

**National Science Foundation
Washington, D.C. 20550**

Directorate for Biological, Behavioral, and Social Sciences

***Announcement of
Fourth Competition for
Long-Term Ecological Research (LTER)***

In 1980, 1981 and 1987 the National Science Foundation held open, peer reviewed competitions for awards to perform research on ecological questions and problems requiring long time periods for their resolution. These competitions have resulted in 15 ongoing LTER projects. A developmental history of the beginning phases of LTER is available in Callahan, J.T., 1984; *BioScience* 34:363-367. The research community and the Division of Biotic Systems and Resources (BSR) have continued to develop the LTER emphasis.

In 1989 NSF plans to provide up to \$2.0 million for two to five new LTER projects contingent upon the availability of funds.

Targeted Ecosystems

For this new competition the Foundation is especially interested in receiving proposals for research on (1) tropical forest ecosystems and (2) land margin ecosystems representing the interface of continental land masses and coastal oceans.

The goal of LTER is to augment the progress of ecological science by several means that might include but are not limited to the:

- (1) long-term analysis of site-specific ecological phenomena,
- (2) comparison of observations across diverse ecosystems and in terms of general systems theory, and
- (3) provision of large, secure, ecologically diverse sites with well developed support capabilities.

Experience indicates that successful proposals will be those that are organized around major ecological questions that serve not only to focus the research at the particular site but also to integrate that research and its participating scientists into the extant network of LTER projects. It has proved useful for LTER projects to develop their research plans to include the following five core research topics in an equitable fashion:

- (1) pattern and control of primary production,

- (2) spatial and temporal distribution of populations selected to represent trophic structure,
- (3) pattern and control of organic matter accumulation in surface layers and sediments,
- (4) patterns of inorganic inputs and movements of nutrients through soils, groundwater, and surface waters, and
- (5) patterns and frequency of disturbance to the research site.

In developing proposals and planning the research, potential LTER project groups are expected to demonstrate that they can provide for the scientific and organizational coordination of new projects with the ongoing research at the 15 operating sites. Research questions, analytical methods, and data management protocols are all important areas for planned coordination. Formal aspects of coordination will be mediated through periodic meetings of the LTER Coordinating Committee, a group comprising the principal investigator or the corresponding senior scientist of each project. A listing of senior scientist contacts for the ongoing LTER projects is available on request.

An LTER proposal may be submitted for a site with ongoing research or for a site which would require an entirely new effort. It should be pointed out, however, that in previous competitions the existence of major, ecologically relevant data bases for a site was viewed as a positive factor by peer reviewers. The principal investigators will be expected to make long-term time commitments to the proposed projects, and proposals should document the research group's planning for (1) continuity of project leadership, (2) institutional cost sharing, (3) adequacy of physical facilities, (4) site integrity and security, (5) resolution of conflicts in use of the site, (6) long-term agreements with site owners, (7) baseline site descriptions, (8) bibliographies and libraries, (9) reference collections, (10) data management, (11) project synthesis and publication, (12) site use promotion, and (13) external review of project operation. Evidence of substantial institutional cost sharing will be regarded positively in the review of proposals.

Proposals should request support for a five-year period although projects should be planned for a longer duration. Detailed budgets (both annual and summary) should be presented for the five-year requested support period with annual rates of requested NSF funding that do not exceed \$400,000 per year. Resultant awards will be made as continuing grants that will require the annual submission of progress reports and updated budgets. Continuation of LTER projects beyond the initial five-year period of support will depend on peer evaluation of accomplishments, availability of funds, and Foundation priorities at the time.

Proposals should be clearly identified by the acronym LTER on the cover page. Twelve completed copies should be marked "Do not open in mail room" and sent directly to the addressee below. Proposals must be received by February 1, 1988. Final award decisions will be made by September 1, 1988, and new awards will commence about January 1, 1989.

Contact:

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Proposal Preparation:

Requirements for content and format cited in *Grants for Research and Education in Science and Engineering* (NSF-83-57 rev. 1-87)* apply generally. Proposals must be limited strictly to 60 double-spaced pages for the body of the research narrative (*i.e.* introduction, literature review, hypothesis exposition, methods, project execution and management plans). Appendices of supporting materials (*e.g.* bibliographies, budgets, scientists' resumes, catalogs of extant site information and ongoing research efforts, etc.) must be limited to 40 single-spaced pages. Proposals should be printed on one side of the page only, bound only in the upper left corner, and numbered at the bottom of each page.

* Available on request from Publications, NSF, 1800 G Street, N.W., Washington, D.C. 20550

The Foundation provides awards for research in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for such findings or their interpretation.

The Foundation welcomes proposals on behalf of all qualified scientists and engineers, and strongly encourages women and minorities and the disabled to compete fully in any of the research and research-related Programs described in this document.

In accordance with Federal statutes and regulations and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation.

The National Science Foundation has TDD (Telephonic Device for the Deaf) capability which enables individuals with hearing impairment to communicate with the Division of Personnel and Management for information relating to NSF programs, employment, or general information. This number is (202) 357-7492.

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