# Web Services Working Group

# Product-Oriented Working Group Support Request and Statement of Work

## Summary Statement

The Web Services Working Group (WSWG) was established at the 2009 IMC meeting in response to a recognized need for guidelines in implementing a web service-oriented architecture in the LTER Network Information System. The WSWG has also been tasked by LNO and IMExec with exploring possible redevelopment paths for network resources, including the personnel, all-site bibliography, and site description databases.

In order to meet both of these needs, the WSWG proposes that it be funded as a product-oriented working group to design and develop an updated, web service-enabled version of the LNO personnel database. Design work will be carried out collectively by the WSWG; development work will be carried out collectively by a development subgroup comprised of volunteer developers from the WSWG. Using feedback on the personnel database from the WSWG, development subgroup, IMC, and LNO, the WSWG will produce a set of LTER Web Services Recommendations suitable for submission to IMC for endorsement. Additionally, the WSWG will plan for future redesign of other network resources as appropriate.

## Scope of Work

A redesigned personnel database will be available for all sites and the LNO to use via a web service interface. This interface may be used for the two distinct approaches currently in use by the LTER sites: 1) used directly by local site applications, or 2) used as a target for sites doing both read and write synchronization with the network. Other elements of the NIS, including PASTA, the all-site bibliography, and the site description database, will also interact with the personnel database web services to provide context to other data and metadata. A web-based GUI interface will be developed for site and LNO users to browse, search, and update the contents of the personnel database. Other site- or network-level clients may be developed during the duration of this product-oriented working group as developer time permits.

The LTER Web Services Recommendations, which will be developed by the WSWG in conjunction with and informed by the design and development of the personnel database, will provide guidelines for web service developers and consumers in the LTER network. By producing these recommendations before the 2011 IMC, we hope for these guidelines to be in place for use in integrating PASTA modules. The guidelines will also inform, and be informed by, site-developed modules that will integrate with the NIS.

## Products

1) Redesign of the LTER personnel database. The WSWG will redesign the LTER personnel database. This redesign will address, at minimum, the storage schema, the web service syntax, and the LNO-hosted GUI interface. Further design work may include additional client applications such as a Drupal module, website ‘widgets’, and/or a bridge to the existing ProjectDB. Design will be based on requirements gathered from the IMC prior to meeting.

2) Implementation of the LTER personnel database. Following the redesign of the personnel database, the specification developed by the WSWG will be given to the development subgroup. The development subgroup will develop the storage backend, service interface, and user interface as designed by the WSWG. Additional client applications proposed during the design phase will be addressed as developer time permits.

3) LTER Web Services Recommendations document. The WSWG will produce a set of recommendations for developers and consumers of web services. These recommendations will cover a common syntax for interacting with web service, methods for documenting new and existing web services, and guidelines for establishing use cases before developing or using web services. This document will be revised during and after the design and development of the personnel database, and will provide guidelines for future network database redevelopment by the WSWG.

## Tasks

1) **Design meeting, early 2011.** This will be a two-day meeting with associated travel days at LNO with seven participants, including at least three from the development subgroup. The design meeting will focus on redesign of the personnel database into a web service and associated clients. The primary goal will be to produce a set of specifications that can be handed over to the development subgroup for immediate work (see Product 1, above; Task 2, below). One VTC will be held during the design meeting

2) **Development meeting, early 2011.** This will be a three-day meeting with associated travel days at LNO with three participants from the WSWG development subgroup immediately following the design meeting. The primary goals will be to develop a working prototype of the personnel storage backend and service interface and at least one client that interacts with the service. One or more VTCs will be held during the meeting to work with developers at other sites. On the last day of the meeting, remaining development work will be scheduled and assigned to members of the development subgroup.

3) **Distributed development, early to middle 2011.** The development subgroup will continue to work in a distributed manner to complete development of the personnel storage, service interface, and user interfaces. During this task, collaboration will take place using VTCs and a shared subversion repository. The primary goal of this task is the development of the personnel database to meet the specifications created in Task 1. The development timeframe is dependent on funded IM Release Time requested from LNO. Plans are for this task to be completed before the meeting in Task 4, below.

4) **Follow-up meeting, middle 2011.** This will be a two-day meeting at LNO with three participants, including at least one member of the development subgroup. Primary goals will include producing a revised draft of the Recommendations document and planning for the redesign of additional network database. During this meeting the WSWG will produce a report for the annual IMC meeting including a summary of the year’s work, strengths and weaknesses of the approach taken, and suggestions for web service development in the 2011-2012 period.

## Participants

Participants for all tasks will be volunteers from the web services working group. Membership in the WSWG is open to all LTER personnel. LNO developers, information managers, and the CIO may also participate in the meetings at LNO as their time permits.

## Budget

The projected budget for travel, lodging, and logistics for the meetings in Tasks 1, 2, and 4 is $8,740 (see Budget Justification, below).

## Budget Justification

### Cost Assumptions

**Airfare:** $425 per participant. Actual airfare will vary from approximately $300 to $550 based on participant location. $425 represents a likely average cost.

**Ground Transportation:** $2 per participant per day, including arrival and departure days. Based on the cost of a day pass for Albuquerque public transit, which connects the airport, hotel, and UNM campus.

**Lodging:** $100 per participant per night, $50 per participant per night with room sharing. Based on the cost of lodging at the Hyatt Place Albuquerque Airport.

**Per Diem:** $56 per participant per day. Based on set Albuquerque per diem, determined by LNO.

### Meeting Costs

All meetings assume flights arrive the day prior to the meeting and depart the morning after the meeting concludes. All costs are rounded up to the nearest $10 amount.

**Design meeting (3 nights, 2 days):** $850 per participant, $700 per participant with room sharing.

**Development meeting (6 nights, 5 days):** $1,330 per participant, $1,030 per participant with room sharing. Includes two days at the design meeting.

**Follow-up Meeting (3 nights, 2 day):** $850 per participant, $700 per participant with room sharing.

### Total Costs

**Design Meeting:** Four participants (if two participants share one room, and two do not): $3,100.

**Development Meeting:** Three participants (if two participants share one room): $3,390.

**Follow-up Meeting:** Three participants (if two participants share one room): $2,250.

**Total Cost:** $8,740