Scope

- Support for Computing and communication infrastructure
  - Servers, storage, software, facilities, security
  - Desktop computing and Training Lab
  - Application and Technical Support
- Interactions with and facilitation of IM committee
  - Annual meetings
  - Product-oriented working groups
- Creation, management and curation of Network databases and web presence
- Development of and support for the Network Information System
- Database and IT consulting
Roadmap

- 3.2.1 Basic cyberinfrastructure support
- 3.2.4 Web, database, and IT consulting
- 3.2.2 Information management
- 3.2.3 Network Information System
  - Overview
  - Management
Basic Cyberinfrastructure Support

- Video teleconferencing support
- Web improvements
- Technology improvements
- Rich media recording and streaming
- Cybersecurity and data management briefings
- Training lab support
Staffing

- Marshall White – Sr. Web Designer
  - Web application support

- Dez Wyman – Systems Administrator
  - Servers and Storage

- James Williams – Systems Analyst
  - Desktop and communications

- Leanne Yanabu – Web designer
  - Web creation and maintenance
LNO Infrastructure

- 20 physical servers, 30 virtual servers
  - Email, LDAP, web, database, data catalog, request tracker, ClimDB, development, testing, standby, unit registry, controlled vocabulary, ftp, file server, system monitor, NIS components, irc, etc.

- 21 Terabytes of primary, 30 Tb secondary, 250 Tb tertiary storage

- 13 desktops, 11 laptops, and 3 rich media recorders

- 8 websites
  - www, news, databits, im, lno, intranet, search, dbadmin

- Information Technology Training Lab w/ 25 desktop computers and AV
Basic Cyberinfrastructure Support Accomplishments

- New web infrastructure in place
- Computing infrastructure evolving towards the clouds
- Offsite backup storage for sites online
- Confidence in the security of LNO site and databases increasing
- Training lab seeing increasing LTER use
Training Lab Use

- Days
- People


Roadmap

- 3.2.1 Basic cyberinfrastructure support
- 3.2.4 Web, database, and IT consulting
- 3.2.2 Information management
- 3.2.3 Network Information System
  - Overview
  - Management
Web, Database and IT consulting

- Technical support
- Site visits
Web, IT, and Database Consulting Accomplishments

- Process for vetting requests developed and approved
- 4 sites helped
  - HBR – Web, database
  - SEV, LUQ – Web, drupal
  - JRN – EcoTrends migration
- 5 sites visited
  - SGS, NWT
  - MCM, GCE
  - CWT
Roadmap

- 3.2.1 Basic cyberinfrastructure support
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  - Overview
  - Management
Information Management

- Information management committee meetings
- Product-oriented working groups and site compensation projects
- Network database maintenance
- Network database migration and creation
- Derived data products
Information Management

- Information management committee meetings
- Product-oriented working groups and site compensation projects
- Network database maintenance
- Network database migration and creation
- Derived data products
Staffing

- Yang Xia – Research Scientist II
  - Information Manager for Network databases
Product-oriented Working Groups

- LTER Controlled Vocabulary – John Porter – LTER Controlled Vocabulary
- Network Database Web Services – Karen Baker – Requirements for Personnel Database
- LTERMaps Phase II – Theresa Valentine – Map-based interface to site characteristics
- NIS Workflow best practices – Corinna Gries – in progress
- Data Package quality definitions – Margaret O’Brien – in progress
- Site Characteristics re-design – Don Henshaw – in progress
Product-oriented Working Groups

- LTER Controlled Vocabulary – John Porter – LTER Controlled Vocabulary
- Network Database Web Services – Karen Baker – Requirements for Personnel Database
- LTERMaps Phase II – Theresa Valentine – Map-based interface to site characteristics
- NIS Workflow best practices – Corinna Gries – in progress
- Data Package quality definitions – Margaret O’Brien – in progress
- Site Characteristics re-design – Don Henshaw – in progress
IM Site Compensation

- EML reports and congruency – Margaret O’Brien – report of EML quality across sites

- Network Database Web Services phase 1 – Mason Kortz – first iteration of personnel database code

- EML diagnosis and best practices mentorship – Mary “Gastil” Gastil-Buhl – in progress

- LTER Atlas – Jamie Hollingsworth – interactive LTER atlas, demonstrated for Science Council in May 2012
IM Site Compensation

- EML reports and congruency – Margaret O’Brien – report of EML quality across sites

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Network Database Management

- Personnel – all LTER personnel (LPI through undergraduate)
- Bibliography – all site publications
- Data catalog – all site metadata documents
- Site characteristics – descriptive site information
- ClimDB/HydroDB – climatological and hydrological data
Network Database Management

- Personnel – all LTER personnel (LPI through undergraduate)
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- Data catalog – all site metadata documents
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Data Catalog Interfaces

The US Long Term Ecological Research Network

A founding member of the International Long Term Ecological Research Network

LTER Data Portal Advanced Search

LT TER Sites

Subject

Owner/Creators

Spatial Criteria

Search Results (click on title for more information)

- Package includes URL(s) that should link directly to data
- Package includes a URL that may link to information, metadata, or data

View LT TER Site Data Package Title/Owners/Creators Data

- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
- CAP LT TER
Data Catalog Data Downloads
Migration from Andrews LTER complete in 2010

Since then we have added:
- 104 measurement stations (385 total)
  - 185 meteorological, 200 stream gauging
- 6 Million daily values (13.2 M total)
- 6 LTER sites (26 total)
- 10 USGS sites (21 total)

10,353 Downloads
- Since 2003
- 803 in 2012 so far
ClimDB/HydroDB Downloads

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LNO actively coordinating Network information management activities among sites

IMC product-oriented working groups are productive on Network Information System tools (e.g., data metrics, workflow practices)

LNO actively curating Network databases (e.g., ClimDB/HydroDB, personnel, site characteristics, bibliography)

LNO enabling adoption of community standards (e.g., EML, DOI, InCommon/CILogon)
3.2.1 Basic cyberinfrastructure support
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3.2.3 Network Information System
  ◦ Overview
  ◦ Management
The NIS includes site data, applications, synthetic and descriptive databases, workflow, end-user, system, and web-service applications.

PASTA provides consistent and stable access to data; data within PASTA adhere to known quality constraints.

Operational Plan focuses primarily on the development of PASTA.
Goals are to increase:

- **Availability and quality of data from LTER sites**
  - by the use and support of standardized approaches to metadata management and access to data

- **Timeliness and number of LTER derived data products**
  - by creating a suite of middleware programs and workflows that make it easy to create and maintain integrated data sets derived from LTER data

- **Knowledge generated from the synthesis of LTER data**
  - by creating standardized access and easy to use applications to discover, access, and use LTER data
NIS Design Considerations

- NIS Strategic Plan (2005)
- LTER Cyberinfrastructure Strategic Plan (2007)
- NISAC, IMC, Working groups, EcoTrends
- Internal influences
  - Network data policies and standards
- External influences
  - Knowledge Network for Biocomplexity (1999)
    - Metacat
    - Ecological Metadata Language
  - DataONE (2010)
  - Related programs and communities
Knowledge Network for Biocomplexity, ca. 1999

- Brought ecological informatics community together (NCEAS, LTER, OBFS, PISCO, ESA)
- Furthered development of Ecological Metadata Language
- Developed Metacat metadata database
- Facilitated adoption of EML by LTER sites
Staffing

- Mark Servilla – Research Asst. Professor
  ◦ Lead NIS developer

- Duane Costa – Analyst/Programmer III
  ◦ Lead NIS Programmer

- Danielle Stevens – Technical Writer

- Analyst/Programmer II
  ◦ Recent Vacancy
NIS Accomplishments

- PASTA development on schedule for beta release this fall.

- IM community actively engaged (e.g., Tiger teams spawning product-oriented working groups to continue development on workflows, data quality)

- PI community actively engaged (e.g., Tiger teams, NISAC, EB)
3.2.1 Basic Cyberinfrastructure Support
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Critical Elements of Managing NIS Development

- Communication
  - internal and external

- Managing Risk
  - identifying, monitoring, mitigation, contingency

- Evaluation
  - milestones and metrics
  - progress and success
Internal Communication

- Executive Director
  - fiscal responsibility, monthly engagement, contingency and resource reallocation
- Chief Information Officer
  - project oversight, weekly engagement, architecture/policy/timeline changes
- NIS Developer
  - project management, daily engagement, fte allocation, supervisor, release schedule
External Communication (Community Engagement)

- Stakeholder Bi-directional Communication
  - Broad cross-section (information managers, scientists, graduate students)
  - Broad range of activities (Tiger Teams, RFC, working groups, focus groups, surveys)

- NISAC
  - advisory and evaluation

- LTER Executive Board
  - endorsement and evaluation

- Outreach
Monitoring and Managing Risk

- Development risks
  - Analyst/Programmer staffing
  - Software integration challenges
    - Workflow product complexity
    - Data Portal product complexity

- Operations risks
  - Transition to operations
  - Site metadata quality
  - Site data policy restrictions
Metrics of Progress and Success

- Iterative software process milestones
- Software release milestones
- Trailing metrics of success
- User satisfaction from surveys
- Descriptive statistics on use
- Software development metrics