

MEDIA OUTREACH

Practitioners:

- Cheryl Dybas - NSF
- Chris DeCardy – Packard Foundation
- Lisa Palmer – Science Writer
- Don Torrance – Director of Journalism Program, Syracuse University
- Amy Kostant - Science Communication Network
- Yale Forum on Climate Change & the Media

Scholars:

- Matthew Nisbet – American Univeristy
- Anthony Leiserowitz –Yale School of Forestry & Environmental Studies

PUBLIC POLICY INTEGRATION

Practitioners:

- Robert Gropp - AIBS
- Nadine Lymn - ESA
- Cliff Duke - ESA
- Kathy Jacobs - OSTP
- Kathy Fallon Lambert – Harvard Forest

Scholars:

- Bill Clark – Harvard Kennedy School
- Nancy Dickson – Harvard Kennedy School

SYNTHESIS

Charley Driscoll – Hubbard Brook Science Links
Barbara Bond – Andrews Forest Futures Project
David Foster – Harvard Forest Wildlands and Woodlands Initiative

EDUCATION

Alan Berkowitz – Cary Institute
Wendy Graham – NEON

Notes from LTER Communication SIP and Committee meeting

May 14, 2010

VISION

Our vision is a communication program that links scientific research with pressing societal issues to provide valuable information to key constituencies in a timely, consistent, and easily understood manner.

MISSION

The communication mission of the LTER Network to engage and communicate with funding sources, policy makers, the scientific community, and the public in national and international settings through a two-way dialogue and to disseminate scientific findings of interest and importance to these constituencies.

STRENGTHS & OPPORTUNITIES

PEOPLE

- Many LTER sites, scientists and staff have national and international expertise in engaging diverse stakeholders, delivering research results to policy makers and decision-makers.
- A history in the LTER of communicating findings to the public, resource managers and other constituencies.
- People who are experts in a wide range of topics.
- A diverse, productive and interactive network that has great potential for enhanced communication of scientific findings to potential beneficiaries.

PARTNERS

- Multiple partner institutions of the LTER sites provide numerous opportunities for knowledge transfer at the national and international levels.
- Opportunities to partner with specialists communicating with key constituencies are frequent.

- Opportunity to engage with other scientific communities/networks working on issues of human/environment interactions – GLP Global Land Project and others.

COMMITMENT & RESOURCES

- Long-term program commitment that provides information base, knowledge, relationships.
- The LTER Network has expertise, interest and resources within the LNO that can contribute to the implementation of a communication strategy.
- Existing technology base to implement new ways of disseminating information and communicating with the public.

CONTENT - Important and compelling science that is (or ought to be) relevant to society.

CHALLENGES/WEAKNESSES

- Lack of knowledge about how to communicate effectively with external parties – need to make the findings of environmental research tangible and visible to the public.
- Lack of effective dialogue with end users.
- Resources (including time) for communication are limited – funding, time, staff/human resources, expertise.
- Institutional barriers – incentives, priorities within academic institutions.
- Poor understanding of regional and audience diversity and how to develop strategies and messages that address that diversity .
- Knowledge of communication strategies, technologies and costs is very unevenly distributed within the LTER Network.
- Lack of clear communication priorities for LTER Network – don't have a clear plan

GOALS

- Become recognized as a leading expert on ecological issues for decision makers and the media.
- Foster knowledge exchange between the LTER Network and external parties to enhance the scientific basis for decision making.
- Enhance collaboration and innovation across the LTER network.

Listing of Draft Goals, Objectives and Actions - May 14, 2010 Ad Hoc Communication Committee

1 Become recognized as a leading expert on ecological issues for decision makers and the media.

1.1 Establish strategic partnerships with scientific societies, NGOs and others – use their vehicles to help reach target audiences. For example - want ESA to refer media to LTER and have LTER get involved in rapid response teams.

1.1.1 Build on what works and refer to experts in specific communication fields to guide efforts

1.1.2 Join other science organizations in developing media briefing papers with LTER scientists listed for contact.

1.1.3 Work with NSF public relations and publications staff

1.1.4 Establish partnership with MBL Science Journalism Program.

1.2 Strengthen LTER brand – website, tag line, name recognition.

1.3 Clearly articulate and distinguish unique strengths of LTER and its connection to other networks (e.g., NEON). Positioning. Make LTER more prominent among key audiences.

1.4 Establish dialogue and relationships with key constituents to define scientific questions relevant to policy and management needs.

1.4.1 Develop mechanisms to deliver LTER research to target audiences based on input on needs of target audiences as defined by those audiences

1.4.2 Establish relevance and frame research in terms of public issues.

1.4.3 Build relationships with target audiences to gain credibility and legitimacy and become a trusted source.

1.4.4 Develop special sessions at LTER meetings and invite non-scientists to participate with genuine process for engagement.

1.4.5 Convene workshops & roundtables with key stakeholders to help frame issues in order to most effectively link science with stakeholder information needs.

1.5 Improve capacity to develop and distribute press releases to national media related to site- based research and new findings.

1.5.1 Host webinars for journalists on key topics of current interest.

Host online press conferences when major new research released.

1.5.2 Revamp LTER website with: Designated news room

Website – revamp for media and decision makers.

1.6 Develop list of experts available for comment associated with key meetings or topics and circulate expert lists with “media tip” as issues emerge.

1.7 Consider developing “response team” associated with significant national or international issues/discussions.

1.8 Organize ecological science field trips and classes journalists in conjunction with sites.

2 Foster knowledge exchange between the LTER Network and external parties to enhance the scientific basis for decision making.

2.1 Link synthetic research focused on questions relevant to stakeholders with communication materials and outreach activities to translate key findings for non- scientists.

2.1.1 Distill, translate, synthesize information in terms of relevant issues.

2.1.2 Distill (synthesize) data and findings into information useful to non-scientists.

2.2 Support and provide guidance to sites for building personal relationships with decision makers at the local and regional scale.

2.3 Expand opportunities for scientists to highlight the importance of long-term research and outcomes of LTER research to DECISION MAKERS (e.g., members of Congress and representatives from key funding agencies and other decision makers).

2.4 Develop special sessions at conferences and regional meetings to bring together policy and science community.

2.5 Potential strategy - To create publication venues to highlight LTER research.

2.5.1 Book series – site synthesis volume. Evaluate strengths and weaknesses of book series and other modes of scholarly outreach.

2.5.2 Produce material to communicate value of LTER Network.

2.6 Provide LTER information for displays at informal education and other outlets – particular with existing partner organizations.

2.7 Equip LTER-supported cross-site synthesis efforts with communication and outreach resources.

2.8 Expand existing Mini-symposium to include briefing for Congressional staffers and visits to member offices.

2.8.1 Develop Congressional outreach strategy.

2.9 Increase contact with the private sector/business and industry both as an audience for information and for resources to expand communication initiatives (within limits of conflict of interest policies) – remove?

2.10 Establish Science Translation and Outreach Office in DC with 3 staff members.

3 Enhance collaboration and innovation across the LTER network.

3.1 Improve communication within the LTER Network so that all LTER scientists and staff have a clear idea of the vision, mission, goals, objectives, and activities ongoing within the network.

3.1.1 Increase information sharing about scientific achievements, educational opportunities, funding opportunities and the progress on LTER initiatives and how to get involved.

3.2 Increase regular interactions across sites and across roles to improve ability of LTER personnel to engage in network-scale science, synthesis, and proposal generation.

3.3 Improve understanding and consistent use of network standards, and protocols, as well as data sharing and coordination between sites and the LTER Network Office.

3.4 Increase network activities that engage more people at the sites – activities for graduate students related to new science technologies, small targeted workshops and piggyback with existing meetings. More “some scientists” meetings/workshops.

3.4.1 Network needs to develop mechanisms by which “research interest groups” can more effectively interact – such as “among site” meetings for particular LTER types with associated communication strategy and support.

3.5 Overhaul LTER communication tools to include greater use of new media and current technologies.

3.5.1 Use leading edge communication tools

3.5.2 Expanded use of social media, twitter and RSS feed, YouTube presence

3.5.3 Use creative communication tools to solicit ideas and engage external audiences (e.g., NASA website) through network level activities and include feedback mechanisms

3.5.4 Coordinated monthly email briefing to consolidate and streamline communication – include committee meeting dates and headlines on things that are happening.

3.6 Develop short video features/profiles of scientists

3.7 Develop “toolbox” with a model strategy and training for site representatives for reaching local, state and federal officials.

3.7.1 Share the results and process of developing this material with LTER network members to provide a model for site-based efforts.

3.7.2 Provide site supplements for sites to develop a communication strategy including an electronic communication strategy – similar to CAP LTER.

3.8 Scientist exchange – 1-2 scientists from one site visit annual meetings of other sites.

3.9 Involve information manager in communication strategies and activities.

3.10 Establish (and perhaps fund) as designated LTER communication contact at each site.

Appendix C.

Committee input:

David Foster
Peter Groffman
Robert Waide
Phil Robertson
Karen Baker
Nicole Kaplan
Dan Reed
Jonathan Walsh
Daniel Nidzgorski
McOwiti Thomas
Marcia Nation

Individual discussions:

Meryl Alber
Hugh Ducklow
Ted Gragson
Mark Williams
Nick Oehm
Dan McGuire
Barbara Bond
Chris Neill
Emery Boose
Julie Pallant

External input:

Cheryl Dybas
Chris DeCardy

USGS: Your source for science you can use

“Science in a Changing World”

As an unbiased, multi-disciplinary science organization that focuses on biology, geography, geology, geospatial information, and water, we are dedicated to the timely, relevant, and impartial study of the landscape, our natural resources, and the natural hazards that threaten us. Learn more about our goals and priorities for the coming decade in our [Science Strategy](#).

National Science Foundation: “Where discoveries begin”

NSF AT A GLANCE

The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." With an annual budget of about \$6.9 billion (FY 2010), we are the funding source for approximately 20 percent of all federally supported basic research conducted by America's colleges and universities. In many fields such as mathematics, computer science and the social sciences, NSF is the major source of federal backing. [MORE](#)



 View a 2-minute [video overview](#) of NSF's mission and focus.

Visit NSF's new [Open Government Initiative Web site](#).

WHO WE ARE

NSF leadership has two major components: a [director](#) who oversees [NSF staff and management](#) responsible for program creation and administration, merit review, planning, budget and day-to-day operations; and a 24-member [National Science Board \(NSB\)](#) of eminent individuals that meets six times a year to establish the overall policies of the foundation. The director and all Board members serve six year terms. Each of them, as well as the NSF deputy director, is appointed by the President of the United States and confirmed by the U.S. Senate. At present, NSF has a total workforce of about 2,100 at its Arlington, Va., headquarters, including approximately 1,400 career employees, 200 scientists from research institutions on temporary duty, 450 contract workers and the staff of the NSB office and the Office of the Inspector General. [MORE](#)



WHAT WE DO

As described in our [strategic plan](#), NSF is the only federal agency whose mission includes support for all [fields of fundamental science and engineering](#), except for medical sciences. We are tasked with keeping the United States at the leading edge of discovery in areas from astronomy to geology to zoology. So, in addition to funding research in the traditional academic areas, the agency also supports "high-risk, high pay-off" ideas, novel collaborations and numerous projects that may seem like science fiction today, but which the public will take for granted tomorrow. And in every case, we ensure that research is fully integrated with education so that today's revolutionary work will also be training tomorrow's top scientists and engineers. [MORE](#)



HOW WE WORK

NSF's task of identifying and funding work at the frontiers of science and engineering is not a "top-down" process. NSF operates from the "bottom up," keeping close track of research around the United States and the world, maintaining constant contact with the research community to identify ever-moving horizons of inquiry, monitoring which areas are most likely to result in spectacular progress and choosing the most promising people to conduct the research. [MORE](#)



Appendix E: LTER Strategic Implementation Plan – Communication Table

The following table outlines the priority level, timeframe, status and responsible parties for each of the actions described on the preceding pages. The priority level was established based on a general assessment of need, potential impact, opportunity, and available funding.

Objective	Actions	By Whom	Location	Priority Level	Time Frame	Status
1A. Build public engagement and communication capacity	Form a standing LTER committee for Public Engagement and Communication	LNO EB	LNO	High	9/2010-12/2010	Underway
	Add 1-2 FTEs as staff or equivalent contractor support to meet current demands and explore the potential for establishing a new LTER Science Translation and Outreach Program (LTER STOP) through regional coordinators, centralized staff, or cross-site activities.	LTER EB and CC	LNO or other	High	9/2010-12/2011	Needs planning
	Develop a proposal for a new site supplement program to support engagement and communication efforts at LTER sites and support site efforts by developing and sharing best practices	EB	sites	High	9/2010-12/2011	Needs planning
1B. Strengthen LTER name recognition and reputation among media and other target audiences	Create a new LTER gateway website with emphasis on eternal audiences	LNO oversee contractor	LNO and sites	High	2012-2013	Needs planning
	a. Review existing models and create new Science Spotlight series to develop and deliver multi-media content in a variety of formats.	LNO oversee contractors, interns, graduate students	LNO and sites	High	1/2011-12/2012	Needs planning
	A. Engage the LTER community in developing new multi-media content					

Objective	Actions	By Whom	Location	Priority Level	Time Frame	Status
	a. Host 2 LTER Science Blogs one by students and one derived from the Spotlight content	LNO Public Information Officer (PIO) coordinates	LNO and sites	Medium	1/2011-12/2012	Funded, needs planning
	b. Sponsor LTER video, photography, and new media contest for LTER students and scientists	LNO PIO coordinates	LNO and sites	Low	1/2012-12/2013	Funded, needs planning
1C. Expand relationships with local, regional and national media	Develop new programs to build and sustain connections with journalists					
	<ul style="list-style-type: none"> Explore partnership with an ecological science-based field journalism program 	LNO ED with 1-2 lead PIs from SC	LNO and sites	High	1/2011-12/2012	Needs planning
	<ul style="list-style-type: none"> Organize annual journalists' field trips to LTER sites 	LTER sites	sites	Medium	1/2011-12/2012	Needs planning
	<ul style="list-style-type: none"> Find and explore partnerships with journalists, media outlets (e.g. Earth & Sky, National Geographic, DC trade media, science bloggers). 	LNO ED, PIO, NSF Public Affairs staff	LNO and sites	Medium	9/2010-12/2012	Needs planning
	B. Provide expanded guidance to sites on the 3Rs – Releasing Research Results					
	a. Partner with NSF Public Affairs staff to develop written guidelines for sites that outline the process for releasing new scientific results	LNO PIO with NSF Public Affairs staff	LNO and NSF	High	9/2010-12/2011	Funded, needs planning
	b. Host LTER communication webinar with NSF Public Affairs staff to share guidelines with LTER IMs, education, and outreach personnel	Coordinated by LNO PIO	LNO	High	1/2011-12/2012	Funded, needs planning
C. Expand LTER resources for journalists						

Objective	Actions	By Whom	Location	Priority Level	Time Frame	Status
	a. Provide a searchable online database of LTER subject matter experts	LNO CIO	LNO	High	1/2011-12/2012	Needs planning
	b. Partner with scientific societies or others to develop "ecology rapid response teams"	Chair CC	LNO and sites	Medium	1/2012-12/2013	Needs planning
1D. Expand opportunities for scientists to highlight LTER results to decision makers and other constituents	Develop or expand programs to reach DC-based decision makers					
	a. Expand mini-symposium and develop a strategy and annual schedule for decision maker briefings	Chair of EB, ad hoc committee for symposium, NSF Public Affairs	LNO and NSF	High	9/2010-12/2011	Needs planning
	b. Coordinate with scientific societies to host information sessions with decision makers	Coordinated by LNO PIO	LNO and sites	Low	1/2012-12/2013	Needs planning
	c. Consider program to host decision makers for immersions in field science at LTER sites	LNO ED and Chair CC.	LNO and sites	Low	1/2012-12/2013	Needs planning
	Select 4-6 sites each year to organize and host site visits by elected officials (local, state, and federal)	EB	sites	Medium	1/2011-12/2012	Needs planning
2A. Expand capacity to build relationships with decision makers and to share relevant scientific findings	Equip LTER supported cross-site synthesis efforts with full-scale communication and outreach	CC and PIs	sites	High	1/2011-12/2012	Needs planning
	Create new publication forms to distill and disseminate LTER contributions and relevant research	LNO coordinate as partnership or contract	LNO		1/2011-12/2012	Needs planning

Objective	Actions	By Whom	Location	Priority Level	Time Frame	Status
	a. Publish and distribute annual LTER Contributions document	LNO ED, EB, and SC	LNO	High	9/2010 and each Sept thereafter	Underway
	a. Develop a new LTER publication series focused on distilling and translating results perhaps with ESA "Issues in Ecology"	PIs, EB, Pubs Com	sites	High	1/2011-12/2012	Needs planning
	b. Explore online publications and "knowledge exchange" with science publishers	CC and Pubs Com	LNO and sites	Medium	1/2011-12/2012	Needs planning
	D. Create an outreach toolkit for sites with materials and best practices, and host peer-to-peer outreach seminars	CC	LNO and sites	Medium	1/2011-12/2012	Needs planning
3A. Improve internal communication and information sharing	Develop orientation process to support new scientists, staff, and students	CC	LNO	Medium	1/2011-12/2012	Needs planning
	E. Distribute coordinated monthly online-newsletters to consolidate and streamline communication	LNO, PIO	LNO	High	9/2010-12/2012	Underway
	F. Review and address needs for ease, accessibility and frequency of conferencing	LNO CIO	LNO	High	9/2010-12/2012	Needs planning
3B. Increase regular interactions across sites	Organize and host more "some collaborators" and "among site" meetings and workshops	EB and SC	sites	High	1/2011-12/2012	Needs planning
	G. Sponsor exchange program for staff or scientists from one site to visit annual meetings of other sites	LNO coordinate, CC	sites	Low	1/2012-12/2013	Needs planning