

Office of Energy Research

Notice 98-10

Biological Research Program

Use of Model Organisms to Understand the Human Genome

Department of Energy
Office of Energy Research

Energy Research Financial Assistance Program Notice 98-10; Biological Research Program, Use of Model Organisms to Understand the Human Genome

AGENCY: U.S. Department of Energy (DOE)

ACTION: Notice inviting grant applications

SUMMARY: The Office of Biological and Environmental Research (OBER) of the Office of Energy Research (ER), U.S. Department of Energy (DOE), hereby announces its interest in receiving peer-reviewable applications for research in support of the Biological Research Program. This Program is a coordinated multidisciplinary research effort to develop creative, innovative approaches, resources, and technologies that lead to a molecular understanding of the human genome. This solicitation is for research that capitalizes on our understanding and the manipulability of the genomes of model organisms, including yeast, nematode, fruitfly, Zebra fish, and mouse, to speed understanding of human genome organization, regulation, and function.

DATES: Potential applicants are encouraged to submit a brief preapplication. All preapplications, referencing Program Notice 98-10, should be received by DOE by 4:30 P.M. E.S.T., March 26, 1998. A response to the preapplications discussing the potential program relevance of a formal application generally will be communicated within 7 days of receipt.

The deadline for receipt of formal applications is 4:30 P.M., E.D.T., May 7, 1998, in order to be accepted for merit review and to permit timely consideration for award in FY 1999.

ADDRESS: Preapplications, referencing Program Notice 98-10, should be sent by E-mail to joanne.corcoran@oer.doe.gov, however, preapplications will also be accepted if mailed to the following address: Ms. Joanne Corcoran, Office of Biological and Environmental Research, ER-72, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290.

Formal applications, referencing Program Notice 98-10, should be sent to: U.S. Department of Energy, Office of Energy Research, Grants and Contracts Division, ER-64, 19901 Germantown Road, Germantown, MD 20874-1290, ATTN: Program Notice 98-10, Ms. Debbie Greenawalt. This address must be used when submitting applications by U.S. Postal Service Express, any commercial mail delivery service, or when hand carried by the applicant.

FOR FURTHER INFORMATION CONTACT: Dr. Marvin Stodolsky, telephone: (301) 903-4475 or Dr. David G. Thomassen, telephone: (301) 903-9817, Office of Biological and Environmental Research, ER-72, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290.

SUPPLEMENTARY INFORMATION: In recent years, an astonishing conservation of gene structure and function across species has been revealed. Future biological understanding of the human will depend not only on understanding the structure and function of the encoded proteins and RNAs, but also on understanding the nature of the regulatory networks that control expression of batteries of genes in space and time. For example, we can more economically learn how genes and systems work in the genetically manipulable organisms such as bacteria, yeast, fruitfly, nematode, or Zebra fish. In addition, the mouse provides the opportunity to model and analyze many complex human conditions less suitably studied in invertebrates of lower vertebrates.

This solicitation is for research that capitalizes on our understanding and the manipulability of the genomes of model organisms, including yeast, nematode, fruitfly, Zebra fish, and mouse, to speed understanding of human genome organization, regulation, and function. The solicitation is for research at a genomic or near-genomic scale, i.e., not, for example, for studies of individual enzymes, that facilitates understanding of human genome organization, regulation, and function. It is not for basic research on model organisms that only has the promise of a long-term payoff for understanding the human genome. Research is encouraged in a number of areas including, but not limited to:

- Interspecies comparisons of the organization of functionally related genes and their regulatory elements including automated approaches for interspecies genic comparisons;
- Production and characterization of informative mutations or gene transfers in model systems to elucidate gene function in the human;
- Development and application of approaches to characterize developmental and regulatory pathways (these could include genetic approaches, e.g., transgenics, knockouts, overexpression, antisense, etc.);

- Development and use of experimental systems to characterize or analyze human gene function that match the speed of new gene discovery on a genomic scale.

Program Funding

It is anticipated that up to \$1.5 million will be available in FY 1999, contingent upon the availability of funds. Multiple year funding of grant awards is expected, and is also contingent upon the availability of funds. It is expected that most awards will be from one to three years and will range from \$200,000 to \$400,000 per year (total costs).

Collaboration

Applicants are encouraged to collaborate with researchers in other institutions, such as universities, industry, non-profit organizations, federal laboratories and FFRDCs, including the DOE National Laboratories, where appropriate, and to incorporate cost sharing and/or consortia wherever feasible.

Collaborative research applications may be submitted in several ways:

(1) When multiple private sector or academic organizations intend to propose collaborative or joint research projects, the lead organization may submit a single application which includes another organization as a lower-tier participant (subaward) who will be responsible for a smaller portion of the overall project. If approved for funding, DOE may provide the total project funds to the lead organization who will provide funding to the other participant via a subcontract arrangement. The application should clearly describe the role to be played by each organization, specify the managerial arrangements and explain the advantages of the multi-organizational effort.

(2) Alternatively, multiple private sector or academic organizations who intend to propose collaborative or joint research projects may each prepare a portion of the application, then combine each portion into a single, integrated scientific application. A separate Face Page and Budget Pages must be included for each organization participating in the collaborative project. The joint application must be submitted to DOE as one package. If approved for funding, DOE will award a separate grant to each collaborating organization.

(3) Private sector or academic organizations who wish to form a collaborative project with a DOE FFRDC may not include the DOE FFRDC in their application as a lower-tier participant (subaward). Rather, each collaborator may prepare a portion of the

proposal, then combine each portion into a single, integrated scientific proposal. The private sector or academic organization must include a Face Page and Budget Pages for its portion of the project. The FFRDC must include separate Budget Pages for its portion of the project. The joint proposal must be submitted to DOE as one package. If approved for funding, DOE will award a grant to the private sector or academic organization. The FFRDC will be funded, through existing DOE contracts, from funds specifically designated for new FFRDC projects. DOE FFRDCs will not compete for funding already designated for private sector or academic organizations. Other Federal laboratories who wish to form collaborative projects may also follow guidelines outlined in this section.

Preapplications

A brief preapplication may be submitted. The preapplication should identify on the cover sheet the institution, Principal Investigator name, address, telephone, fax and E-mail address, title of the project, and the field of scientific research. The preapplication should consist of a two to three page narrative describing the research project objectives and methods of accomplishment. These will be reviewed relative to the scope and research needs of the DOE Biological Research Program.

Preapplications are strongly encouraged but not required prior to submission of a full application. Please note that notification of a successful preapplication is not an indication that an award will be made in response to the formal application.

Applications will be subjected to scientific merit review (peer review) and will be evaluated against the following evaluation criteria listed in descending order of importance as codified at 10 CFR 605.10(d):

1. Scientific and/or Technical Merit of the Project
2. Appropriateness of the Proposed Method or Approach
3. Competency of Applicant's Personnel and Adequacy of Proposed Resources
4. Reasonableness and Appropriateness of the Proposed Budget.

The evaluation will include program policy factors such as the relevance of the proposed research to the terms of the announcement and an agency's programmatic needs. Note, external peer reviewers are selected with regard to both their scientific expertise and the absence of conflict-of-interest issues. Non-federal reviewers may be used, and submission of an application constitutes agreement that this is acceptable to the investigator(s) and the submitting institution.

Information about the development and submission of applications, eligibility, limitations, evaluation, selection process, and other policies and procedures may be found in 10 CFR Part 605, and in the Application Guide for the Office of Energy

Research Financial Assistance Program. Electronic access to the Guide and required forms is made available via the World Wide Web at:

<http://www.er.doe.gov/production/grants/grants.html>. The Project Description must be 25 pages or less, exclusive of attachments. The application must contain an abstract or project summary, letters of intent from collaborators, and short curriculum vitae consistent with NIH guidelines.

Energy Research, as part of its grant regulations, requires at 10 CFR 605.11(b) that a recipient receiving a grant to perform research involving recombinant DNA molecules and/or organisms and viruses containing recombinant DNA molecules shall comply with the National Institutes of Health "Guidelines for Research Involving Recombinant DNA Molecules", which is available via the world wide web at: **<http://www.niehs.nih.gov/odhsb/biosafe/nih/nih97-1.html>**, (59 FR 34496, July 5, 1994), or such later revision of those guidelines as may be published in the Federal Register.

The Catalog of Federal Domestic Assistance Number for this program is 81.049, and the solicitation control number is ERFAP 10 CFR Part 605.

John Rodney Clark
Associate Director
for Resource Management
Office of Energy Research

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