

Announcement for Proposals, 2003-2

Joint Fire Science Program

U.S. Department of the Interior

**Bureau of Indian Affairs
Bureau of Land Management
National Park Service
U.S. Fish and Wildlife Service
U.S. Geological Survey**

U.S. Department of Agriculture

Forest Service

Opens October 15, 2002

Closes November 15 (task 3 only) and January 6, 2003

* Note: Task Statement number 3 of this Announcement for Proposals has two closing dates. Proposals received by November 15 will receive expedited review; the Governing Board expects to complete the peer review and selection process by the end of January 2003. Proposals received after November 15 and by January 6 will be evaluated through the normal review process, with funding decisions expected in April 2003.

This Announcement for Proposals includes three Task Statements on “rapid response” projects

Announcement for Proposals

by the
Joint Fire Science Program

Note: The Joint Fire Science Program previously posted Requests for Proposals (RFPs). These are now called Announcements for Proposals (AFPs).

A. Program Description

The Joint Fire Science Program (JFSP) is a partnership of six federal wildland management and research agencies with a need to address problems associated with managing accumulating wildland fuels (combustible material, generally living and dead plant materials), fire regimes, and fire-impacted ecosystems on lands administered by the partner agencies. The partner agencies include the USDA Forest Service and five bureaus in the Department of the Interior (Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and the U.S. Geological Survey).

Wildland fuels have been accumulating during at least the past half-century due to wildland fire management policies, wildland management practices, and other factors. As demonstrated in the wildland fires of 2002, the additional fuels contribute to intense fire behavior and increase the resistance of fires to control. Consequently, property and natural resources have been destroyed, costs of fire management have escalated, fire dependent ecosystems have deteriorated, and the risks to human life remain high.

The Congress, agency administrators, JFSP partners, and others have recognized that the accumulation of wildland fuels must be reduced in order to reduce the human threat from fire and maintain natural resource values. Congress directed the Department of the Interior and the USDA Forest Service to develop a Joint Fire Science Plan to provide science-based support to land management agencies as they address this need. The JFSP was established with the 1998 Appropriation for Interior and Related Agencies to help ensure that cooperating Federal land management agencies expedite scientifically sound, efficient, systematic, and effective solutions and monitoring programs that cross agency jurisdictions and fuel types.

The 1998 Joint Fire Science Plan addressed four issues (Principal Purposes) critical to the success of the fuels management and fire use programs. These included wildland fuels inventory and mapping, evaluation of fuels treatments, scheduling of fuels treatments, and monitoring and evaluation. The Congress included additional direction in the 2001 Appropriation for Interior and Related Agencies. In addition to the four original Principal Purposes, the JFSP was directed to focus attention on such issues as protocols for evaluating post fire stabilization and rehabilitation projects, aircraft based remote sensing, and regional/local issues.

For further background on the goals of the JFSP, those considering submitting proposals and other interested parties are encouraged to review the Joint Fire Science Plan which is available via the Internet at: http://www.nifc.gov/joint_fire_sci/jointfiresci.html. In addition, the JFSP issued AFPs in June 1998, February 1999, February 2000, and February of 2001 and subsequently selected and funded over 160 projects. Previous AFPs and lists of the funded projects can also be found at the web site.

This AFP contains three Task Statements for which proposals are sought. However, because the

focus of the JFSP is on wildland fire and fuels issues on Federal wildlands, evidence of direct involvement by Federal scientists or land managers in the development of proposals must be included in all proposals. **Proposals that do not have direct federal agency involvement will not be considered for funding.** In many instances, success of rapid response projects will depend on land manager involvement; in such cases it is important to document interest and involvement of land managers. In addition, a Federal manager or cooperator will also be the direct recipient of funding; therefore, the name, mail address, and phone number of the Federal administrative or contracting officer must be included.

Proposals and all associated materials, including signatures, submitted in response to this AFP must be received by the close of business on the closing date (either November 15, 2002 or January 6, 2003) to be considered. Materials received after the closing date, including proposal revisions, will not be considered, except that proposal materials responding to Task Statement number 3 that are received after November 15 will be considered with the January 6, 2003 proposals. Questions and proposals should be directed to:

Dr. Bob Clark
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Joint Fire Science Program
National Interagency Fire Center
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Electronic submissions are acceptable provided they are followed by a hard copy of the title/signature page with original signature(s). If hard copy is submitted, please include a digital version on a disk or CD. Also, please include the name, mail address, and phone number of the Federal administrative contact that would be used for administrative matters if the proposal is selected and funded. Letters of support and similar materials that are sent separately from the proposal should include the title of the proposal and other relevant information so that the letter(s) can be matched with the proper proposal. Revisions and other materials will not be accepted after the closing date. Please email electronic proposals, in Microsoft Word or a compatible processor, to Bob_Clark@nifc.blm.gov.

Finally, the Governing Board hosts annual workshops for Principal Investigators (PIs) of active projects. Proposals submitted in response to this AFP should identify travel and related funding for one PI to participate in the annual workshop.

B. Area of Interest for Proposals

This AFP contains three Task Statements. In instances where projects will require visiting or working on uncontrolled wildland fire incidents, proposers responding to this AFP should note that all wildland management agencies have mandatory training and safety requirements for such work. Investigators will be required to meet the following standards when conducting research on uncontrolled incidents:

- 1) Field technicians collecting data on or directly adjacent to an uncontrolled incident will be

required to achieve a fitness score of “Arduous” on the Work Capacity Test (Pack Test), as demonstrated by walking 3 miles in 45 minutes or less carrying a 45 pound backpack. The test is generally available from local fire management offices. Additional information is available on the Internet at http://www.fs.fed.us/fire/fire_new/safety/wct/wct_index.html. Each technician will carry a current “red card,” signed by an agency Fire Management Officer or other fire supervisor, indicating that he or she is qualified as a Firefighter (FFT2) minimum or as a Technical Specialist in the area of expertise. An individual qualified as single resource boss or higher must accompany all field technicians. The arduous fitness rating must be clearly indicated on the card. The arduous fitness rating is required for Field Observer and Fire Effects Monitor (*Wildland and Prescribed Fire Qualification System Guide 310-1*). These are the two National Wildfire Coordinating Group (NWCG) recognized positions that most closely resemble the type of work that a field technician would be doing. “Technical Specialist” is a generic term for which there are no training and qualification standards in 310-1. Information about qualifications and training courses is generally available from local fire management offices.

- 2) Field supervisors visiting the incident on an occasional basis and not directly involved in data collection will be required to achieve a fitness score of “moderate” on the Work Capacity Test, as demonstrated by walking 2 miles in 30 minutes carrying a 25-pound backpack. Each supervisor will carry a current red card, signed by an agency Fire Management Officer or other fire supervisor, indicating that he or she is qualified as a Technical Specialist in the area of expertise. The moderate fitness rating must be clearly indicated on the card. The Incident Commander or Fire Use Manager must also agree to accept the moderate rating for occasional visits to the uncontrolled incident.
- 3) Personnel who will confine their work to the Incident Base Camp or other areas far removed from the perimeter of the uncontrolled incident are not required to attain a fitness standard. However, a red card indicating Technical Specialist in the area of expertise is still recommended.
- 4) All personnel who will be visiting the uncontrolled incident, even on an occasional basis, must have taken basic wildland firefighter training consisting of S-130 – Firefighter, and S-190 - Introduction to Wildland Fire Behavior. In addition, annual wildland firefighter refresher training is required. As noted above, these courses and the Work Capacity Test are generally available from local fire management offices.
- 5) Field investigators will be required to wear approved wildland fire incident personal protective equipment (PPE) including aramid shirt and pants, helmet with chinstrap, leather gloves, fire shelter, eye and hearing protection, personal first aid kit, and lace type leather boots with non-slip (Vibram type) soles and minimum 8" top. PPE can often be checked out from cooperating wildland fire offices or purchased from a variety of sources. PPE should be obtained prior to planned work.
- 6) Principal Investigators (PI) must work very closely with Incident Management Teams. This should include meeting with Incident Commanders, Fire Use Managers, and Geographic Area Coordinating Groups prior to the fire season to discuss protocols, exchange information, and share areas of concern. Investigator teams are encouraged to include current or former incident management overhead such as Strike Team Leaders, Division Supervisors, Safety Officers, and Fire Behavior Analysts in their configuration. The affected

Incident Commander or Fire Use Manager must approve all fireline visits.

- 7) The field team leader shall attend daily briefings, be knowledgeable of weather and fire behavior predictions and daily strategy and tactics. All air operations will be conducted only with specific approval of the Incident Commanders or Fire Use Managers. Field team leaders shall establish contact and brief incident personnel assigned such as Division Group Supervisors to the area of operations. Field team leaders are responsible for the safety of their teams and shall ensure that they have communications with incident personnel at all times and be knowledgeable of emergency procedures in the incident action plan. All field teams shall abide by the 10 Standard Firefighting Orders, the 18 Situations That Shout Watch Out, the Thirty Mile Hazard Abatement Implementation Plan (http://www.fs.fed.us/fire/fire_new/safety/investigations/30mile/index.html and http://www.fs.fed.us/fire/fire_new/safety/MTDC_Lessons/index.htm) and any other requirements stipulated by the Incident Commander or Fire Use Manager when in close proximity to an uncontrolled wildland fire.
- 8) Acceptance of any funding from JFSP under this AFP implies the PI will ensure that field investigations on active fire incidents are conducted according to these terms.

Task 1: *Proposals are sought to obtain, document, and evaluate critical, time-sensitive information or data during or following wildland fire incidents or post-fire land treatments. Proposals should focus on fire behavior, immediate post-fire effects including fuels reduction, post-fire stabilization or rehabilitation, the effects of previous land management activities on fire behavior and severity, and similar issues. Proposals should also address wildland/urban interface areas and issues as appropriate. Organized response teams are required.*

Certain types of information or data that are essential to our understanding of wildland fire incidents and/or post fire stabilization and rehabilitation activities can only be obtained during or immediately after a fire. For example, estimates of flame length or fire spread are more precise and reliable if measured *in situ* rather than inferred from general documentation, poorly validated models, or indirect methods such as stem char heights. Similarly, certain ecological impacts such as water-borne erosion, sedimentation, and changes in stream chemistry occur within days to weeks after a fire. Also, following containment or control of most wildland fire incidents, stabilization measures are taken immediately and many incidents are followed by detailed rehabilitation plans and rehabilitation actions. Although routine monitoring may occur, rigorous scientific investigation occurs only infrequently. Installation of well-designed comparisons of post fire treatments requires close coordination with Burned Area Emergency Rehabilitation (BAER) Teams and local managers, often before a fire is controlled. All of these situations have in common the need for a rapid, well organized, and preplanned response from the science community. In the past, this type of work has often been hampered by lack of funding and by lack of adequate pre-incident planning.

To meet this need, the Governing Board envisions the development of small rapid deployment teams of research scientists and technical specialists that can mobilize quickly to investigate and document various aspects of fire behavior or fire effects on uncontrolled wildland fire incidents, teams that can deploy quickly to investigate and document first order fire effects, and/or teams that can evaluate site stabilization or rehabilitation treatments or issues associated with stabilization or rehabilitation (such as edaphic or hydrologic components). Proposals must clearly describe data needs and research objectives and experimental design, and must identify the types of fire incidents and site conditions required. Proposals must identify clear criteria for selection of fire incidents and study

sites that reflect the needs of the particular study. The Board believes that deployment and actions by these teams would be greatly enhanced if at least one team member were qualified at the Strike Team/Task Force Leader level or higher. With respect to post-fire treatments, the research teams would be expected to operate in conjunction with BAER Teams or other efforts to stabilize or rehabilitate burned areas. The Governing Board may request that successful proposers visit specific incidents that the Board believes have value to the goals and objectives of the projects funded under this Task Statement.

Accepted and funded proposals would, following selection and award, remain in effect for two years from date of approval with an additional year to complete analysis and publication preparation. Preliminary findings must be made available within 90 days after each incident. Partial funding will be made available upon approval of the project to enable planning activities and purchasing necessary equipment and supplies in preparation for initiation of field studies. PIs of approved projects will need only to obtain verbal concurrence from the JFSP Office to initiate fieldwork following onset of the incident(s). The Governing Board anticipates that these projects can be accomplished cost effectively within three years or less. Approval of proposals will not constitute agreement to fund additional work on the same project. However, projects that clearly fit into the Joint Fire Science Plan or Implementation Plan may be asked to develop longer-range proposals after-the-fact; such projects may be funded competitively or non-competitively, in whole or in part, at the discretion of the Governing Board.

***Task 2:** Proposals are sought to obtain, document, and evaluate critical, time-sensitive social information or data during or immediately following wildland fire incidents or post-fire land treatments. Proposals should focus on reactions or attitudes of people to fire behavior, immediate post-fire effects including fuels reduction, post-fire stabilization or rehabilitation, the effects of previous land management activities on fire behavior and severity, and similar issues. Proposals should address wildland/urban interface areas and issues as appropriate. In general, proposals should not develop new techniques but should focus on previously developed measurement tools to collect information on social issues related to this topic.*

Certain types of information or data that are essential to our understanding of public reactions to wildland fire incidents and/or post-fire stabilization and rehabilitation activities can only be obtained during or immediately after a fire. A rapid, well-organized and preplanned response from the science community can allow measurement of immediate social effects. In the past, this type of work has often been hampered by lack of funding and lack of adequate pre-incident planning.

Proposals must clearly describe data needs, research objectives, and experimental design, and must identify the types of fire incidents and site conditions required. Proposals must identify clear criteria for selection of fire incidents and study sites that reflect the needs of the particular study. The Governing Board might request that successful proposers visit specific incidents that the Board believes have value to the goals and objectives of the projects funded under this Task Statement.

Accepted and funded proposals would, following selection and award, remain in effect for two years from date of approval with an additional year to complete analysis and publication preparation. Preliminary findings must be made available within 90 days after each incident. Partial funding will be made available upon approval of the project to enable planning activities and purchasing necessary equipment and supplies in preparation for initiation of field studies. PIs of approved projects will need only to obtain verbal concurrence from the JFSP Office to initiate fieldwork following onset of the incident(s). The Governing Board anticipates that these projects can be

accomplished cost effectively within three years or less. It is expected that scientists' salaries would be contributed to the project unless approved in advance by the Governing Board. Approval of proposals will not constitute agreement to fund additional work on the same project. However, projects that clearly fit into the Joint Fire Science Plan or Implementation Plan may be asked to develop longer-range proposals after-the-fact; such projects may be funded competitively or non-competitively, in whole or in part, at the discretion of the Governing Board.

Task 3: *Proposals are sought to collect post-fire data and analyze and describe relationships between pre-fire condition and fire behavior or fire effects on sites burned in the 2002 wildfires. Proposals should take advantage of sites where pre-fire data are available on fuel treatments, fuel characteristics, or stand structure.*

The fires of 2002 burned over a number of experimental sites and other areas where extensive pre-fire data are available on multiple fuel treatments or on pre-fire stand structure or fuel characteristics. Proposals for sites where reliable fire behavior observations exist are encouraged. Such sites can provide unique opportunities for post-fire studies to evaluate the effects of pre-fire condition on fire behavior, fire severity, and ecosystem impacts.

Proposals must:

- Document the extent and quality of pre-fire data;
- Describe pre-fire experimental design or sampling design and sampled variables;
- Describe experimental treatments or variations in vegetation composition and structure;
- Describe expected response variables;
- Include justification of the need for rapid response and of the unique opportunity presented by the fire and the preexisting data.

Projects will be funded for a maximum of two years from the award date, including one year of field data collection, data analysis, and completion of reports to JFSP. The technology transfer plan must clearly describe methods for rapid dissemination of results to the science and management communities. Because it may often be necessary to begin collecting field data within the first several months after the fire, the Board will follow an expedited process for reviewing and selecting proposals for funding.

This task has two closing dates. Proposals received by November 15 will receive expedited review; the Governing Board expects to complete the peer review and selection process by the end of January 2003. Proposals received after November 15 and by January 6 will be evaluated through the normal review process, with funding decisions expected in April 2003.

C. Format for Proposals

Overview of the Proposal Format

The full proposal should specify rationale, objectives, methodologies, and deliverables in sufficient detail to allow an informed peer to assess the proposal's validity in addressing the Task Statement in the Announcement for Proposal. The proposal should also identify criteria by which success of the project will be determined. The proposal text and accompanying tables and figures, exclusive of curricula vitae or other appended information, should be limited to 12 pages. Please use at least 11 point font. Complete annual and total budgets and a firm timeline for deliverables must be included, as well as a mechanism for "technology transfer" to appropriate end users. The proposal also provides a record of management responsibility and accountability for various aspects of the project.

Title Page

The following format should be used for the title page (not to exceed 1 page):

Project Title:

Principal Investigator(s):

Affiliation:

Address:

Telephone/Facsimile Number(s):

E-mail:

Duration of Project:

Annual Funding Requested from the Joint Fire Science Program: \$ _____

Total Funding Requested from the Joint Fire Science Program: \$ _____

Total Value of In-Kind or Financial Contributions: \$ _____

Abstract: Summarize the proposed project in a brief abstract not to exceed ½ page. The abstract should include the justification for the proposed project in relation to one or more task statements in the Request for Proposals, objectives, appropriate methodology, and applicability of results.

E-mail or facsimile proposals are acceptable provided that the e-mail or facsimile transmission is followed by a hard copy of the title page with original signature(s). If hard copy is provided only one copy is necessary. Task 3 proposals received by November 15 will receive expedited processing. Task 3 proposals received after November 15, and all proposals addressing tasks 1 and 2, must be received by January 6 to be considered. All materials must be submitted by the closing date to be considered.

Introduction

An introductory section should include:

- 1) **Project Justification.** A summary of the issue(s), why the project needs to be done (relevance to task statements in the Request for Proposals), and benefits derived.
- 2) **Project Objectives.** A statement of the project objective(s) must be clearly stated and measurable. This should include a brief statement of the hypothesis to be tested (if applicable), what information or product(s) will be provided at the end of the project, and how the information or product can be used to resolve the issue(s) stated in the task statement(s).
- 3) **Background.** This section includes a concise review and synthesis of existing knowledge and previous research or other pertinent background information in the project task area.

The introductory section is intended to provide peer reviewers and the Governing Board with evidence that the proposed work compliments previous and on-going work and that the work is applicable to task statements in the Request for Proposals. Although the literature may be extensive, the synthesis should generally include reference to no more than about 15-20 of the most important and/or most relevant sources.

Materials and Methods

This section should describe procedures proposed for conducting the project in sufficient detail that a knowledgeable reviewer could understand the process and that a peer could replicate the project. A brief description of the study sites (as applicable) should be included.

Project Duration

Proposals for tasks 1 and 2 will generally not be funded for longer than three years although requests for extensions or additional work may be considered. Task 3 proposals will not be funded for longer than 2 years.

Budget

The proposed budget should be provided in sufficient detail to identify indirect costs and related surcharges, to separate labor costs from operational costs, and to identify salaries associated with funded scientists. Annual costs should be provided. Separate line items for "capitalized" equipment should be included. Outyear projections should be included for multi-year proposals. Proposed budgets should include travel expenses for one PI to participate in an annual 3-day PI workshop.

Deliverables

Provide specific details on the information or product(s) that would be provided by the proposed project, and realistic timetables for delivery dates. It is expected that all final products will include an electronic version suitable for distribution, posting, etc. Descriptions in English units, with metric equivalents in parenthesis, are required. Annual progress reports are required.

Technology Transfer

It is imperative that information or products reach field managers in a useful form. Therefore, each proposal should include a description of how the "technology" would be transferred to the field. Also, proposers are strongly encouraged to use Internet websites to post information regarding funded projects.

Qualifications of Investigators

Include Curriculum Vitae for PI(s) and at least 1 major Federal collaborator. These should reflect recent, relevant experience and publication(s) and should not exceed 2 pages.

Checklist for Proposal Submissions

Does the proposal:

- * include an introduction or background section that includes the specific objectives of the project and describes how the proposed work is relevant to one the task statement in the AFP?
- * include a list of cooperators and their proposed contribution, including the original signature of the PI and an authorized signature from a cooperating federal unit (See Proposal Format, Title Page)?
- * include a relevant Curriculum Vitae or other description of credentials of the PIs and co-investigator(s) that are signatories which demonstrates ability to complete the proposed work?
- * include a brief review and synthesis of related past and current literature and work?
- * Describe plans to integrate or collaborate with related ongoing or past efforts or products?
- * include an adequate description of the specific location of the proposed work?
- * include a description of the materials and methods of the proposed work including (as appropriate) experimental design and statistical analysis(es)?
- * include a detailed annual and total budget, including identification of salaries and indirect costs?
- * include a "Justification of Need for Salary Support," approved by appropriate authority, if needed? (See Salary Policy Section)
- * include a description and cost of equipment, which needs to be purchased to support the work?
- * include a list of deliverables with proposed dates of delivery?
- * include a technology transfer mechanism?
- * include signature as participant, letters, or other indications of support and commitment to collaborate from involved federal agency participants and other potential beneficiaries?

D. Review and Evaluation of Proposals

The following factors will be considered in reviews and evaluations of proposals to the Joint Fire Science Program:

1. How well does the proposal address one or more specific task statements identified in the AFP?
2. How well does the proposed work build on or interface with past or ongoing studies or products on related topics.
2. Does the proposal follow the requested format and include all the requested information?
3. Will the proposed work provide information or products that are useful across agency jurisdictions, fuel types, and geographic areas?
4. Does the proposal provide for adequate transfer of information or products, consider general availability and usefulness of proposed technology, and, as appropriate, provide for a feedback mechanism to the study team for product testing and improvement?
5. Does the proposal provide for adequate collaboration among agencies, between fire and land management personnel and research scientists or other collaborators, and between disciplines to ensure broad integration of existing knowledge and approaches as well as applicability of results and recommendations?
6. Are study approaches or design and statistical analysis(es) appropriate and adequate to meet stated objectives?
7. What are the qualifications of the team to do the proposed work? Are adequate institutional resources and support available?
8. Are proposed timeframes and budget reasonable and adequately justified, including budgets for proposed sub-agreements?
9. If formal cooperative arrangements are proposed (e.g., with universities or other non-federal organizations), is there documentation that these will be feasible and agreeable to the cooperators?
10. If the project will require compliance with the National Environmental Policy Act, Threatened/Endangered Species Act, or similar statutes, does the proposal contain evidence that these requirements are or will be possible within the proposed project timeframes?

E. Indirect Costs and Salary Policy

Indirect Costs

The JFSP recognizes the need of participating organizations to recover reasonable indirect costs. Indirect costs up to 15 percent (for the unit performing the work) may be included in proposals without detailed justifications, however, any indirect costs exceeding 15 percent must be justified. Similarly, indirect costs in excess of 10 percent on pass-through arrangements from federal units to cooperating federal or non-federal units must be justified. The Governing Board of the JFSP reserves the right to negotiate budget amounts and deliverables (including indirect costs over 15 percent) with proposing organizations.

Salary Policy

Normally, salaries of permanent full-time federal employees are expected to be provided by their agencies. This is also true of university faculty on 12-month tenure-track appointments. These employees are already fully funded by their institutions. However, the Governing Board recognizes that there can be mitigating circumstances arising from the need to fill in behind these employees when they are reassigned to JFSP funded activities, or due to policies of individual organizations. In such cases, the JFSP may agree to fund salaries of permanent employees. A brief justification must be included in the proposal, and the justification must be certified by an appropriate institutional authority, other than the Principal Investigator or other cooperator on the proposal, at the employee's organization or institution. The format provided below should be used for the certification. In addition, permanent employee salary costs must be explicitly identified in the project budget. The JFSP requires no special justification (other than a brief description of the need for the position in the budget justification section of the proposal) for funding temporary or term employees, post-doctoral employees, or graduate or undergraduate students.

**Certification to the Joint Fire Science Program
Justification of Need for Salary Support**

I hereby certify the attached Justification of Need to provide temporary salaries for full-time permanent employee (s) _____ (*list name of employee(s)*) is necessary and appropriate to enable him/her (them) to fully and directly participate in the proposed project.

I understand that salary funding for this/these employee(s) directly involved in the proposed project is temporary and will not be provided beyond the duration of the proposed project.

Signature _____

Date _____

Title _____