

Annual Report of the LTER Network Office

January 1, 2009-December 31, 2009

The LTER Executive Board is responsible for an annual evaluation of the LTER Network Office (LNO). In 2009, the Executive Board established milestones and performance criteria to provide clear expectations of the LNO and to facilitate the annual review. The following report details how the LNO met milestones under five goals and provides evidence of conformity with the performance criteria. Additional material documenting LNO accomplishments is contained in appendices and electronic documents linked in the text.

Goal 1 – Increase the pace and scope of scientific synthesis in the LTER Network

Milestone 1 – By the end of the 3rd quarter, prepare for and carry out the LTER All Scientists Meeting, including at least 50 working groups. **Criteria for evaluation:** scores on a post-meeting survey evaluating logistical issues.

At the conclusion of the All Scientists Meeting (ASM), participants were offered the opportunity to participate in an exit survey (see Appendix I for results). Approximately 30% of the ASM attendees completed the survey (211 respondents). Overall, respondents rated the ASM as Excellent to Very Good (84%) with only 3% dissatisfied in some way with the LNO facilitation regarding ease of on-line registration, ease of travel or YMCA accommodations.

Respondents were satisfied or neutral regarding meeting components of workshop effectiveness (95%), timing (92%) and space (89%) and they agreed that the printed ASM schedule was useful and should be provided again in the future (80%). No respondents indicated they were dissatisfied with LNO responses to requests.

Networking opportunities are a critical portion to the success of the ASM. To that end, respondents were asked to evaluate various activities designed to enhance the networking experience. They were satisfied with the opening mixer (84%), poster session space (88%), local attractions (84%), and poster session length (84%), while slightly less satisfied with the main plenary speakers (70%) and the mixer entertainment (52%).

Information on the various ways respondents learned about ASM was also collected. Such information can guide meeting organizers toward effective methods to disseminate information regarding upcoming meetings. Most respondents learned about the ASM through colleagues (58%), followed by previous meetings (32%), email (26%), the LTER website (13%), and through a friend (5%). Slightly more than one third of the respondents learned about ASM through email and the LTER website combined, which suggests an increased importance of internet connections and website marketing in soliciting participation in the 2012 meeting.

Regardless of how respondents learned about ASM, the following factors were rated in importance with respect to the decision to attend. Workshop content (51%), networking opportunities (82%), availability of LNO support to attend ASM (42%), and meeting with peers of similar expertise (75%) were rated extremely important factors in the decision to attend, while the poster sessions (58%), social activities (52%), and ASM location (53%) rated important. Not important in the decision to attend the ASM were the local attractions (48%). Finally, most respondents would like to have the ASM 2012 return to the YMCA of the Rockies (51%) and would like to have the meeting in September (60%).

Research scientists (39%) and graduate students (38%) comprised the majority of respondents, followed by educational representatives (11%), information managers (10%), and international scientists (2%). Gender was equally represented in respondents while the 25-34 years old age group (38%) and Caucasian (85%) comprised most respondents' age and race.

In addition to specific responses with respect to meeting logistics, respondents were given the opportunity to answer open-ended questions designed to elicit broad-based responses in terms of what they liked or disliked about the meeting. For respondents that chose to comment on what they liked about the meeting, comments fell into four general categories: working groups (n = 22), networking (n = 34), topical discussion (n = 17), and posters (n = 13). Respondents generally did not like: food (n = 50), working groups (n = 30), plenary sessions (n = 22), agenda (n = 19) and location (n = 19). Respondents that did like the working groups commented they liked interacting and collaborating with other participants, while those respondents that did not like the working groups felt that the groups were disorganized, cliquish, needed better stated goals and unfocused, and needed more of a graduate student presence.

Respondents that liked networking opportunities liked the opportunity to engage in cross-site synthesis, future research possibilities and the opportunity to meet with other LTER scientists. Topical discussion respondents were interested in future research possibilities, different types of research, and cross-site synthesis.

Although respondents (n = 50) did not care for the YMCA food, most of the comments associated with this negative response were geared toward considering more vegetarian items in the cafeteria. Those that did not like the plenary sessions noted that some keynote addresses went over time, were boring, too formal, or were preaching to the choir. Those that did not like the agenda felt the need for more downtime, that the schedule was overcrowded, or there was too much overlap in workshops to participate in groups of interest. Finally, those that did not care for the location felt they were stuck at Estes Park and wanted to experience downtown restaurants and bar scenes other than the YMCA. They also felt travel time from Denver to Estes Park was cumbersome, and two mentioned altitude problems such as headache.

Milestone 2 – By the end of the 2nd quarter, prepare and carry out the Science Council meeting in San Diego. **Criteria:** comments of participants and EB.

In 2009, The LNO organized and coordinated the LTER SC meeting from May 13 to May 14 in San Diego, CA hosted by the Scripps Institute of Technology-based California Current Ecosystem LTER site. A concurrent meeting of the LTER National Advisory Board was also included within the agenda. Over eighty LTER staff and scientists as well as NSF representatives attended the meeting. Feedback about the meeting from the LTER EB and participants was very positive.

A web page within the LNO website (<http://lno.lternet.edu/>) was developed for the meeting and used during coordination of the meeting as well as follow-on efforts. A primary result of the meeting was the formation of five research initiatives which were later combined into four LTER Network Synthesis Prospectuses that now provide a focus for follow-on activities related to Decadal Plan research. The focus areas include research related to coastal zone climate change, the disappearing cryosphere, future ecological scenarios and inland climate change. Two page descriptions of each prospectus are available in the LTER document archive and linked to LTER Decadal plan efforts at:

<http://www.lternet.edu/decadalplan/>. Many of the collaborative research activities discussed in the meeting later appeared as topics of working groups at the 2009 LTER ASM.

Milestone 3 – By the end of the calendar year, solicit proposals for synthesis projects from the LTER community as directed by the EB. **Criteria:** completed or not.

More than 75 research working groups were held as part of the 2009 LTER All Scientists meeting. Following a call by the LTER EB for follow-on proposals, 29 requests for funding were received, most of which were associated with ISSE research. John Vande Castle created a website to provide access to the proposals for review. Twelve proposals were selected for funding by the EB and will be supported by the LNO in 2010. The successful proposals have been entered into a new section of the revised LTER intranet web page dedicated to working groups (http://intranet2.lternet.edu/working_groups) and can be accessed directly at: <http://intranet2.lternet.edu/category/working-group-type/2009-post-asm>.

Logistic coordination and support information has been transmitted to all successful principal investigators, and help and support for the working groups will be provided as needed by the LNO.

Milestone 4 – By the end of the calendar year, develop and populate a database with information on working groups funded by the LNO, including final reports, lists of participants and their site affiliations, and products. **Criteria:** database is online, contains the information described, and is accessible.

The database is online at: http://intranet2.lternet.edu/working_groups/. The database is populated with a list of working groups from the 2003-2009 competitions. The web interface allows for query and sort functions as well as a web based management functionality. During the first quarter of 2010, missing information on final reports, lists of participants, and products as well as keywords will be added to the database.

Milestone 5 – By the end of the calendar year, complete a draft operational plan to update LTER Network spatial data holdings in conjunction with the LTER Spatial Data and Analysis Committee. **Criteria:** plan completed or not.

The Director for Synthesis Support coordinated activities for the development of an operational plan related to LTER Network spatial data holdings. This included support for meetings of an ad-hoc “LTER Spatial Data and Analysis Committee” to review LTER Network activities and data holding. Three teleconference meetings of the committee were held in addition to email correspondence, and a first draft plan related to LTER Network spatial data holdings was written. Within the recommendations of the committee was a plan to include input from more LTER scientists related to their interests and needs and to plan a working group as part of the 2009 ASM. A proposal from this working group was written and approved, and the meeting was held at the ASM (<http://asm.lternet.edu/2009/workgroups/lter-remote-sensing-data-information-and-coordination>). Over 20 people attended the meeting and a final report included recommendations for data initial data acquisition to support ISSE research. Specific acquisitions recommended by this group include a number of areas for focus:

1. The LNO should work with the Information Management GIS working group to document GIS and remote sensing data held at LTER sites and include access to these data within the LTER NIS.
2. In a similar manner, LiDAR data acquired by LTER sites particularly through the NSF funded NCALM LiDAR center should be made available for cross-site research through the NIS. LNO should work to establish links with the NCALM Center for future data acquisition at LTER sites. A

similar effort should be made to work with the Alaska SAR facility for access to radar data acquired at LTER sites.

3. High spatial resolution data available for LTER sites should be documented. This would include links to centers such as the UC Santa Barbara Map and Imagery Laboratory (MIL).
4. Documentation of LTER and NASA collaborations including an updated and more user friendly web page within the LTER GIS information page (<http://www.lternet.edu/technology/nasa/>).
5. Acquisition of cloud-free Landsat data for all LTER sites would provide a standardized dataset for ISSE research and should be considered after further input from LTER remote sensing scientists.

The final recommendation of the ASM Working group was that a formal LTER spatial data and analysis committee be formed to further pursue the recommendations of the first ad-hoc committee and a report was written to document recommendations resulting from the meeting:

<http://asm.lternet.edu/2009/workgroups/lter-remote-sensing-data-information-and-coordination>.

Eight people agreed to initially serve on this committee. The participants decided it would be important to hold at least one initial face-to-face meeting and a follow-on ASM meeting proposal will be written to request funds to hold this meeting early in 2009. Follow-on meetings were planned for VTC and teleconference once initial recommendations are finalized. A proposal was submitted to the EB for follow-in ASM funding to form this new committee. The EB at this point declined funding until a specific charge for the LTER spatial data effort can be defined by the full EB.

Milestone 6 - By the end of the 3rd quarter, execute a sub-contract for continued activities of EcoTrends as determined by the Executive Board and NSF.

The scope of work and budget for modifications to the EcoTrends web site were finalized on January 13, 2010. While the EB directed the subcontract be finalized by the end of the 4th quarter, the technical aspects of the project were not determined until the beginning of 2010. Since the budget for proposed tasks was less than \$10,000, a simple purchase order was established with New Mexico State University for the approved scope of work (Appendix II).

Goal 2 – Support Decadal Plan cyberinfrastructure goals

Milestone 1 – By the end of the calendar year, release a revised LTER intranet page that provides direct control of content to LTER scientists and students. **Criteria:** new page is released, has a standardized format and functions as described.

The New Intranet page is available online at the following URL: <http://intranet2.lternet.edu>. The website has a standardized format and look and feel and is integrated with the LTER Personnel Database and LTER LDAP Server. The website provides the same functionality as the previous version as well as updated capabilities for web based content management by multiple users and communities with the Long Term Ecological Research Network. The main features include group capabilities, event management, working group tracking, and LTER Committee management. The website uses the Drupal content management system (CMS), which is an open source, PHP-based CMS. The website is highly modular and has been tested during the LTER Graduate Student election in the fall of 2009. The Website is ready for release into full production.

Milestone 2 – By the end of the calendar year, make a go/no go decision on integrating ClimDB and HydroDB databases from Andrews to the LNO. **Criteria:** decision made or not.

Bob Waide and James Brunt met with Andrews LTER PIs Barbara Bond and Sherri Johnson and IMs Don Henshaw and Suzanne Remillard at the 2009 All Scientists Meeting to determine the next steps in the migration of the ClimDB/HydroDB databases to the Network Office for maintenance and curation. It was determined that the complete migration should take place by the end of the year and a list of tasks to be completed and a timeline were developed. In addition, potential future modifications were discussed and included: use tracking, the addition of flagging for aggregate data sets, administrative interface improvements, and ultimate migration to the PASTA architecture.

In December of 2009, Suzanne Remillard and Barbara Bond communicated with James Brunt that they felt the migration schedule should be allowed to slip to accommodate the hiring of the new LNO information manager. LNO has made the necessary database and network permission changes to allow for access to the mirror site at climhy.lternet.edu to all sites and to allow complete access to the sql database for Suzanne Remillard. In addition, an offer has been made to fill the position of information manager by February of 2010.

The following operational steps will take place in 2010:

1. Suzanne Remillard will provide assistance in getting the remaining 13 LTER sites harvesting to the network mirror along with the USDA Forest Service sites and transfer the complete database from the Andrews FSL when this done. Informative emails will be sent out to all participants and to broader mailing lists informing them of the change in URL. Once this is done the URLs at fsl.orst.edu will be redirected to climhy.lternet.edu.
2. Suzanne Remillard will provide an orientation to the LTER network IM on the management and curation of the database.
3. The database will be co-managed by Suzanne and the LTER network IM. At the end of 2010 LNO will take full responsibility for management and curation. AND IMs Suzanne Remillard and Don Henshaw will provide consultation on an ad-hoc basis for any unforeseen difficulties or modifications that might be needed.

Milestone 3 – By the end of the calendar year, conduct and evaluate a single trial web-based informational activity designed to provide information on LNO CI services and activities to broad LTER audience. **Criteria:** done or not, report of evaluation to EB.

The process of developing this informational activity has begun but is not fully instantiated. Effort devoted to development of the LNO operational plan detracted from reaching this milestone. It will continue into the calendar year 2010. NISAC has suggested that this activity be informed by the development of the strategic communication plan.

Milestone 4 – By the end of the calendar year, complete a schedule for biannual web-based seminars to provide information on cyber security to sites. **Criteria:** schedule completed or not.

A preliminary schedule for cyber security briefings has been completed. There will be a least four briefings annually. These briefings will take the form of a short web-based video presentation and an accompanying grab-sheet on each topic. The schedule is preliminary and is based on a survey of participants in the 2008 XML training and ideas that have been raised in other discussions. It is subject to modification as needs and priorities change. We have encouraged comments by posting the schedule

on the intranet (<http://intranet2.lternet.edu/node/743>) and soliciting input via select mail lists. We will take those comments into consideration in producing and scheduling the cyber security briefings.

Milestone 5 – By the end of the calendar year, acquire hardware necessary to capture and webcast LTER presentations. **Criteria:** hardware acquired.

Two mobile rich-media recorders and one rack-mounted rich media recorder have been purchased from Sonic Foundry via Albuquerque Presentation Systems for the capture and streaming of LTER Network video and presentation content. These units simultaneously capture video input and synchronize it with slide or live-demo presentations. An additional rack-mounted unit has been purchased and placed on permanent loan with UNM Media Technology Services in exchange for using their mediasite server. In addition, air cargo rated pelican cases were purchased to facilitate the transport of the mobile units.

Milestone 6 – By the end of the calendar year, meet all sub-milestones for the development of the NIS. **Criteria:** feedback from NISAC on sub-milestone progress.

Sub-milestone A: By the end of the calendar year, complete a draft operational plan for the continued development of the Network Information System and submit that plan to NISAC. **Criteria:** done or not done; evaluation by NISAC to recommend steps to accelerate pace and, if needed, reallocate resources.

The LNO/LTER CIO (James Brunt) and NIS Developer (Mark Servilla) have completed a draft operational plan for the design, development, and implementation of the LTER Network Information System in collaboration with NISAC, IMC, and strategic community partners. This draft operational plan covers a performance period from September 2009 to August 2014 and was developed in coordination with planning for the 5/6 year funding cycle of the LNO as requested by the NSF. It is now in review by the NISAC and IMC (and more broadly by all site Information Managers), and will be reviewed by an external advisory committee for completeness, efficacy, and achievability in January 2010. The final plan will be revised based on feedback from the EB, NISAC, IMC, and the external advisory committee and submitted to the NSF on 1 March 2010.

Sub-milestone B: By the end of the calendar year, test and evaluate functional prototypes of three major components of the PASTA framework: 1) data identification, 2) parsing and loading, and 3) data caching. **Criteria:** done or not done; evaluation by NISAC.

The Data Manager Library component of the Ecological Metadata Language (EML) source code distribution has been reviewed and tested in a prototype environment for addressing 1) data identification, 2) parsing and loading, and 3) data caching in support of the up-and-coming PASTA framework, which will provide core services of the LTER Network Information System. The current prototype implementation utilizes the data definition described by an EML document to identify a data table located at a remote site, generate a relational database table on a local server that conforms to the data definition, and then loads the remote data into the local table. Inconsistencies between the data definition and the actual table structure are flagged as an exception. This prototype implementation will be extended to provide better reporting and fault tolerance in the case of structural and typing errors between the metadata data definition and the physical data set. Future work will expand the Data Manager Library capability to include data types beyond that of simple tabular structures.

Sub-milestone C: By the end of the 2nd quarter, provide operational redundancy for EcoTrends and LTER Data Catalog applications by completing deployment of backup/fail-over servers and services for both the EcoTrends web portal and the LTER Data Catalog. **Criteria:** done or not done; evaluation by NISAC.

Operational redundancy for both the EcoTrends (www.ecotrends.info) and LTER Data Catalog (metacat.lternet.edu) web applications is now in effect. Redundancy of both systems is accomplished through hourly synchronization of database and programmatic source code from each primary production server to a "warm standby" server located on site. Latency between servers is no more than one hour, with a fail-over start up time of approximately 15 minutes. Fail-over drills for both EcoTrends and the LTER Data Catalog have demonstrated full recovery of production-based applications.

Sub-milestone D: By the end of the calendar year, improve the LTER community repository for NIS software projects by completing migration of the Subversion version control system from a standalone implementation to an integrated web-based implementation. **Criteria:** done or not done; evaluation by NISAC.

The LTER community repository for NIS projects has been improved by migrating from the Concurrent Versions System (CVS) source code version control system to the Subversion (SVN) source code version control system. The SVN repository provides a more modern and improved protocol for source code version control over that of CVS and is the standard repository used within the ecoinformatics community. In addition to the standard SVN network protocol for accessing the repository, SVN is now accessible through the encrypted HTTPS protocol that is used for secure web-based communications. The SVN repository is available for public viewing at <https://svn.lternet.edu> through most web browsers.

Sub-milestone E: By the end of the calendar year, complete decoupling of the LTER Data Catalog web application user interface from the current Metacat "skins" model, making it easier for sites to deploy local views of the LTER Data Catalog. **Criteria:** done or not done; evaluation by NISAC.

Decoupling of the LTER Data Catalog web interface has been successfully implemented and tested in a prototype deployment. The new "LTER Data Portal" runs in a web application context fully independent of the Metacat web application and Metacat's underlying skin architecture. All LTER Data Portal web presence is managed within its own application context and using its own business logic. Metacat is solely used for metadata cataloging and for serving either raw XML or HTML of individual metadata documents. This new approach to interacting with Metacat simplifies the support necessary for developing LTER site-specific "skins". In this case, site-specific skins will build upon and reuse the LTER Data Portal business logic, but be presented through the web using the site's "look and feel" - previously, each new release of Metacat would require re-implementation of the site skin since it was never an integral part of the Metacat distribution. Now, the site skin will remain a separate and intact application regardless of the Metacat version in use. Site skins that use the LTER Data Portal business logic will seamlessly be updated when any changes/modifications occur to the lower-level software. Production deployment of the new LTER Data Portal will occur once all site dependencies to the former LTER Data Catalog structure are removed.

Sub-milestone F: By the end of the calendar year, assist the IMC controlled vocabulary working group (CVG) to (1) develop an optimal "data structure" and (2) modularize the current "auto-

completion" feature such that it can be deployed on site web-pages. **Criteria:** Description of requests and responses by LNO and review by NISAC.

The LNO received formal requests by the IMC Controlled Vocabulary Working Group chair (John Porter, VCR LTER) to 1) develop an optimal "data structure" to store a vocabulary specific to the LTER science in a hierarchical fashion that allows linking to "like", "superordinate", and "subordinate" terms and 2) to modularize and make available as a software package the current "auto-completer" AJAX functionality of the search-term form-field located on the LTER Data Catalog web application.

In response, the NIS developers have reviewed documentation (ISO Z39-19-2005) with John Porter and have agreed to use this document as a guideline for developing a vocabulary term "data structure". Planning for this request is now in progress, along with the integration point for the broader Network Information System operation/implementation plan. The second request was considered a "no-risk" development task and therefore, was completed for demonstration purposes in both Java Servlet/JSP and PHP framework packages. Both packages are now available through the LTER community repository for NIS projects.

Sub-milestone G: By the end of the calendar year, conduct searches for four new technical staff positions to contribute to the development of the NIS. **Criteria:** how many searches conducted.

The positions being filled are an Analyst/Programmer II, a Programmer intern, an Information Manager, and a Web Designer intern. As of December 31, all four positions have been posted. Candidates have been identified and interviewed for the Analyst/Programmer II and the Information Manager. A formal offer has been made and accepted for the Analyst/Programmer II and a tentative offer has been made for the Information Manager position pending document approval. The two intern positions are currently accepting applications. Review of these applications and selecting individuals for interview will take place in January 2010.

Milestone 7 – By the end of the calendar year, complete an assessment of current LTER Cyberinfrastructure and future CI needs to support ISSE research through a survey of all LTER sites. **Criteria:** survey completed and assessment presented to EB.

During the fourth quarter of 2009, NISAC recommended modifications to the scope of this survey to conform to the LTER CI Strategic Plan. In addition, the spatial data working group at the ASM recommended an inventory of LTER spatial data holdings and a needs assessment. A new LTER "CI assessment and needs document" is in revision to include both spatial data holdings and Network-level CI needs. However, integration of spatial data needs into the survey depends on action pending by the EB regarding the ad hoc spatial data committee. With a delay in the decision and direction for LTER spatial data holding by the EB, a final version of the survey is waiting for a resolution to that effort. Once details of spatial data holdings are decided, a final draft of the CI assessment and needs survey will be submitted to the LTER Network Information System Advisory Board for review.

Goal 3 – Support Network governance and operations

Milestone 1 – By the end of the calendar year, organize cost-effective meetings of LTER committees: Science Council (1), Executive Board (3), LTER Mini-symposium (1), National Advisory Board (1), Network Information System Advisory Committee (2), Information Managers annual meeting (1), and IM

Executive Committee (1). **Criteria:** meetings successfully held, survey responses every 2 y, EB collective assessment.

During the 2009 calendar year, the following meetings were held:

- 1 Information Managers Executive Committee meeting in Albuquerque, NM
- 3 Executive Board meetings: Arlington, San Diego, Estes Park
- 1 LTER Mini symposium: National Science Foundation, Arlington, VA
- 1 NISAC meeting in Albuquerque, NM
- 1 Science Council meeting in San Diego, CA,
- 1 National Advisory Board meeting in San Diego, CA
- 1 Tri-annual All Scientists Meeting in Estes Park, CO
- 1 Information Managers meeting in Estes Park, CO

Name of meeting	Date	Location	Attendees	Cost
IM Exec	Jan 26-27, 2009	Albuquerque	8	\$4,558
Executive Board	February 25, 2009	NSF	11	\$12,154
LTER Mini symposium	February 26, 2009	NSF	7	\$4,270
NISAC	March 3-5, 2009	Albuquerque	17	\$4,970
Science Council	May 12-14, 2009	San Diego	51	\$99, 952
Executive Board	May 12, 2009	San Diego	11	Part of SC Costs
NAB	May 14, 2009	San Diego	7	Part of SC costs
All Scientists Meeting	September 13-16, 2009	Estes Park	748 (309 with LNO support)	\$407,000
Executive Board	September 14-16, 2009	Estes Park	12	Part of ASM costs
IM	September 13, 2009	Estes Park	26	Part of ASM costs

Milestone 2 - By the end of the calendar year (or earlier if required by NSF), provide requested materials in support of the 30-year review of the LTER Network. **Criteria:** done or not.

Principal activities for the 30-year review of the LTER Network are now scheduled for 2010. To date, requests for information have been limited and restricted to the co-chairs, Alison Power (Cornell University) and Tony Michaels (University of Southern California). On the instructions of LTER Chair Phil Robertson, LNO staff prepared two packets of material for Drs. Power and Robertson that included: 1) the LTER Decadal Plan, 2) Network synthesis prospectuses (four 2-page descriptions of current network research initiatives), 3) 2003 BioScience issue of LTER articles (6 articles), and 4) NSF's Tipping Points and Transitions report. One packet was sent to Dr. Power in November 2009, and the other packet is being held until requested by Dr. Michaels. Fifteen copies of the other materials have been acquired for distribution to the 30-Year Review Panel when members are identified.

Milestone 3 – By the end of the 2nd quarter, complete negotiations for the renewal of the LNO Cooperative Agreement. **Criteria:** completed or not.

The LNO completed negotiations for the Cooperative Agreement covering core operations on schedule. The University of New Mexico provided final approval of the terms to the National Science Foundation on May 7, 2009, and the primary and cost-share accounts were established shortly thereafter. Official start date of the Cooperative Agreement was May 1, 2009.

Milestone 4 – By the end of the 3rd quarter, complete negotiations for the Cooperative Agreement for support for the LTER Decadal Plan. **Criteria:** done or not.

The LNO completed negotiations for the Cooperative Agreement covering Decadal Plan activities on schedule. The University of New Mexico provided final approval of the terms to the National Science Foundation on July 30, 2009, and the primary account was established by the start date of the Cooperative Agreement, which was September 1, 2009.

Milestone 5 - By the end of the calendar year, submit a detailed annual report to the LTER Executive Board. This report will contain evidence of completion of the milestones contained herein and proposed milestones for the year to come. **Criteria:** done or not.

This document constitutes the annual report to the LTER Executive Board, submitted on January 19, 2010. Evidence of the completion of milestones is contained herein, and proposed milestones for 2010 are included as Appendix III.

Milestone 6 – By the end of the 3rd quarter, submit a supplement proposal to NSF to provide funding for travel of the U.S. International Committee. **Criteria:** done or not.

On July 2, 2009, proposal number 0948486 was submitted to the National Science Foundation for \$100,000 to address the collaboration between US LTER and ILTER Networks for the next five years. Support was requested for US international representatives to attend ILTER meetings to strengthen interactions at all levels of research cooperation. Over the next five years, selected participants shall work to ensure that collaborative ideas from ILTER activities are made accessible to the LTER community, shall identify key variables needed for success in start-up of collaborative research, and identify ILTER and LTER trends for future decision making.

On August 4, 2009, NSF awarded the supplement to the main cooperative agreement DEB-0832652. By August 7, 2009, the award was implemented into the University of New Mexico post-award system.

Milestone 7 – By the end of each quarter, obtain updates of information on committee web pages from committee chairs. **Criteria:** Description of requests by LNO and responses by sites.

This task depended on revisions to the LTER Intranet page (see Goal 2, Milestone 1), which were only completed at the end of the last quarter of 2009. Therefore, we have not yet requested updates to committee web pages. The first request for information will be circulated in the first quarter of 2010. The LNO will update committee web pages upon receipt of information. Also during that quarter, we will prepare explanatory information for committee chairs that will allow them to make future changes to committee web pages directly. If necessary, we will also conduct an internet training for committee chairs or their designates.

Milestone 8 - By the end of the calendar year, prepare a draft of a detailed operational plan for the expenditure of ARRA funds for review by the Executive Board. The contents of this operational plan will

be determined by the requirements in the General Programmatic Terms and Conditions that govern the pertinent Cooperative Agreement. **Criteria:** done or not.

The first draft of the LNO operational plan was distributed to the LTER Executive Board, the Information Management Committee, and the Network Information System Advisory Committee on December 1, 2009. The plan was prepared to address the requirements in the General Programmatic Terms and Conditions that govern the Decadal Plan Cooperative Agreement. The LTER Executive Board provided advice and guidance on the scope and structure of the operational plan. Specifically, the Executive Board requested that the operational plan cover all 17 activities proposed in both LNO Cooperative Agreements, rather than just the 10 activities in the Decadal Plan Cooperative Agreement, as requested by NSF. Comments on the initial draft were incorporated in a second draft that was sent to the Executive Board, Information Management Committee, and the Network Information System Advisory Committee for additional review. In addition, the second draft will be reviewed by a panel of external reviewers, who will meet with the Executive Board in January, 2010. A final draft will be prepared from this meeting for submission to the Executive Board. LNO staff will then prepare a revised version of the operational plan, covering only the 10 Decadal Plan activities, for submission to NSF by February 28, 2010.

Goal 4 – Improve information flow within LTER and between LTER and others.

Milestone 1 - By the end of the calendar year, complete a schedule for meetings necessary to draft a Strategic Communication Plan for the LTER Network. **Criteria:** schedule completed or not.

The need for an LTER Strategic Communication Plan was identified during the development of the Decadal Plan, and the LNO was assigned the responsibility for organizing the effort to create this plan. Bill Michener, who was designated the lead on this project, developed a one-page description of the goals and activities needed (Appendix IV). However, responsibilities associated with the recently-funded DataONE proposal will prevent Bill from continuing, and Bob Waide has assumed the lead.

A schedule for meetings needed to develop a Strategic Communication Plan for the LTER Network is attached as Appendix V. This schedule focuses on two products, a strategic plan that will outline the communication goals of the LTER Network and the strategies to achieve them and an implementation plan that will include the specific actions necessary to implement chosen strategies. The strategic plan will be developed by a group of LTER scientists and educators led by a facilitator yet to be identified. Tentative members of this group include Phil Robertson (KBS), David Foster (HFR), Jonathan Walsh (BES), Marcia Nation (CAP), Bob Waide (LNO), and McOWiti Thomas (LNO).

The following potential constituencies were identified by the Executive Board:

- 1) LTER scientists, educators, and students
- 2) K-12 students
- 3) K-12 teachers
- 4) Undergraduate students
- 5) College and university faculty
- 6) Community college faculty
- 7) Community college students
- 8) Decision-makers (agencies, politicians/staffers)
- 9) News organizations (newspapers, film media, news casts, radio)
- 10) Public

11) Funders

Milestone 2 – By the August 2009, Ecological Society of America meeting, complete a redesigned LTER display. **Criteria:** completed or not.

The old LTER multimedia traveling exhibit was retired and replaced with a significantly upgraded version. The new exhibit features banner modules that are much more portable and easier to update. The new exhibit was unveiled at the 2009 Ecological Society of America (ESA) annual meeting in Albuquerque, NM (and subsequently at the LTER All Scientists Meeting at Estes Park, CO). The five initial modules featured three network banners (LTER general information, research, and education components), as well as site specific modules for the two New Mexico LTER sites, Sevilleta and Jornada, reflecting the state's hosting of the ESA meeting.

Milestone 3 – Complete an informative and attractive newsletter by the end of the 2nd quarter and another by the end of the 4th quarter. **Criteria:** completed or not.

Two issues of the LTER Network newsletter were completed: *Network News Vol.22 No.1 Fall 2009* and *Network News Vol.22 No.2 Fall 2009* (also see www.lternet.edu/news for the online stories and <http://intranet.lternet.edu/modules.php?name=UpDownload&req=viewsdownload&sid=47> for archived downloadable pdf issues).

Milestone 4 - By the end of the calendar year, facilitate and subsidize reprinting of two site brochures. **Criteria:** completed or not.

Two site brochures were completed: the Florida Coastal Everglades LTER brochure and the Harvard Forest LTER brochure (PDF versions are available for download at <http://intranet.lternet.edu/modules.php?name=UpDownload&req=viewsdownload&sid=39>. In addition, the LNO Public Information Officer worked with two other LTER sites (Kellogg Biological Station and Coweeta) to update their brochures, which will hopefully be ready for printing this year.

Milestone 5 – By the end of the 3rd quarter, complete and administer a web-based survey of LNO performance and analyze results following guidance from EB. **Criteria:** completed or not.

An electronic survey of LNO performance was prepared and administered by Dr. Amelia A. Rouse of the UNM Institute for Public Policy with guidance on content from the LTER Executive Board. An e-mail message regarding the survey was sent to the LTER community on April 22, 2009. By the closing date on May 1, 676 people had responded to the survey. A summary of [results from the survey](#) is posted in the LTER Document Archive.

The results of the survey were presented to the Executive Board in their May, 2009, meeting. The Executive Board asked for an analysis to address four questions, which was completed on June 10 by Dr. Rouse (Appendix VI). To date, the Executive Board not requested any additional analysis of the survey results.

Milestone 6 - By the end of the calendar year, complete a schedule for training activities for LTER scientists and information managers for calendar year 2010. **Criteria:** completed or not.

A preliminary and tentative schedule for LNO hosted training has been established based on some projects in the works and some ideas that have surfaced in various discussions. We have encouraged comments and feedback on this schedule by posting it at <http://intranet2.lternet.edu/node/742> and sending notifications of this posting to select email lists. This schedule will remain tentative and subject to modification as needs and priorities change. In addition we have requested training suggestions in line with the steps outlined in the draft operational plan. These suggestions as well as the preliminary schedule will be brought before the EB for review, approval, and prioritization

Goal 5 – Create productive collaborations that improve interoperability with other networks

Milestone 1 – By the end of the calendar year, identify specific future activities that will mutually benefit the Organization for Biological Field Stations and LTER. **Criteria:** list of activities.

John Vande Castle attended the annual meeting of OBFS, which was held at the La Selva Biological Station in Costa Rica, and made a presentation on the current and future interactions between OBFS and LTER. Discussions between the LNO and OBFS leadership identified five activities that will maintain the close relationship between the two organizations. The LNO will continue to host the OBFS web page and administrative databases. LNO staff will provide expertise and advice on managing ecological data, which will facilitate interoperability between LTER and OBFS sites. The LNO will provide guidance and information to OBFS on the International LTER program that will allow OBFS to link with a broader international community than they do at present. OBFS will be involved in beta testing the eml editor that is being developed as part of the NBII-LTER partnerships. Finally, an LNO representative will continue to attend the annual OBFS meeting and to share information regularly with Brian Kloeppel, who is the designated OBFS liaison with LTER.

Milestone 2 – By the end of the calendar year, review the relationship between the LTER Network and the National Biological Information Infrastructure and set mutually-beneficial goals. **Criteria:** list of goals and recommendations.

Both the NBII and LTER have marked the need of good metadata capture tools as a priority. After a disappointing attempt to address the shortcomings (Aguilar et al., 2009 doi:10.1016/j.ecoinf.2009.08.012), Inigo San Gil and others have identified and developed tools that are already deployed at two LTER sites (LUQ, SEV) and at several cloud based services served from the LNO. Similar metadata capture instances are deployed at the USA-National Phenology Network site as well as the ORNL's Eolic Energy initiative site.

During the annual NBII-LTER cooperative agreement and revision of annual scope of work meeting, Inigo San Gil demonstrated newly-developed metadata capture tools before a group of ORNL developers and managers (Dr. Bob Cook, Dr. Giri Palamisamy and four more). The NBII Metadata program director (Viv Hutchison), NBII Technology Director (Mike Frame), NBII Content management director (Tom Herman) and other content management associate directors (Hugh O'Connor) decided this is an effort worth pursuing and approved addition of this task to San Gil's duties. Many information managers at LTER have been exposed to these tools, and there are ongoing initiatives to support both training and development efforts for them. The ORNL main developer has verbally committed to add some of his resources to these activities, pending approval from Bruce Wilson.

These mutually beneficial activities include the development of the metadata capture tools, the integration of these tools in NBII's remote portlets, the documentation of the tools in many formats,

such as video, peer-reviewed publications and also regular help documents. The *screencast* (or screen captures in video format) productions are also of great interest for both LTER and NBII.

The new Scope of Work for the NBII-LTER cooperative agreement includes significant time to address specific LTER needs in two areas:

- 1) Coordination, training, and help-desk support (base tasks that enable support for reporting and accountability, organization and participation in training activities, and provision of help desk support for the community.
- 2) Support for development of metadata tools and interoperability solutions, as well as information dissemination to the community. Half a year of Inigo's time will be devoted to this second point, which is mutually beneficial for both the NBII and LTER.

Milestone 3 – By the end of the 3rd quarter, organize a workshop as directed by NSF to provide information to planning projects for the Urban Long Term Research Areas (ULTRA) to allow for coordination with LTER scientific and cyberinfrastructure standards. **Criteria:** workshop organized or not, as directed by NSF.

Bob Waide served on the review panel for the joint NSF/USDA-FS ULTRA competition, and thus has an insider's perspective on the development of a future ULTRA network. The initial competition focused on identifying interdisciplinary research groups conducting short-term investigations in urban environments. The actual development of an ULTRA network is still being discussed by the principals, and thus solicitations for planning projects have yet to occur. Hence, it is premature to conduct workshops on possible joint standards. After discussions with NSF program officers associated with the ULTRA competition, the LNO issued an invitation to the 2009 ASM to the lead investigators of successful ULTRA proposals. In addition, Bob Waide organized a working group on "Integration at the network level" that focused on comparing approaches to developing and maintaining research networks. At least one PI from an ULTRA project attended this workshop.

Milestone 4. Maintain contact with cyberinfrastructure developers and information managers at NEON and develop a plan to formalize the relationship. **Criteria:** List of accomplishments.

Dave Schimel and Michael Keller met with the LTER Executive Board on June 17, 2009, via videoteleconference. During this discussion, the NEON representatives indicated that they expected LTER scientists to be early adopters of NEON resources including data products. NEON would welcome the opportunity to designate liaisons from LTER for likely early points of intersection including the airborne platform, information management, and education. They also commented that interoperability with LTER data is a design objective of NEON's IM strategy. However, formal NEON activities will not begin until the operations review is completed in mid-2010, and thus there is little opportunity for joint activities at present. In the interim, James Brunt, LNO Chief Information Officer, will maintain contact with his NEON counterpart to promote communication. James served as a member of the Final Design Review Team for NEON and is a member of the Consortium of Environmental Observing Networks (CEON), and thus he is familiar with potential areas of interaction with NEON and other observatories.

Milestone 5. Advise EB of promising opportunities with other networks through annual updates as part of LNO annual report. **Criteria:** Completed or not.

DataONE - The LTER Network will derive benefit from being a DataONE Member Node by serving data into a broad and diverse repository that will expose LTER Network data at national and global scales for subsequent analysis and synthesis. Equally important, LTER Network data that reside in the DataONE network will be preserved indefinitely through the DataONE commitment for distributed replication and storage of data contributions, including technological provisions for discovering, accessing, and integration of DataONE hosted data packages.

Earth and Sky - The LNO Executive Director was contacted by the Earth and Sky radio network to partner in a proposal to NSF to obtain funds to use Earth and Sky outlets to increase public awareness of the LTER Network and its achievements. We are awaiting further information, with a proposal expected by spring 2010.

National Phenology Network - The memorandum of understanding between the National Phenological Network (NPN) and LTER provides an opportunity to link with a growing new network, another Federal agency, and a dynamic new citizen science team. To date, this relationship has not been exploited fully. LTER leadership should consider whether a concentrated effort to exploit this partnership is a priority at this time. Inigo San Gil is providing the NPN with some guidance and assistance in deploying metadata registry tools, under the guidance of the LTER-NBII cooperative agreement. Inigo was recently appointed to a two year term on the board of NPN.

Genomics Standards Consortium. Two years ago, Inigo San Gil represented the LTER Information Managers at a special meeting for the advancement of the Genomics Standards Consortium goals. Inigo showed the group the synergies between the LTER metadata standard, the EML and the GSC standard, the Genomic Contextual Data Metadata Language (GCDML). This year, the LTER Network Office is a core member in a NSF Research Coordination Network grant championed by John Wooley at UCSD. As a result, an RCN meeting will be hosted at an LTER location, possibly in Albuquerque.

Synthesis Center - The new competition for a national synthesis center provides an opportunity for LTER to consider whether its interests would be served by a partnership with one or more of the competing proposals. A discussion of such an approach would have to occur soon.

Appendix I. ASM Exit Survey Results

Below are the respondents' detailed responses and percent rankings to the individual questions:

- Overall rating of the All Scientists Meeting
 - Excellent (31.8%)
 - **Very Good (52.1%)**
 - Good (14.6%)
 - Average (1.6%)
 - Poor (0.0%)
- LNO facilitation of travel and logistics:
 - *Ease of on-line registration*
 - **Very satisfied (45.3%)**
 - Satisfied (38.5%)
 - Neutral (13.0%)
 - Dissatisfied (2.6%)
 - Very dissatisfied (0.5%)
 - *Ease of travel to ASM*
 - Very satisfied (39.9%)
 - **Satisfied (43.5%)**
 - Neutral (11.4%)
 - Dissatisfied (3.6%)
 - Very dissatisfied (1.6%)
 - *YMCA accommodations*
 - **Very satisfied (39.4%)**
 - **Satisfied (39.4%)**
 - Neutral (15.0%)
 - Dissatisfied (5.2%)
 - Very dissatisfied (1.0%)
- Meeting Components
 - *Workshops effective and well organized*
 - Very satisfied (32.7%)
 - **Satisfied (47.7%)**
 - Neutral (14.1%)
 - Dissatisfied (5.5%)
 - Very dissatisfied (0.0%)
 - *Workshop schedules timed effectively*
 - Very satisfied (31.7%)
 - **Satisfied (50.3%)**
 - Neutral (10.1%)
 - Dissatisfied (7.0%)
 - Very dissatisfied (1.0%)
 - *Meeting room space was adequate*
 - Very satisfied (30.2%)
 - **Satisfied (46.7%)**
 - Neutral (11.6%)

- Dissatisfied (11.1%)
 - Very dissatisfied (0.5%)
- Printed ASM schedule was useful and should be provided in the future
 - **Strongly agree (47.7%)**
 - Agree (32.7%)
 - Neutral (9.0%)
 - Disagree (7.5%)
 - Strongly disagree (3.0%)
- Level of satisfaction with LNO responses to requests for information
 - **Very satisfied (41.0%)**
 - Satisfied (38.5%)
 - Neutral (20.5%)
 - Dissatisfied (0.0%)
 - Very dissatisfied (0.0%)
- Networking activity opportunities
 - *Opening mixer*
 - **Very satisfied (51.1%)**
 - Satisfied (32.4%)
 - Neutral (16.0%)
 - Dissatisfied (0.0%)
 - Very dissatisfied (0.5%)
 - *Plenary speakers*
 - Very satisfied (29.9%)
 - **Satisfied (40.1%)**
 - Neutral (21.3%)
 - Dissatisfied (8.1%)
 - Very dissatisfied (0.5%)
 - *Poster sessions lengths*
 - Very satisfied (39.6%)
 - **Satisfied (44.7%)**
 - Neutral (9.1%)
 - Dissatisfied (6.6%)
 - Very dissatisfied (0.0%)
 - *Poster session space*
 - **Very satisfied (47.2%)**
 - Satisfied (41.1%)
 - Neutral (9.1%)
 - Dissatisfied (2.0%)
 - Very dissatisfied (0.5%)
 - *Entertainment: Loretta Thompson*
 - Very satisfied (24.4%)
 - Satisfied (27.4%)
 - **Neutral (44.5%)**
 - Dissatisfied (1.8%)
 - Very dissatisfied (1.8%)
 - *Local Attractions*
 - **Very satisfied (50.8%)**
 - Satisfied (33.5%)

- Neutral (15.1%)
 - Very dissatisfied (0.6%)
 - Dissatisfied (0.0%)
- How did you hear about LTER ASM 2009?
 - **Colleague (58.3%)**
 - Previous meetings (32.3%)
 - Email (26.0%)
 - LTER website (12.5%)
 - Friend (4.7%)
- Factors influencing attendance
 - *Workshop content*
 - **Extremely important (50.8%)**
 - Important (38.9%)
 - Not important (10.4%)
 - *Plenary keynote addresses*
 - Extremely important (11.9%)
 - Important (42.5%)
 - **Not important (45.6%)**
 - *Poster sessions*
 - Extremely Important (27.9%)
 - **Important (57.4%)**
 - Not important (14.7%)
 - *Networking*
 - **Extremely important (81.6%)**
 - Important (16.8%)
 - Not important (1.6%)
 - *Social activities*
 - Extremely important (13.8%)
 - **Important (52.4%)**
 - Not important (33.9%)
 - *Local attractions*
 - Extremely important (11.6%)
 - Important (40.0%)
 - **Not important (48.4%)**
 - *ASM location*
 - Extremely important (20.6%)
 - **Important (53.1%)**
 - Not important (26.3%)
 - *Availability of LNO support to attend ASM*
 - **Extremely important (42.4%)**
 - Important (33.5%)
 - Not important (24.1%)
 - *Meeting with peers of similar expertise*
 - **Extremely important (74.9%)**
 - Important (22.6%)
 - Not important (2.6%)
- Participant type
 - **Research scientist (39.2%)**

- Graduate student (38.1%)
- Educational representative (11.1%)
- Information manager (9.5%)
- International scientist (2.1%)
- Where would you like to have ASM 2012?
 - **YMCA of the Rockies (50.8%)**
 - West coast (24.6%)
 - East coast (14.5%)
 - Central USA (10.1%)
- What month would you like ASM 2012?
 - **September (60.0%)**
 - October (11.1%)
 - August (11.1%)
 - Other months aggregate (17.8%)
- Demographics
 - *Gender*
 - **Female (49.5%)**
 - Male (49.0%)
 - *Age group*
 - 18-24 (8.1%)
 - **25-34 (38.4%)**
 - 35-44 (18.7%)
 - 45-54 (21.7%)
 - 55-64 (10.1%)
 - >64 (2.0%)
 - Prefer not to answer (1.0%)
 - *Race*
 - **White (85.1%)**
 - Asian (7.2%)
 - Prefer not to provide (6.7%)
 - American Indian or Alaskan Native (0.5%)
 - Black or African American (0.5%)
 - *Ethnicity*
 - **Not Hispanic or Latino (86.8%)**
 - Prefer not to provide (8.4%)
 - Hispanic or Latino (4.7%)

Appendix II. Scope of work for EcoTrends web site modifications

SCOPE OF WORK (D.PETERS, NMSU) IMPROVEMENTS TO EXISTING ECOTRENDS WEB SITE

The EcoTrends web site is a first generation web site developed by the LNO at UNM in parallel with the accumulation and standardization of long-term datasets by NMSU. As a result of this parallel development, the web site requires modifications before it can be optimally accessed by scientists. These modifications were detailed in four working group meetings held in April 2009, and discussed by the LTER Network Information System Advisory Committee. This scope of work covers the most urgent of these modifications to be undertaken by NMSU.

Product 1. Instantiate www.ecotrends.info at New Mexico State University

To provide Jornada LTER personnel with complete and local control over all aspects of the www.ecotrends.info web presence, Jornada LTER personnel will instantiate the EcoTrends web application within the Jornada LTER computing environment. LNO personnel have delivered a complete and working version of the EcoTrends web application to Jornada personnel as an Ubuntu Linux virtual machine instance. Under this contract, Jornada and NMSU personnel, will:

- Migrate the EcoTrends web application and all underlying components (Metacat, Postgres, etc.) to the Jornada Microsoft Windows physical and virtual architecture.
- Set up a Jornada subversion server as the source code repository so that source code can be checked out, edited, and committed back to a secure local repository by the NMSU web developer. The LNO can provide guidance for this task.
- Periodically update the LNO subversion server as changes to the website described below are completed to provide an offsite and open repository of the code. The LNO will provide assistance with this task.

Product 2. Modifications to text and functionality of the web site

When Product 1 is complete and stable enough to allow for exploration and modifications, the NMSU programmer will explore the functionality of the website code and the relationships between the various components. The NMSU programmer will begin simple changes to the code, including changes to text throughout the website, and simple functionality. These initial changes to functionality will need little or no change to the existing databases.

Changes to be made include:

- 1) Datasets Matched page:
 - a. Top of search page will say: "Search matched to [x] datasets containing the keywords...." (e.g., Sevilleta and biogeochemistry).
 - b. Add a box and button that will allow users to select how many rows of returned datasets they will see on each page.
 - c. Add a button at the top of the search results page that will allow users to send all of the selected datasets to their data store (instead of having to send each one individually).
 - d. Add mouse-over boxes to explain the functionality of the four buttons to the right of each row in the table.
- 2) About EcoTrends page:
 - a. Add a glossary of terms used throughout the website (e.g., variable names)
 - b. Add general documentation of the project (e.g., how data were derived and organized).
- 3) Mid level metadata page:
 - a. Create mouse-over pop-ups that describe the field headers (terms) in the page.
- 4) Participating Sites page:
 - a. Repair existing page so that it works properly in Internet Explorer 8 (site names are being place in the wrong frame).

- b. Add more information to pop-up box over each point on the map, including the number of datasets available from the site, with the number linked to a query that will return the datasets in the data results page, the site location (State, Country), the full site URL, not "Visit website".
- 5) Administration page:
 - a. Allow administrators to download simple reports on a regular basis that show:
 - i. the number of new users each month
 - ii. the level of activity of users – e.g., total number of 'hits', downloaded datasets, viewed plots

Delivery date: 1 July 2010

Product 3. Modify browsing.

The browsing function in the EcoTrends web site will be modified to be hierarchical using tabs, drop down lists, check boxes or right clicks. Only the themes or variables with datasets for the higher levels in the hierarchy will then show up in the lower levels. The appropriate hierarchical structure will be determined by the subcontract PI with input from relevant stakeholders as she sees fit. Long lists of site names will also be hierarchical, either by state or by network name (LTER, USFS, USDA ARS). Only the variables appropriate for the sites selected will show up in the list. Changes that require modifications to the existing databases in addition to the web code may not be implemented depending on the difficulties in changing the databases.

Delivery date: 1 September 2010

Product 4. Create library of synthesis figures and maps from the book.

An anticipated product from the EcoTrends book is a large number of maps showing continental-scale patterns in mean values and the slope of the regression lines for each site and variable. We will create a library of .jpg or .tiff or similar format containing these maps such that users can easily download the maps without having to access and graph the underlying data.

Delivery date: 31 October 2010

Budget

	salary/hr	no. hours/week	no. weeks	total salary
PERSONNEL				
Undergraduate web programmer				
spring	\$15.00	19.5	11	\$3,217.5
summer	\$15.00	40	11	\$6,600.0
total salary				\$9,817.5
FRINGE BENEFITS				
Student salaries @ 0.5%				\$49.1
				\$82.1
				\$131.2
TOTAL SALARY/FRINGE				\$9,948.7

Appendix III. Milestones and criteria for review of LNO (2010)

DRAFT
Performance Criteria for the LNO
January 1, 2010-December 31, 2010
Revised 1-18-10

Purpose: clear performance criteria will enable the EB to do a better job in its annual review of the LNO.

Goal 1 – Increase the pace and scope of scientific synthesis in the LTER Network

Milestone 1 – By the end of the 3rd quarter, begin initial planning for a 2012 LTER All Scientists Meeting including requesting space at the YMCA of the Rockies in Estes Park. Information on participant preferences and alternate venues will be transmitted to the EB for decision on location and dates.

Milestone 2 – By the end of the 2nd quarter, prepare and carry out the Science Council meeting at the Plum Island Estuary LTER site and follow-on activities. **Criteria:** comments of participants and EB.

Milestone 3 – By the end of the calendar year, document results of working groups and solicit new proposals for synthesis projects from the LTER community as directed by the EB. **Criteria:** completed or not.

Milestone 4 – By the end of the calendar year, update the database with information on working groups funded by the LNO, including final reports, lists of participants and their site affiliations, and products. **Criteria:** database is up to date, contains the information described, and is accessible; EB members evaluate completeness and usability of database.

Goal 2 – Support Decadal Plan cyberinfrastructure goals

Milestone 1 – By the end of the calendar year, conduct and evaluate a single trial web-based informational activity designed to provide information on LNO CI services and activities to broad LTER audience. **Criteria:** done or not, report of evaluation to EB.

Milestone 2 – By the end of the calendar year, meet all sub-milestones for the development of the NIS. **Criteria:** feedback from NISAC on sub-milestone progress.

Milestone 3 – By the second half of the year, revise, administer and evaluate a new LTER Cyberinfrastructure Assessment Survey to include CI needs based on the current LTER CI Plan and spatial data needs of the LTER Network and LTER sites. **Criteria:** survey completed and assessment presented to EB.

Goal 3 – Support Network governance and operations

Milestone 1 – By the end of the calendar year, organize cost-effective meetings of LTER committees: Science Council (1), Executive Board (3), LTER Mini-symposium (1), National Advisory Board (1), Network Information System Advisory Committee (2), Information Managers annual meeting (1), and IM Executive Committee (1). **Criteria:** meetings successfully held, survey responses every 2 y, EB collective assessment.

Milestone 2 – By the end of the calendar year (or earlier if required by NSF), provide requested materials in support of the 30-year review of the LTER Network. **Criteria:** done or not.

Milestone 3 – By the end of each quarter, obtain updates of information on committee web pages from committee chairs. **Criteria:** Description of requests by LNO and responses by sites.

Milestone 4 - By the end of the calendar year, submit a detailed annual report to the LTER Executive Board. This report will contain evidence of completion of the milestones contained herein and proposed milestones for the year to come. **Criteria:** done or not.

Goal 4 – Improve information flow within LTER and between LTER and others.

Milestone 1 - By the end of the calendar year, complete a schedule for implementation of the Strategic Communication Plan for the LTER Network. **Criteria:** schedule completed or not.

Milestone 2 – Complete an informative and attractive newsletter by the end of the 2nd quarter and another by the end of the 4th quarter. **Criteria:** completed or not.

Milestone 3 - By the end of the calendar year, facilitate and subsidize reprinting of two site brochures. **Criteria:** completed or not.

Milestone 4 - By the end of the calendar year, review and revise schedule for training activities for LTER scientists and information managers for calendar year 2011. **Criteria:** completed or not.

Goal 5 – Create productive collaborations that improve interoperability with other networks

Milestone 1 – By the end of the calendar year, review results of the relationship between the LTER Network and the National Biological Information Infrastructure and set new goals. **Criteria:** list of goals and recommendations.

Milestone 2 – Maintain contact with cyberinfrastructure developers and information managers at NEON and develop a plan to formalize the relationship. **Criteria:** List of accomplishments.

Milestone 3 – Advise EB of promising opportunities with other networks through annual updates as part of LNO annual report. **Criteria:** Completed or not.

Appendix IV. Description of goals of the LTER strategic communication plan

LTER Communication Plan

Background Document: LTER Network Embarks on Strategic Communication Plan

William Michener and McOWiti Thomas

The LTER Network represents a vibrant scientific community and a vital national resource. Among other discoveries, LTER scientists have unraveled complex problems associated with emergent diseases, invasive species, climate change, and natural and anthropogenic disturbances. Yet, “LTER” is not yet branded (i.e., a household word) in the mind of the public. Clear opportunities exist for better coordinating public communication and outreach across the Network and for improving the dissemination of information to LTER clients and the public.

To enable more effective communication with the public, the LTER Executive Board has asked the Network Office to develop a Strategic Communication Plan for the LTER Network. The plan will incorporate input from all LTER sites as well as advice from the broader community of communication experts. The end product will be a “living” Strategic Communication Plan for the LTER Network. The plan will address: (1) *who* LTER wishes to communicate with; (2) *why* LTER wants to communicate with them; (3) *what* LTER desires to communicate; (4) *how* the information can be communicated most effectively; and (5) *when and how often* LTER needs to communicate with its stakeholders. The plan will include suggested public communication and outreach tools and products; proposed activities and tasks (e.g., development of an LTER media kit); and timelines, metrics and milestones.

It is envisioned that the strategic plan will achieve several outcomes. First, the plan will encourage LTER sites and the Network to become more proactive in seeking publicity for achievements by LTER scientists and educators. Second, findings attributable to LTER site scientists will be increasingly cited in important media outlets (both professional and public), and LTER scientists will increasingly be invited to participate in public decision-making (e.g., providing expert testimony). Third, LTER will achieve greater name recognition throughout the world for the quality of site and Network science. Fourth, the strategic plan will specifically address new ways to employ information technology to engage underserved groups in the research and education activities proposed in the LTER Decadal Plan.

The strategic planning effort will include *virtual and face-to-face planning meetings* whereby participants assess LTER strengths, barriers and opportunities; identify and prioritize strategies, tactics, and actions; develop timelines, metrics and milestones; and assign responsibilities. The Executive Board and Science Council will review the plan, and it will be revised accordingly. The final plan will be published and broadly disseminated to sites, scientists, and educators where it can serve as a reference and a road map for action.

At this stage, we welcome your engagement in the process. We are especially interested in forming a planning committee that includes LTER communication experts and other stakeholders, as well as nationally recognized experts in both traditional and non-traditional (e.g., podcasts, social networking) communication mechanisms. If you are interested in possibly participating in the planning effort, or you know someone who would make an ideal participant, please send your nominations and/or self-nomination to wmichener@LTERnet.edu.

Proposed Objectives for Communication Planning:

- ID and prioritize stakeholders
- ID and prioritize types of information to be communicated

- ID best ways to communicate information
- Develop LTER communication mission/vision statements
- Perform SWOT analysis, focusing on LTER strengths and opportunities
- Complete draft strategic plan/implementation plan
- Establish metrics of success for evaluation/assessment
- ID components of a communication/PR toolkit
- Recommend protocols for PR so that PIs/scientists optimally communicate exciting developments to LNO
- Others???

Questions for Executive Board:

1. Any modifications to Proposed Objectives (see above)?
2. How do you wish to be engaged in the process?
3. Does someone from the EB wish to be part of the 3-day strategic planning workshop?
4. Do you have any nominations for workshop participants?

Appendix V. Schedule for Development of Strategic Communication Plan

The Strategic Communication Planning effort will include virtual and face-to-face planning meetings whereby participants assess LTER strengths, weaknesses, opportunities and threats (SWOT analysis); identify and prioritize strategies, tactics, and actions; develop timelines, metrics, and milestones; and assign responsibilities. We intend to schedule two meetings: 1) strategic planning meeting featuring experts conversant with the LTER mission, vision, goals, and objectives (guided by a facilitator) to develop the strategies, and 2) technical planning meeting featuring technical (e.g. web, media) experts to develop specific plans for implementation. Consequently, we have developed the following schedule:

1. Identify facilitator – February 7, 2010
2. Identify participants in the strategic planning meeting – February 15
3. Prepare meeting material – March 23
4. Schedule strategic planning meeting – March 30
5. Develop a draft plan – April 15
6. Review and revise draft plan – May 5
7. Present draft plan to the Science Council (SC) – May 12
8. Make revisions based on SC comments – May 26
9. Identify experts for technical planning meeting – June 1
10. Schedule technical planning meeting – July 15
11. Draft implementation plan – August 1
12. Review and revise draft implementation plan – August 21
13. Present completed Strategic Communication Plan to the LTER Executive Board – September 1.

Appendix VI. Summary of Role and Use Questions

Role Cats * Q14MailAliases Crosstabulation

		Q14MailAliases			
		Yes	No	Total	
Role Cats	Lead PI	Count	9	21	30
		% within Role Cats	30.0%	70.0%	100.0%
		% within Q14MailAliases	10.3%	3.9%	4.8%
		% of Total	1.4%	3.4%	4.8%
	Co-PI	Count	16	118	134
		% within Role Cats	11.9%	88.1%	100.0%
		% within Q14MailAliases	18.4%	22.0%	21.5%
		% of Total	2.6%	18.9%	21.5%
	Information manager	Count	16	11	27
		% within Role Cats	59.3%	40.7%	100.0%
		% within Q14MailAliases	18.4%	2.1%	4.3%
		% of Total	2.6%	1.8%	4.3%
	Graduate Student	Count	12	178	190
		% within Role Cats	6.3%	93.7%	100.0%
		% within Q14MailAliases	13.8%	33.2%	30.5%
		% of Total	1.9%	28.6%	30.5%
	Education Coordinator/Researcher	Count	6	23	29
		% within Role Cats	20.7%	79.3%	100.0%
		% within Q14MailAliases	6.9%	4.3%	4.7%
		% of Total	1.0%	3.7%	4.7%
	Site Scientist/Educator	Count	14	98	112
		% within Role Cats	12.5%	87.5%	100.0%
		% within Q14MailAliases	16.1%	18.3%	18.0%
		% of Total	2.2%	15.7%	18.0%
	Post-Doctoral researcher	Count	2	16	18
		% within Role Cats	11.1%	88.9%	100.0%
		% within Q14MailAliases	2.3%	3.0%	2.9%
		% of Total	.3%	2.6%	2.9%
	Technician/Lab program	Count	4	21	25
		% within Role Cats	16.0%	84.0%	100.0%
		% within Q14MailAliases	4.6%	3.9%	4.0%
		% of Total	.6%	3.4%	4.0%
	Visiting researcher/Collaborator	Count	6	37	43
		% within Role Cats	14.0%	86.0%	100.0%
		% within Q14MailAliases	6.9%	6.9%	6.9%
		% of Total	1.0%	5.9%	6.9%
	Former Student/Researcher	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Q14MailAliases	.0%	.2%	.2%
		% of Total	.0%	.2%	.2%
	Miscellaneous	Count	2	12	14
		% within Role Cats	14.3%	85.7%	100.0%

Total	% within Q14MailAliases	2.3%	2.2%	2.2%
	% of Total	.3%	1.9%	2.2%
	Count	87	536	623
	% within Role Cats	14.0%	86.0%	100.0%
	% within Q14MailAliases	100.0%	100.0%	100.0%
	% of Total	14.0%	86.0%	100.0%

Role Cats * Do you use group lists Crosstabulation

			Do you use group lists		
			Yes	No	Total
Role Cats	Lead PI	Count	8	22	30
		% within Role Cats	26.7%	73.3%	100.0%
		% within Do you use group lists	7.1%	4.2%	4.7%
		% of Total	1.2%	3.4%	4.7%
	Co-PI	Count	18	121	139
		% within Role Cats	12.9%	87.1%	100.0%
		% within Do you use group lists	16.1%	22.9%	21.7%
		% of Total	2.8%	18.9%	21.7%
	Information manager	Count	20	9	29
		% within Role Cats	69.0%	31.0%	100.0%
		% within Do you use group lists	17.9%	1.7%	4.5%
		% of Total	3.1%	1.4%	4.5%
	Graduate Student	Count	25	171	196
		% within Role Cats	12.8%	87.2%	100.0%
		% within Do you use group lists	22.3%	32.3%	30.6%
		% of Total	3.9%	26.7%	30.6%
	Education Coordinator/Researcher	Count	8	21	29
		% within Role Cats	27.6%	72.4%	100.0%
		% within Do you use group lists	7.1%	4.0%	4.5%
		% of Total	1.2%	3.3%	4.5%
	Site Scientist/Educator	Count	17	99	116
		% within Role Cats	14.7%	85.3%	100.0%
		% within Do you use group lists	15.2%	18.7%	18.1%
		% of Total	2.7%	15.4%	18.1%
	Post-Doctoral researcher	Count	2	16	18
		% within Role Cats	11.1%	88.9%	100.0%
		% within Do you use group lists	1.8%	3.0%	2.8%
		% of Total	.3%	2.5%	2.8%
	Technician/Lab program	Count	6	20	26
		% within Role Cats	23.1%	76.9%	100.0%
		% within Do you use group lists	5.4%	3.8%	4.1%
		% of Total	.9%	3.1%	4.1%
	Visiting researcher/Collaborator	Count	6	38	44
		% within Role Cats	13.6%	86.4%	100.0%
		% within Do you use group lists	5.4%	7.2%	6.9%
		% of Total	.9%	5.9%	6.9%
	Former Student/Researcher	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%

		% within Do you use group lists	.0%	.2%	.2%
		% of Total	.0%	.2%	.2%
	Miscellaneous	Count	2	11	13
		% within Role Cats	15.4%	84.6%	100.0%
		% within Do you use group lists	1.8%	2.1%	2.0%
		% of Total	.3%	1.7%	2.0%
Total		Count	112	529	641
		% within Role Cats	17.5%	82.5%	100.0%
		% within Do you use group lists	100.0%	100.0%	100.0%
		% of Total	17.5%	82.5%	100.0%

Role Cats * Have you ever used Video Conferencing Crosstabulation

		Have you ever used Video Conferencing		
		Yes	No	Total
Role Cats	Lead PI	Count	12	18
		% within Role Cats	40.0%	60.0%
		% within Have you ever used Video Conferencing	14.8%	3.3%
		% of Total	1.9%	2.9%
	Co-PI	Count	17	118
		% within Role Cats	12.6%	87.4%
		% within Have you ever used Video Conferencing	21.0%	21.5%
		% of Total	2.7%	18.8%
	Information manager	Count	26	3
		% within Role Cats	89.7%	10.3%
		% within Have you ever used Video Conferencing	32.1%	.5%
		% of Total	4.1%	.5%
	Graduate Student	Count	7	181
		% within Role Cats	3.7%	96.3%
		% within Have you ever used Video Conferencing	8.6%	33.0%
		% of Total	1.1%	28.8%
	Education Coordinator/Researcher	Count	2	27
		% within Role Cats	6.9%	93.1%
		% within Have you ever used Video Conferencing	2.5%	4.9%
		% of Total	.3%	4.3%
	Site Scientist/Educator	Count	10	106
		% within Role Cats	8.6%	91.4%
		% within Have you ever used Video Conferencing	12.3%	19.3%
		% of Total	1.6%	16.9%
	Post-Doctoral researcher	Count	0	18
		% within Role Cats	.0%	100.0%
		% within Have you ever used Video Conferencing	.0%	3.3%
		% of Total	.0%	2.9%

Technician/Lab program	Count	2	24	26
	% within Role Cats	7.7%	92.3%	100.0%
	% within Have you ever used Video Conferencing	2.5%	4.4%	4.1%
	% of Total	.3%	3.8%	4.1%
Visiting researcher/Collaborator	Count	3	41	44
	% within Role Cats	6.8%	93.2%	100.0%
	% within Have you ever used Video Conferencing	3.7%	7.5%	7.0%
	% of Total	.5%	6.5%	7.0%
Former Student/Researcher	Count	0	1	1
	% within Role Cats	.0%	100.0%	100.0%
	% within Have you ever used Video Conferencing	.0%	.2%	.2%
	% of Total	.0%	.2%	.2%
Miscellaneous	Count	2	11	13
	% within Role Cats	15.4%	84.6%	100.0%
	% within Have you ever used Video Conferencing	2.5%	2.0%	2.1%
	% of Total	.3%	1.7%	2.1%
Total	Count	81	548	629
	% within Role Cats	12.9%	87.1%	100.0%
	% within Have you ever used Video Conferencing	100.0%	100.0%	100.0%
	% of Total	12.9%	87.1%	100.0%

Role Cats * Do you use Climate Database Crosstabulation

			Do you use Climate Database		
			Yes	No	Total
Role Cats	Lead PI	Count	8	22	30
		% within Role Cats	26.7%	73.3%	100.0%
		% within Do you use Climate Database	5.4%	4.5%	4.7%
		% of Total	1.3%	3.4%	4.7%
	Co-PI	Count	34	104	138
		% within Role Cats	24.6%	75.4%	100.0%
		% within Do you use Climate Database	22.8%	21.3%	21.6%
		% of Total	5.3%	16.3%	21.6%
	Information manager	Count	18	11	29
		% within Role Cats	62.1%	37.9%	100.0%
		% within Do you use Climate Database	12.1%	2.2%	4.5%
		% of Total	2.8%	1.7%	4.5%
	Graduate Student	Count	44	150	194
		% within Role Cats	22.7%	77.3%	100.0%
		% within Do you use Climate Database	29.5%	30.7%	30.4%
		% of Total	6.9%	23.5%	30.4%
	Education Coordinator/Researcher	Count	7	22	29
		% within Role Cats	24.1%	75.9%	100.0%

		% within Do you use Climate Database	4.7%	4.5%	4.5%
		% of Total	1.1%	3.4%	4.5%
Site Scientist/Educator	Count		23	93	116
	% within Role Cats		19.8%	80.2%	100.0%
	% within Do you use Climate Database		15.4%	19.0%	18.2%
	% of Total		3.6%	14.6%	18.2%
Post-Doctoral researcher	Count		3	15	18
	% within Role Cats		16.7%	83.3%	100.0%
	% within Do you use Climate Database		2.0%	3.1%	2.8%
	% of Total		.5%	2.4%	2.8%
Technician/Lab program	Count		0	26	26
	% within Role Cats		.0%	100.0%	100.0%
	% within Do you use Climate Database		.0%	5.3%	4.1%
	% of Total		.0%	4.1%	4.1%
Visiting researcher/Collaborator	Count		11	33	44
	% within Role Cats		25.0%	75.0%	100.0%
	% within Do you use Climate Database		7.4%	6.7%	6.9%
	% of Total		1.7%	5.2%	6.9%
Former Student/Researcher	Count		0	1	1
	% within Role Cats		.0%	100.0%	100.0%
	% within Do you use Climate Database		.0%	.2%	.2%
	% of Total		.0%	.2%	.2%
Miscellaneous	Count		1	12	13
	% within Role Cats		7.7%	92.3%	100.0%
	% within Do you use Climate Database		.7%	2.5%	2.0%
	% of Total		.2%	1.9%	2.0%
Total	Count		149	489	638
	% within Role Cats		23.4%	76.6%	100.0%
	% within Do you use Climate Database		100.0%	100.0%	100.0%
	% of Total		23.4%	76.6%	100.0%

Role Cats * Do you use Hydrology Database Crosstabulation

		<u>Do you use Hydrology Database</u>			
		Yes	No	Total	
Role Cats	Lead PI	Count	5	25	30
		% within Role Cats	16.7%	83.3%	100.0%
		% within Do you use Hydrology Database	7.4%	4.4%	4.7%
		% of Total	.8%	4.0%	4.7%
	Co-PI	Count	14	122	136
		% within Role Cats	10.3%	89.7%	100.0%

	% within Do you use Hydrology Database	20.6%	21.6%	21.5%
	% of Total	2.2%	19.3%	21.5%
Information manager	Count	8	21	29
	% within Role Cats	27.6%	72.4%	100.0%
	% within Do you use Hydrology Database	11.8%	3.7%	4.6%
	% of Total	1.3%	3.3%	4.6%
Graduate Student	Count	20	172	192
	% within Role Cats	10.4%	89.6%	100.0%
	% within Do you use Hydrology Database	29.4%	30.5%	30.4%
	% of Total	3.2%	27.2%	30.4%
Education Coordinator/Researcher	Count	1	28	29
	% within Role Cats	3.4%	96.6%	100.0%
	% within Do you use Hydrology Database	1.5%	5.0%	4.6%
	% of Total	.2%	4.4%	4.6%
Site Scientist/Educator	Count	14	101	115
	% within Role Cats	12.2%	87.8%	100.0%
	% within Do you use Hydrology Database	20.6%	17.9%	18.2%
	% of Total	2.2%	16.0%	18.2%
Post-Doctoral researcher	Count	0	18	18
	% within Role Cats	.0%	100.0%	100.0%
	% within Do you use Hydrology Database	.0%	3.2%	2.8%
	% of Total	.0%	2.8%	2.8%
Technician/Lab program	Count	0	25	25
	% within Role Cats	.0%	100.0%	100.0%
	% within Do you use Hydrology Database	.0%	4.4%	4.0%
	% of Total	.0%	4.0%	4.0%
Visiting researcher/Collaborator	Count	6	38	44
	% within Role Cats	13.6%	86.4%	100.0%
	% within Do you use Hydrology Database	8.8%	6.7%	7.0%
	% of Total	.9%	6.0%	7.0%
Former Student/Researcher	Count	0	1	1
	% within Role Cats	.0%	100.0%	100.0%
	% within Do you use Hydrology Database	.0%	.2%	.2%
	% of Total	.0%	.2%	.2%
Miscellaneous	Count	0	13	13
	% within Role Cats	.0%	100.0%	100.0%
	% within Do you use Hydrology Database	.0%	2.3%	2.1%
	% of Total	.0%	2.1%	2.1%
Total	Count	68	564	632
	% within Role Cats	10.8%	89.2%	100.0%
	% within Do you use Hydrology Database	100.0%	100.0%	100.0%
	% of Total	10.8%	89.2%	100.0%

Role Cats * Do you use the personnel directory Crosstabulation

		Do you use the personnel directory			
			Yes	No	Total
Role Cats	Lead PI	Count	19	11	30
		% within Role Cats	63.3%	36.7%	100.0%
		% within Do you use the personnel directory	6.3%	3.4%	4.8%
	Co-PI	% of Total	3.0%	1.8%	4.8%
		Count	70	64	134
		% within Role Cats	52.2%	47.8%	100.0%
	Information manager	% within Do you use the personnel directory	23.1%	19.7%	21.3%
		% of Total	11.1%	10.2%	21.3%
		Count	23	6	29
	Graduate Student	% within Role Cats	79.3%	20.7%	100.0%
		% within Do you use the personnel directory	7.6%	1.8%	4.6%
		% of Total	3.7%	1.0%	4.6%
	Education Coordinator/Researcher	Count	78	112	190
		% within Role Cats	41.1%	58.9%	100.0%
		% within Do you use the personnel directory	25.7%	34.5%	30.3%
	Site Scientist/Educator	% of Total	12.4%	17.8%	30.3%
		Count	16	13	29
		% within Role Cats	55.2%	44.8%	100.0%
	Post-Doctoral researcher	% within Do you use the personnel directory	5.3%	4.0%	4.6%
		% of Total	2.5%	2.1%	4.6%
		Count	53	62	115
	Technician/Lab program	% within Role Cats	46.1%	53.9%	100.0%
		% within Do you use the personnel directory	17.5%	19.1%	18.3%
		% of Total	8.4%	9.9%	18.3%
	Visiting researcher/Collaborator	Count	11	7	18
		% within Role Cats	61.1%	38.9%	100.0%
		% within Do you use the personnel directory	3.6%	2.2%	2.9%
	Former Student/Researcher	% of Total	1.8%	1.1%	2.9%
		Count	12	13	25
		% within Role Cats	48.0%	52.0%	100.0%
		% within Do you use the personnel directory	4.0%	4.0%	4.0%
		% of Total	1.9%	2.1%	4.0%
		Count	16	28	44
		% within Role Cats	36.4%	63.6%	100.0%
		% within Do you use the personnel directory	5.3%	8.6%	7.0%
		% of Total	2.5%	4.5%	7.0%
		Count	1	0	1

		% within Role Cats	100.0%	.0%	100.0%
		% within Do you use the personnel directory	.3%	.0%	.2%
		% of Total	.2%	.0%	.2%
	Miscellaneous	Count	4	9	13
		% within Role Cats	30.8%	69.2%	100.0%
		% within Do you use the personnel directory	1.3%	2.8%	2.1%
		% of Total	.6%	1.4%	2.1%
	Total	Count	303	325	628
		% within Role Cats	48.2%	51.8%	100.0%
		% within Do you use the personnel directory	100.0%	100.0%	100.0%
		% of Total	48.2%	51.8%	100.0%

Role Cats * Do you use the LTER Bibliography Crosstabulation

			Do you use the LTER Bibliography		
			Yes	No	Total
Role Cats	Lead PI	Count	6	24	30
		% within Role Cats	20.0%	80.0%	100.0%
		% within Do you use the LTER Bibliography	4.6%	4.8%	4.8%
		% of Total	1.0%	3.8%	4.8%
	Co-PI	Count	30	104	134
		% within Role Cats	22.4%	77.6%	100.0%
		% within Do you use the LTER Bibliography	22.9%	20.9%	21.3%
		% of Total	4.8%	16.6%	21.3%
	Information manager	Count	12	17	29
		% within Role Cats	41.4%	58.6%	100.0%
		% within Do you use the LTER Bibliography	9.2%	3.4%	4.6%
		% of Total	1.9%	2.7%	4.6%
	Graduate Student	Count	32	158	190
		% within Role Cats	16.8%	83.2%	100.0%
		% within Do you use the LTER Bibliography	24.4%	31.8%	30.3%
		% of Total	5.1%	25.2%	30.3%
	Education Coordinator/Researcher	Count	4	25	29
		% within Role Cats	13.8%	86.2%	100.0%
		% within Do you use the LTER Bibliography	3.1%	5.0%	4.6%
		% of Total	.6%	4.0%	4.6%
	Site Scientist/Educator	Count	27	88	115
		% within Role Cats	23.5%	76.5%	100.0%
		% within Do you use the LTER Bibliography	20.6%	17.7%	18.3%
		% of Total	4.3%	14.0%	18.3%
	Post-Doctoral researcher	Count	3	15	18
		% within Role Cats	16.7%	83.3%	100.0%

		% within Do you use the LTER Bibliography	2.3%	3.0%	2.9%
		% of Total	.5%	2.4%	2.9%
Technician/Lab program	Count		1	24	25
		% within Role Cats	4.0%	96.0%	100.0%
		% within Do you use the LTER Bibliography	.8%	4.8%	4.0%
		% of Total	.2%	3.8%	4.0%
Visiting researcher/Collaborator	Count		13	31	44
		% within Role Cats	29.5%	70.5%	100.0%
		% within Do you use the LTER Bibliography	9.9%	6.2%	7.0%
		% of Total	2.1%	4.9%	7.0%
Former Student/Researcher	Count		0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Do you use the LTER Bibliography	.0%	.2%	.2%
		% of Total	.0%	.2%	.2%
Miscellaneous	Count		3	10	13
		% within Role Cats	23.1%	76.9%	100.0%
		% within Do you use the LTER Bibliography	2.3%	2.0%	2.1%
		% of Total	.5%	1.6%	2.1%
Total	Count		131	497	628
		% within Role Cats	20.9%	79.1%	100.0%
		% within Do you use the LTER Bibliography	100.0%	100.0%	100.0%
		% of Total	20.9%	79.1%	100.0%

Role Cats * Do you use the LTER Network Remote SA Crosstabulation

			Do you use the LTER Network Remote SA		
			Yes	No	Total
Role Cats	Lead PI	Count	2	28	30
		% within Role Cats	6.7%	93.3%	100.0%
		% within Do you use the LTER Network Remote SA	6.3%	4.7%	4.8%
		% of Total	.3%	4.5%	4.8%
	Co-PI	Count	6	127	133
		% within Role Cats	4.5%	95.5%	100.0%
		% within Do you use the LTER Network Remote SA	18.8%	21.5%	21.3%
		% of Total	1.0%	20.4%	21.3%
	Information manager	Count	5	24	29
		% within Role Cats	17.2%	82.8%	100.0%
		% within Do you use the LTER Network Remote SA	15.6%	4.1%	4.7%
		% of Total	.8%	3.9%	4.7%
	Graduate Student	Count	11	176	187
		% within Role Cats	5.9%	94.1%	100.0%

		% within Do you use the LTER Network Remote SA	34.4%	29.8%	30.0%
		% of Total	1.8%	28.3%	30.0%
Education	Coordinator/Researcher	Count	1	28	29
		% within Role Cats	3.4%	96.6%	100.0%
		% within Do you use the LTER Network Remote SA	3.1%	4.7%	4.7%
		% of Total	.2%	4.5%	4.7%
	Site Scientist/Educator	Count	7	108	115
		% within Role Cats	6.1%	93.9%	100.0%
		% within Do you use the LTER Network Remote SA	21.9%	18.3%	18.5%
		% of Total	1.1%	17.3%	18.5%
	Post-Doctoral researcher	Count	0	18	18
		% within Role Cats	.0%	100.0%	100.0%
		% within Do you use the LTER Network Remote SA	.0%	3.0%	2.9%
		% of Total	.0%	2.9%	2.9%
	Technician/Lab program	Count	0	24	24
		% within Role Cats	.0%	100.0%	100.0%
		% within Do you use the LTER Network Remote SA	.0%	4.1%	3.9%
		% of Total	.0%	3.9%	3.9%
	Visiting researcher/Collaborator	Count	0	44	44
		% within Role Cats	.0%	100.0%	100.0%
		% within Do you use the LTER Network Remote SA	.0%	7.4%	7.1%
		% of Total	.0%	7.1%	7.1%
	Former Student/Researcher	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Do you use the LTER Network Remote SA	.0%	.2%	.2%
		% of Total	.0%	.2%	.2%
	Miscellaneous	Count	0	13	13
		% within Role Cats	.0%	100.0%	100.0%
		% within Do you use the LTER Network Remote SA	.0%	2.2%	2.1%
		% of Total	.0%	2.1%	2.1%
Total		Count	32	591	623
		% within Role Cats	5.1%	94.9%	100.0%
		% within Do you use the LTER Network Remote SA	100.0%	100.0%	100.0%
		% of Total	5.1%	94.9%	100.0%

Role Cats * Do you use the Document Archive to access LTER Crosstabulation

		Do you use the Document Archive to access LTER			
		Yes	No	Total	
Role Cats	Lead PI	Count	15	15	30
		% within Role Cats	50.0%	50.0%	100.0%

Co-PI	% within Do you use the Document Archive to access LTER	12.1%	3.1%	4.9%
	% of Total	2.5%	2.5%	4.9%
	Count	23	108	131
	% within Role Cats	17.6%	82.4%	100.0%
Information manager	% within Do you use the Document Archive to access LTER	18.5%	22.2%	21.5%
	% of Total	3.8%	17.7%	21.5%
	Count	21	7	28
	% within Role Cats	75.0%	25.0%	100.0%
Graduate Student	% within Do you use the Document Archive to access LTER	16.9%	1.4%	4.6%
	% of Total	3.4%	1.1%	4.6%
	Count	22	159	181
	% within Role Cats	12.2%	87.8%	100.0%
Education Coordinator/Researcher	% within Do you use the Document Archive to access LTER	17.7%	32.7%	29.7%
	% of Total	3.6%	26.1%	29.7%
	Count	6	23	29
	% within Role Cats	20.7%	79.3%	100.0%
Site Scientist/Educator	% within Do you use the Document Archive to access LTER	4.8%	4.7%	4.8%
	% of Total	1.0%	3.8%	4.8%
	Count	17	96	113
	% within Role Cats	15.0%	85.0%	100.0%
Post-Doctoral researcher	% within Do you use the Document Archive to access LTER	13.7%	19.8%	18.5%
	% of Total	2.8%	15.7%	18.5%
	Count	4	14	18
	% within Role Cats	22.2%	77.8%	100.0%
Technician/Lab program	% within Do you use the Document Archive to access LTER	3.2%	2.9%	3.0%
	% of Total	.7%	2.3%	3.0%
	Count	4	19	23
	% within Role Cats	17.4%	82.6%	100.0%
Visiting researcher/Collaborator	% within Do you use the Document Archive to access LTER	3.2%	3.9%	3.8%
	% of Total	.7%	3.1%	3.8%
	Count	9	35	44
	% within Role Cats	20.5%	79.5%	100.0%
Former Student/Researcher	% within Do you use the Document Archive to access LTER	7.3%	7.2%	7.2%
	% of Total	1.5%	5.7%	7.2%
	Count	0	1	1
	% within Role Cats	.0%	100.0%	100.0%

		% within Do you use the Document Archive to access LTER	.0%	.2%	.2%
		% of Total	.0%	.2%	.2%
Miscellaneous		Count	3	9	12
		% within Role Cats	25.0%	75.0%	100.0%
		% within Do you use the Document Archive to access LTER	2.4%	1.9%	2.0%
		% of Total	.5%	1.5%	2.0%
Total		Count	124	486	610
		% within Role Cats	20.3%	79.7%	100.0%
		% within Do you use the Document Archive to access LTER	100.0%	100.0%	100.0%
		% of Total	20.3%	79.7%	100.0%

Role Cats * Do you use the Data Catalog Crosstabulation

		Do you use the Data Catalog			
		Yes	No	Total	
Role Cats	Lead PI	Count	5	25	30
		% within Role Cats	16.7%	83.3%	100.0%
		% within Do you use the Data Catalog	4.4%	5.1%	4.9%
		% of Total	.8%	4.1%	4.9%
	Co-PI	Count	18	113	131
		% within Role Cats	13.7%	86.3%	100.0%
		% within Do you use the Data Catalog	15.9%	22.9%	21.6%
		% of Total	3.0%	18.6%	21.6%
	Information manager	Count	18	10	28
		% within Role Cats	64.3%	35.7%	100.0%
		% within Do you use the Data Catalog	15.9%	2.0%	4.6%
		% of Total	3.0%	1.6%	4.6%
	Graduate Student	Count	32	147	179
		% within Role Cats	17.9%	82.1%	100.0%
		% within Do you use the Data Catalog	28.3%	29.8%	29.5%
		% of Total	5.3%	24.2%	29.5%
	Education Coordinator/Researcher	Count	2	26	28
		% within Role Cats	7.1%	92.9%	100.0%
		% within Do you use the Data Catalog	1.8%	5.3%	4.6%
		% of Total	.3%	4.3%	4.6%
	Site Scientist/Educator	Count	21	92	113
		% within Role Cats	18.6%	81.4%	100.0%
		% within Do you use the Data Catalog	18.6%	18.6%	18.6%
		% of Total	3.5%	15.2%	18.6%
	Post-Doctoral researcher	Count	3	15	18
		% within Role Cats	16.7%	83.3%	100.0%

		% within Do you use the Data Catalog	2.7%	3.0%	3.0%
		% of Total	.5%	2.5%	3.0%
		Count	6	17	23
		% within Role Cats	26.1%	73.9%	100.0%
Technician/Lab program		% within Do you use the Data Catalog	5.3%	3.4%	3.8%
		% of Total	1.0%	2.8%	3.8%
		Count	7	37	44
		% within Role Cats	15.9%	84.1%	100.0%
Visiting researcher/Collaborator		% within Do you use the Data Catalog	6.2%	7.5%	7.2%
		% of Total	1.2%	6.1%	7.2%
		Count	1	0	1
		% within Role Cats	100.0%	.0%	100.0%
Former Student/Researcher		% within Do you use the Data Catalog	.9%	.0%	.2%
		% of Total	.2%	.0%	.2%
		Count	0	12	12
		% within Role Cats	.0%	100.0%	100.0%
Miscellaneous		% within Do you use the Data Catalog	.0%	2.4%	2.0%
		% of Total	.0%	2.0%	2.0%
		Count	113	494	607
		% within Role Cats	18.6%	81.4%	100.0%
Total		% within Do you use the Data Catalog	100.0%	100.0%	100.0%
		% of Total	18.6%	81.4%	100.0%

Role Cats * Do you use the Image archive Crosstabulation

		Do you use the Image archive			
		Yes	No	Total	
Role Cats	Lead PI	Count	7	23	30
		% within Role Cats	23.3%	76.7%	100.0%
		% within Do you use the Image archive	10.6%	4.3%	5.0%
		% of Total	1.2%	3.8%	5.0%
	Co-PI	Count	15	116	131
		% within Role Cats	11.5%	88.5%	100.0%
		% within Do you use the Image archive	22.7%	21.5%	21.7%
		% of Total	2.5%	19.2%	21.7%
	Information manager	Count	4	24	28
		% within Role Cats	14.3%	85.7%	100.0%
		% within Do you use the Image archive	6.1%	4.5%	4.6%
		% of Total	.7%	4.0%	4.6%
Graduate Student	Count	15	163	178	
	% within Role Cats	8.4%	91.6%	100.0%	
	% within Do you use the Image archive	22.7%	30.2%	29.4%	

Education Coordinator/Researcher	% of Total	2.5%	26.9%	29.4%
	Count	4	23	27
	% within Role Cats	14.8%	85.2%	100.0%
	% within Do you use the Image archive	6.1%	4.3%	4.5%
Site Scientist/Educator	% of Total	.7%	3.8%	4.5%
	Count	10	103	113
	% within Role Cats	8.8%	91.2%	100.0%
	% within Do you use the Image archive	15.2%	19.1%	18.7%
Post-Doctoral researcher	% of Total	1.7%	17.0%	18.7%
	Count	3	15	18
	% within Role Cats	16.7%	83.3%	100.0%
	% within Do you use the Image archive	4.5%	2.8%	3.0%
Technician/Lab program	% of Total	.5%	2.5%	3.0%
	Count	0	23	23
	% within Role Cats	.0%	100.0%	100.0%
	% within Do you use the Image archive	.0%	4.3%	3.8%
Visiting researcher/Collaborator	% of Total	.0%	3.8%	3.8%
	Count	7	37	44
	% within Role Cats	15.9%	84.1%	100.0%
	% within Do you use the Image archive	10.6%	6.9%	7.3%
Former Student/Researcher	% of Total	1.2%	6.1%	7.3%
	Count	0	1	1
	% within Role Cats	.0%	100.0%	100.0%
	% within Do you use the Image archive	.0%	.2%	.2%
Miscellaneous	% of Total	.0%	.2%	.2%
	Count	1	11	12
	% within Role Cats	8.3%	91.7%	100.0%
	% within Do you use the Image archive	1.5%	2.0%	2.0%
Total	% of Total	.2%	1.8%	2.0%
	Count	66	539	605
	% within Role Cats	10.9%	89.1%	100.0%
	% within Do you use the Image archive	100.0%	100.0%	100.0%
	% of Total	10.9%	89.1%	100.0%

Role Cats * have you ever submitted a proposal to LNO Crosstabulation

		have you ever submitted a proposal to LNO		
		Yes	No	Total
Role Cats	Lead PI			
	Count	12	18	30
	% within Role Cats	40.0%	60.0%	100.0%
	% within have you ever submitted a proposal to LNO	15.4%	3.6%	5.2%
	% of Total	2.1%	3.1%	5.2%

Co-PI	Count	35	91	126
	% within Role Cats	27.8%	72.2%	100.0%
	% within have you ever submitted a proposal to LNO	44.9%	18.2%	21.8%
	% of Total	6.1%	15.7%	21.8%
Information manager	Count	9	19	28
	% within Role Cats	32.1%	67.9%	100.0%
	% within have you ever submitted a proposal to LNO	11.5%	3.8%	4.8%
	% of Total	1.6%	3.3%	4.8%
Graduate Student	Count	7	159	166
	% within Role Cats	4.2%	95.8%	100.0%
	% within have you ever submitted a proposal to LNO	9.0%	31.8%	28.7%
	% of Total	1.2%	27.5%	28.7%
Education Coordinator/Researcher	Count	2	25	27
	% within Role Cats	7.4%	92.6%	100.0%
	% within have you ever submitted a proposal to LNO	2.6%	5.0%	4.7%
	% of Total	.3%	4.3%	4.7%
Site Scientist/Educator	Count	8	100	108
	% within Role Cats	7.4%	92.6%	100.0%
	% within have you ever submitted a proposal to LNO	10.3%	20.0%	18.7%
	% of Total	1.4%	17.3%	18.7%
Post-Doctoral researcher	Count	3	15	18
	% within Role Cats	16.7%	83.3%	100.0%
	% within have you ever submitted a proposal to LNO	3.8%	3.0%	3.1%
	% of Total	.5%	2.6%	3.1%
Technician/Lab program	Count	0	21	21
	% within Role Cats	.0%	100.0%	100.0%
	% within have you ever submitted a proposal to LNO	.0%	4.2%	3.6%
	% of Total	.0%	3.6%	3.6%
Visiting researcher/Collaborator	Count	1	42	43
	% within Role Cats	2.3%	97.7%	100.0%
	% within have you ever submitted a proposal to LNO	1.3%	8.4%	7.4%
	% of Total	.2%	7.3%	7.4%
Former Student/Researcher	Count	0	1	1
	% within Role Cats	.0%	100.0%	100.0%
	% within have you ever submitted a proposal to LNO	.0%	.2%	.2%
	% of Total	.0%	.2%	.2%
Miscellaneous	Count	1	9	10
	% within Role Cats	10.0%	90.0%	100.0%
	% within have you ever submitted a proposal to LNO	1.3%	1.8%	1.7%
	% of Total	.2%	1.6%	1.7%
Total	Count	78	500	578
	% within Role Cats	13.5%	86.5%	100.0%

% within have you ever submitted a proposal to LNO	100.0%	100.0%	100.0%
% of Total	13.5%	86.5%	100.0%

Role Cats * Have you ever attended a training session by LNO Crosstabulation

			Have you ever attended a training session by LNO		
			Yes	No	Total
Role Cats	Lead PI	Count	13	16	29
		% within Role Cats	44.8%	55.2%	100.0%
		% within Have you ever attended a training session by LNO	6.7%	4.5%	5.2%
		% of Total	2.4%	2.9%	5.2%
	Co-PI	Count	54	70	124
		% within Role Cats	43.5%	56.5%	100.0%
		% within Have you ever attended a training session by LNO	27.7%	19.6%	22.4%
		% of Total	9.8%	12.7%	22.4%
	Information manager	Count	21	7	28
		% within Role Cats	75.0%	25.0%	100.0%
		% within Have you ever attended a training session by LNO	10.8%	2.0%	5.1%
		% of Total	3.8%	1.3%	5.1%
	Graduate Student	Count	35	119	154
		% within Role Cats	22.7%	77.3%	100.0%
		% within Have you ever attended a training session by LNO	17.9%	33.2%	27.8%
		% of Total	6.3%	21.5%	27.8%
	Education Coordinator/Researcher	Count	10	17	27
		% within Role Cats	37.0%	63.0%	100.0%
		% within Have you ever attended a training session by LNO	5.1%	4.7%	4.9%
		% of Total	1.8%	3.1%	4.9%
	Site Scientist/Educator	Count	36	65	101
		% within Role Cats	35.6%	64.4%	100.0%
		% within Have you ever attended a training session by LNO	18.5%	18.2%	18.3%
		% of Total	6.5%	11.8%	18.3%
	Post-Doctoral researcher	Count	6	12	18
		% within Role Cats	33.3%	66.7%	100.0%
		% within Have you ever attended a training session by LNO	3.1%	3.4%	3.3%
		% of Total	1.1%	2.2%	3.3%
	Technician/Lab program	Count	2	19	21
		% within Role Cats	9.5%	90.5%	100.0%
		% within Have you ever attended a training session by LNO	1.0%	5.3%	3.8%
		% of Total	.4%	3.4%	3.8%
	Visiting researcher/Collaborator	Count	14	27	41
		% within Role Cats	34.1%	65.9%	100.0%

		% within Have you ever attended a training session by LNO	7.2%	7.5%	7.4%
		% of Total	2.5%	4.9%	7.4%
	Former Student/Researcher	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Have you ever attended a training session by LNO	.0%	.3%	.2%
		% of Total	.0%	.2%	.2%
	Miscellaneous	Count	4	5	9
		% within Role Cats	44.4%	55.6%	100.0%
		% within Have you ever attended a training session by LNO	2.1%	1.4%	1.6%
		% of Total	.7%	.9%	1.6%
	Total	Count	195	358	553
		% within Role Cats	35.3%	64.7%	100.0%
		% within Have you ever attended a training session by LNO	100.0%	100.0%	100.0%
		% of Total	35.3%	64.7%	100.0%

Role Cats * Did you attend a training session facilitated by LNO Crosstabulation

		Did you attend a training session facilitated by LNO			
			Yes	No	Total
Role Cats	Lead PI	Count	2	11	13
		% within Role Cats	15.4%	84.6%	100.0%
		% within Did you attend a training session facilitated by LNO	3.9%	8.1%	7.0%
		% of Total	1.1%	5.9%	7.0%
	Co-PI	Count	6	45	51
		% within Role Cats	11.8%	88.2%	100.0%
		% within Did you attend a training session facilitated by LNO	11.8%	33.1%	27.3%
		% of Total	3.2%	24.1%	27.3%
	Information manager	Count	17	4	21
		% within Role Cats	81.0%	19.0%	100.0%
		% within Did you attend a training session facilitated by LNO	33.3%	2.9%	11.2%
		% of Total	9.1%	2.1%	11.2%
	Graduate Student	Count	5	27	32
		% within Role Cats	15.6%	84.4%	100.0%
		% within Did you attend a training session facilitated by LNO	9.8%	19.9%	17.1%
		% of Total	2.7%	14.4%	17.1%
	Education Coordinator/Researcher	Count	2	8	10
		% within Role Cats	20.0%	80.0%	100.0%
		% within Did you attend a training session facilitated by LNO	3.9%	5.9%	5.3%
		% of Total	1.1%	4.3%	5.3%
	Site Scientist/Educator	Count	12	24	36
		% within Role Cats	33.3%	66.7%	100.0%

		% within Did you attend a training session facilitated by LNO	23.5%	17.6%	19.3%
		% of Total	6.4%	12.8%	19.3%
Post-Doctoral researcher	Count		0	6	6
	% within Role Cats		.0%	100.0%	100.0%
	% within Did you attend a training session facilitated by LNO		.0%	4.4%	3.2%
	% of Total		.0%	3.2%	3.2%
Technician/Lab program	Count		2	0	2
	% within Role Cats		100.0%	.0%	100.0%
	% within Did you attend a training session facilitated by LNO		3.9%	.0%	1.1%
	% of Total		1.1%	.0%	1.1%
Visiting researcher/Collaborator	Count		2	10	12
	% within Role Cats		16.7%	83.3%	100.0%
	% within Did you attend a training session facilitated by LNO		3.9%	7.4%	6.4%
	% of Total		1.1%	5.3%	6.4%
Miscellaneous	Count		3	1	4
	% within Role Cats		75.0%	25.0%	100.0%
	% within Did you attend a training session facilitated by LNO		5.9%	.7%	2.1%
	% of Total		1.6%	.5%	2.1%
Total	Count		51	136	187
	% within Role Cats		27.3%	72.7%	100.0%
	% within Did you attend a training session facilitated by LNO		100.0%	100.0%	100.0%
	% of Total		27.3%	72.7%	100.0%

Role Cats * have you ever attended any other types of meetings by LNO Crosstabulation

		have you ever attended any other types of meetings by LNO			
			Yes	No	Total
Role Cats	Lead PI	Count	13	0	13
		% within Role Cats	100.0%	.0%	100.0%
		% within have you ever attended any other types of meetings by LNO	8.9%	.0%	6.8%
		% of Total	6.8%	.0%	6.8%
	Co-PI	Count	42	10	52
		% within Role Cats	80.8%	19.2%	100.0%
		% within have you ever attended any other types of meetings by LNO	28.8%	22.7%	27.4%
		% of Total	22.1%	5.3%	27.4%
	Information manager	Count	19	2	21
		% within Role Cats	90.5%	9.5%	100.0%
		% within have you ever attended any other types of meetings by LNO	13.0%	4.5%	11.1%
		% of Total	10.0%	1.1%	11.1%

Graduate Student	Count	22	12	34
	% within Role Cats	64.7%	35.3%	100.0%
	% within have you ever attended any other types of meetings by LNO	15.1%	27.3%	17.9%
	% of Total	11.6%	6.3%	17.9%
Education Coordinator/Researcher	Count	6	3	9
	% within Role Cats	66.7%	33.3%	100.0%
	% within have you ever attended any other types of meetings by LNO	4.1%	6.8%	4.7%
	% of Total	3.2%	1.6%	4.7%
Site Scientist/Educator	Count	24	11	35
	% within Role Cats	68.6%	31.4%	100.0%
	% within have you ever attended any other types of meetings by LNO	16.4%	25.0%	18.4%
	% of Total	12.6%	5.8%	18.4%
Post-Doctoral researcher	Count	5	1	6
	% within Role Cats	83.3%	16.7%	100.0%
	% within have you ever attended any other types of meetings by LNO	3.4%	2.3%	3.2%
	% of Total	2.6%	.5%	3.2%
Technician/Lab program	Count	1	1	2
	% within Role Cats	50.0%	50.0%	100.0%
	% within have you ever attended any other types of meetings by LNO	.7%	2.3%	1.1%
	% of Total	.5%	.5%	1.1%
Visiting researcher/Collaborator	Count	11	3	14
	% within Role Cats	78.6%	21.4%	100.0%
	% within have you ever attended any other types of meetings by LNO	7.5%	6.8%	7.4%
	% of Total	5.8%	1.6%	7.4%
Miscellaneous	Count	3	1	4
	% within Role Cats	75.0%	25.0%	100.0%
	% within have you ever attended any other types of meetings by LNO	2.1%	2.3%	2.1%
	% of Total	1.6%	.5%	2.1%
Total	Count	146	44	190
	% within Role Cats	76.8%	23.2%	100.0%
	% within have you ever attended any other types of meetings by LNO	100.0%	100.0%	100.0%
	% of Total	76.8%	23.2%	100.0%

Role Cats * Research working group meeting Crosstabulation

	Research working group meeting		Total
	Yes	No	

Role	Lead PI	Count	12	1	13
Cats		% within Role Cats	92.3%	7.7%	100.0%
		% within Research working group meeting	11.3%	2.9%	9.3%
		% of Total	8.6%	.7%	9.3%
	Co-PI	Count	30	11	41
		% within Role Cats	73.2%	26.8%	100.0%
		% within Research working group meeting	28.3%	32.4%	29.3%
		% of Total	21.4%	7.9%	29.3%
	Information manager	Count	12	7	19
		% within Role Cats	63.2%	36.8%	100.0%
		% within Research working group meeting	11.3%	20.6%	13.6%
		% of Total	8.6%	5.0%	13.6%
	Graduate Student	Count	15	4	19
		% within Role Cats	78.9%	21.1%	100.0%
		% within Research working group meeting	14.2%	11.8%	13.6%
		% of Total	10.7%	2.9%	13.6%
	Education Coordinator/Researcher	Count	3	3	6
		% within Role Cats	50.0%	50.0%	100.0%
		% within Research working group meeting	2.8%	8.8%	4.3%
		% of Total	2.1%	2.1%	4.3%
	Site Scientist/Educator	Count	21	3	24
		% within Role Cats	87.5%	12.5%	100.0%
		% within Research working group meeting	19.8%	8.8%	17.1%
		% of Total	15.0%	2.1%	17.1%
	Post-Doctoral researcher	Count	4	0	4
		% within Role Cats	100.0%	.0%	100.0%
		% within Research working group meeting	3.8%	.0%	2.9%
		% of Total	2.9%	.0%	2.9%
	Technician/Lab program	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Research working group meeting	.0%	2.9%	.7%
		% of Total	.0%	.7%	.7%
	Visiting researcher/Collaborator	Count	6	4	10
		% within Role Cats	60.0%	40.0%	100.0%
		% within Research working group meeting	5.7%	11.8%	7.1%
		% of Total	4.3%	2.9%	7.1%
	Miscellaneous	Count	3	0	3
		% within Role Cats	100.0%	.0%	100.0%
		% within Research working group meeting	2.8%	.0%	2.1%
		% of Total	2.1%	.0%	2.1%
Total		Count	106	34	140
		% within Role Cats	75.7%	24.3%	100.0%

% within Research working group meeting	100.0%	100.0%	100.0%
% of Total	75.7%	24.3%	100.0%

Role Cats * Planning group meeting Crosstabulation

			Planning group meeting		
			Yes	No	Total
Role Cats	Lead PI	Count	11	2	13
		% within Role Cats	84.6%	15.4%	100.0%
		% within Planning group meeting	15.3%	3.0%	9.4%
		% of Total	8.0%	1.4%	9.4%
	Co-PI	Count	25	14	39
		% within Role Cats	64.1%	35.9%	100.0%
		% within Planning group meeting	34.7%	21.2%	28.3%
		% of Total	18.1%	10.1%	28.3%
	Information manager	Count	11	8	19
		% within Role Cats	57.9%	42.1%	100.0%
		% within Planning group meeting	15.3%	12.1%	13.8%
		% of Total	8.0%	5.8%	13.8%
	Graduate Student	Count	5	14	19
		% within Role Cats	26.3%	73.7%	100.0%
		% within Planning group meeting	6.9%	21.2%	13.8%
		% of Total	3.6%	10.1%	13.8%
	Education Coordinator/Researcher	Count	4	2	6
		% within Role Cats	66.7%	33.3%	100.0%
		% within Planning group meeting	5.6%	3.0%	4.3%
		% of Total	2.9%	1.4%	4.3%
	Site Scientist/Educator	Count	8	15	23
		% within Role Cats	34.8%	65.2%	100.0%
		% within Planning group meeting	11.1%	22.7%	16.7%
		% of Total	5.8%	10.9%	16.7%
	Post-Doctoral researcher	Count	1	4	5
		% within Role Cats	20.0%	80.0%	100.0%
		% within Planning group meeting	1.4%	6.1%	3.6%
		% of Total	.7%	2.9%	3.6%
	Technician/Lab program	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Planning group meeting	.0%	1.5%	.7%
		% of Total	.0%	.7%	.7%
	Visiting researcher/Collaborator	Count	4	6	10
		% within Role Cats	40.0%	60.0%	100.0%
		% within Planning group meeting	5.6%	9.1%	7.2%
		% of Total	2.9%	4.3%	7.2%
	Miscellaneous	Count	3	0	3
		% within Role Cats	100.0%	.0%	100.0%
		% within Planning group meeting	4.2%	.0%	2.2%
		% of Total	2.2%	.0%	2.2%
Total		Count	72	66	138

% within Role Cats	52.2%	47.8%	100.0%
% within Planning group meeting	100.0%	100.0%	100.0%
% of Total	52.2%	47.8%	100.0%

Role Cats * Governance/Committee meeting Crosstabulation

			<u>Governance/Committee meeting</u>		
			Yes	No	Total
Role Cats	Lead PI	Count	13	0	13
		% within Role Cats	100.0%	.0%	100.0%
		% within Governance/Committee meeting	20.6%	.0%	9.4%
		% of Total	9.4%	.0%	9.4%
	Co-PI	Count	16	23	39
		% within Role Cats	41.0%	59.0%	100.0%
		% within Governance/Committee meeting	25.4%	30.3%	28.1%
		% of Total	11.5%	16.5%	28.1%
	Information manager	Count	16	3	19
		% within Role Cats	84.2%	15.8%	100.0%
		% within Governance/Committee meeting	25.4%	3.9%	13.7%
		% of Total	11.5%	2.2%	13.7%
	Graduate Student	Count	3	16	19
		% within Role Cats	15.8%	84.2%	100.0%
		% within Governance/Committee meeting	4.8%	21.1%	13.7%
		% of Total	2.2%	11.5%	13.7%
	Education Coordinator/Researcher	Count	3	3	6
		% within Role Cats	50.0%	50.0%	100.0%
		% within Governance/Committee meeting	4.8%	3.9%	4.3%
		% of Total	2.2%	2.2%	4.3%
	Site Scientist/Educator	Count	7	17	24
		% within Role Cats	29.2%	70.8%	100.0%
		% within Governance/Committee meeting	11.1%	22.4%	17.3%
		% of Total	5.0%	12.2%	17.3%
	Post-Doctoral researcher	Count	0	5	5
		% within Role Cats	.0%	100.0%	100.0%
		% within Governance/Committee meeting	.0%	6.6%	3.6%
		% of Total	.0%	3.6%	3.6%
	Technician/Lab program	Count	0	1	1
		% within Role Cats	.0%	100.0%	100.0%
		% within Governance/Committee meeting	.0%	1.3%	.7%
		% of Total	.0%	.7%	.7%
	Visiting researcher/Collaborator	Count	3	7	10
		% within Role Cats	30.0%	70.0%	100.0%

		% within Governance/Committee meeting	4.8%	9.2%	7.2%
		% of Total	2.2%	5.0%	7.2%
	Miscellaneous	Count	2	1	3
		% within Role Cats	66.7%	33.3%	100.0%
		% within Governance/Committee meeting	3.2%	1.3%	2.2%
		% of Total	1.4%	.7%	2.2%
	Total	Count	63	76	139
		% within Role Cats	45.3%	54.7%	100.0%
		% within Governance/Committee meeting	100.0%	100.0%	100.0%
		% of Total	45.3%	54.7%	100.0%
