



UNITED STATES
DEPARTMENT OF THE INTERIOR



BUREAU OF LAND MANAGEMENT
Fire and Aviation Directorate
National Interagency Fire Center
Lead Agency for the Joint Fire Science Program

Joint Fire Science Program

The Joint Fire Science Program provides funding for scientific studies to address problems associated with managing wildland fuels, fires, and fire-impacted ecosystems.

Department of the Interior and Related Agencies Appropriation Act for FY 1998 and subsequent years
(P.L. 105-83; H.R. Report 105-163)

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Primary announcement (10 task statements)

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CLOSING DATE & TIME

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SECTION I. FUNDING OPPORTUNITY DESCRIPTION

- A. Legislative Authority:** Department of the Interior and Related Agencies Appropriation Act for FY 1998 and subsequent years (P.L. 105-83; H.R. Report 105-163).
- B. Project Background Information:** 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 wildland fuels, fires, and fire-impacted ecosystems. The partnering agencies include the U.S. Department of Agriculture, Forest Service and five bureaus in the U.S. Department of the Interior - Bureau of Indian Affairs, Bureau of Land Management, National Park Service, Fish and Wildlife Service, and the Geological Survey.
- For further background on the JFSP, those considering submitting proposals are encouraged to visit our website at www.firescience.gov.
- C. Program/Project Objective:** The U.S. Congress directed the Department of the Interior and the USDA Forest Service to develop a Joint Fire Science Program and Plan to prioritize and provide sound scientific studies to support land management agencies. Current priorities are identified as task statements in this Request for Applications (RFA).
- D. Statement of Joint Objectives/Project Management Plan:** The JFSP Governing Board and Program Manager will establish an oversight relationship with the Federal Cooperator and Principal Investigator(s) on each funded project. Projects will be required, at a minimum, to provide a written progress report annually. Program Office staff will visit selected project sites each year.
- E. Period of Project:** The JFSP Governing Board generally anticipates that individual projects can be accomplished within three years or less.

SECTION II. AWARD INFORMATION

- A. Expected Number of Awards:** Approximately 20-30
- B. Estimated Total Program Funding:** Approximately \$6,000,000.00 - \$8,000,000.00.
- C. Award Ceiling:** None
- D. Assistance Instrument:** To be determined at a later date by the cooperating federal agency sponsoring the proposed project.

SECTION III. ELIGIBILITY INFORMATION

- A. Eligible Applicants:** The JFSP encourages proposals from all interested parties. 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. Funding awards will be made by the Bureau of Land Management only to the federal agency sponsoring the selected project(s). Prior to award, the recipient federal agency shall register and/or maintain their own information with Dun & Bradstreet and the Central Contractor Registration/Business Partner Network System. To obtain a valid Dun & Bradstreet Number (D&B) or re-validate an inactive number contact Dun & Bradstreet at <http://www.dnb.com>/or by calling them at 800-333-0505. There is a Federal Agency registration link on the Central Contractor Registration System (CCR) at <http://www.ccr.gov>.

Upon receipt of a fully executed Inter/Intra-Agency Agreement or other appropriate funding document and award of funds, the sponsoring federal agency will be responsible for all sub-award transactions to cooperators or contractors related to the project, e.g. universities, other federal agencies, state and local agencies, research institutes, and non-profit organizations. The individual federal agencies sponsoring proposed projects will be not be required to re-announce opportunities for assistance agreements in Grants.gov that were submitted to them under this announcement. The federal agency sponsoring the project must abide by their agency's contract/grants and agreements authorities, regulations, policy and procedures in all sub-award transactions. The end date for all sub-awards must match the end date in the funding transfer document.

B. Cost Sharing or Matching: This program has no matching requirements.

SECTION IV. APPLICATION and SUBMISSION INFORMATION

A. Proposal Submission

Your proposal must be submitted by 11:45 pm MST November 21, 2008, using the electronic submission process provided on the JFSP website www.firescience.gov. There will be no exceptions to this closing date.

All proposals must meet all requirements in Section IV.B.4 (Proposal Requirements). Proposals that do not meet all requirements in this section will not be considered for funding.

Proposals must be submitted in the appropriate spot for the specific task statement being addressed. The proposal will be reviewed and its merits judged in the context of this one task statement only.

Questions should be directed to:

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B. Content and Form of Application

1. Areas of Interest

A. Lifecycle fuels treatment

The Joint Fire Science Program (JFSP) is interested in sponsoring research projects that investigate the longevity of fire and non-fire fuels treatments, and in comparing the effectiveness and economics of treatment regimes. The period of time over which fuel reduction remains effective depends upon the type and effectiveness of the fuel reduction treatment, the number of fuel layers involved, the rate of accumulation of fuels, fuel decomposition rates, and other factors. This may be a relatively short time for fuels with a simple structure such as grasslands, or take many years in more complex fuel types such as multi-storied coniferous forests. JFSP is also interested in better understanding how climate change may influence treatment effectiveness.

All proposals submitted under this task statement must determine the effectiveness of fuels treatments by directly addressing at least one the following questions:

- What is the length of time that fuel treatments are effective in reducing undesired fire effects and fire behavior, and how does treatment effectiveness change over time and by treatment type?
- What re-treatment intervals are needed for various treatment types to maintain desired fire behavior?
- What are the costs associated with different treatment types and re-treatment intervals, and what are the least-cost re-treatment intervals to ensure fire behavior remains within a desired range?
- What are the key uncertainties associated with analyses of treatment effectiveness, longevity, and maintenance?

Proposals should address these questions for ecosystems where fuel treatments are widespread and the results will be broadly applicable (e.g., ponderosa pine, southern pine, Douglas-fir, lodgepole pine, grasslands, or pinyon-juniper dominated systems). Many forms of science approaches could be suitable including syntheses, retrospective assessments, or modeling studies. To the extent possible, proposed work should build on existing experiments and treatments. New field experiments may also be applicable, although JFSP is not interested in initiating new long-term experiments.

B. Temporal and spatial scaling of fire and aquatic organisms

The Joint Fire Science Program (JFSP) is interested in sponsoring research that investigates the temporal and spatial scaling of fire and related post-fire disturbances (e.g., debris torrents), and their relation to the temporal and spatial scaling of population processes and life history characteristics of aquatic organisms influenced by fire. JFSP is particularly interested in how an understanding of scaling considerations can be used to assist post-fire recovery and restoration decision-making.

Terrestrial and aquatic ecosystems are dynamic, punctuated by disturbances followed by periods of recovery. Patterns and scaling of disturbance influence broad patterns in available habitat and the biological and physical processes that influence the dynamics of sensitive aquatic species such as native fishes. Although many aquatic organisms are adapted to periodic disturbance, changes in frequency, magnitude and spatial extent of disturbance can fundamentally alter the capacity of habitats and populations to respond. Thus it is critical to understand the scaling of disturbance and the processes influencing recovery of aquatic habitats and organisms to understand the risks associated with fire management.

Proposals submitted under this task must directly address at least one of the following questions in terms of aquatic habitats and organisms:

- At what spatial and temporal scales can patterns of change and recovery from fire and post-fire disturbance be predicted?
- How are patterns and scaling of fire and post-fire disturbances changing due to climate change, changes in disturbance regimes, or other factors, and how might these changes influence the persistence of populations?

- What indicators or measures of potential resilience can be defined to help managers recognize whether a wildfire event will benefit or threaten aquatic ecosystems, and at what scales should indicators be assessed? How can this information be used to guide post-fire recovery and restoration planning?

Proposals may focus on important underlying science questions and/or focus on applied questions that develop products for immediate deployment by the field. Proposals should be clear regarding the maturity of the research proposed and tailor science delivery plans accordingly.

C. Regional haze - ozone and secondary organic aerosol formation

The Joint Fire Science Program (JFSP) is interested in fundamental and applied research regarding ozone (O₃) and secondary organic aerosol (SOA) formation from both prescribed fires and wildfires, and the relative contribution of O₃ and SOA from wildland fires to regional haze. Currently, there is insufficient scientific understanding of these issues to satisfactorily address regulatory requirements (e.g., National Ambient Air Quality Standards (NAAQS) and the Regional Haze Rule (RHR)) or environmental disclosure requirements (e.g., National Environmental Protection Act (NEPA)).

This is a complex issue with many areas of scientific uncertainty. Commonly, over 50% of smoke particulate mass is SOA, which is identical in composition to SOA formed from gases emitted by plant respiration. Emissions of SOA precursors and atmospheric formation processes are poorly understood. The importance of organic gases as a contributor to ozone formation is unclear. And there are many other sources of carbonaceous particulate matter in the atmosphere.

US air quality regulations set limits on hourly, daily, and annual concentrations of fine particulate matter (including SOA) and O₃. Fires can make significant contributions to both, sometimes resulting in nonattainment violations in communities and regions. In addition, RHR regulations for Class I areas (national parks, wildernesses) require states to set goals for “reasonable progress” to improve visibility, and to develop and implement plans to reduce and manage these emissions.

Improved scientific understanding is needed to manage under improved regulatory standards, and to develop and implement realistic plans under the RHR. Proposals submitted under this task statement must address at least one of the following questions:

- How can SOA formed from fire emissions be accurately distinguished from SOA formed from plant respiration and other sources, and can fire-related aerosols be retrospectively apportioned to various fire types, such as wildfire, prescribed fire, or agricultural fire?
- What is the relative contribution of wildfires and prescribed fires to regional concentrations of SOA and O₃ on a daily basis?

This research can take the form of measurement campaigns, development of measurement techniques, micro-scale modeling, laboratory studies, regional modeling, or synthesis of existing knowledge and/or monitoring data with other datasets. Projects that demonstrate how the results can be used by land managers to manage a prescribed fire or fuels treatment program are of particular interest.

D. Smoke dispersion from low-intensity fires

The Joint Fire Science Program (JFSP) is interested in proposals that will develop an improved understanding of the processes controlling smoke transport and dispersion from low-intensity fires. Smoke from low intensity fire, either from wildfires or prescribed fires, can cause serious transportation safety problems as well as public health and aesthetic issues. Formation and dispersion of “superfog” in the southeast is of particular concern.

Low-intensity fires often result in smoke at ground levels that disperse beneath a forest canopy. Although some initial work has been completed on smoldering emissions and on canopy structure turbulence, this work has not been integrated or validated. Land managers need better tools for predicting both the short-term and long-term dispersion of smoke beneath forest canopies, including a capability to assess the influence of terrain and atmospheric conditions.

Proposals submitted under this task statement must address at least one of the following questions:

- How can the duration and extent of emissions from smoldering or low-intensity fires be better predicted? What are the relative influences of fuel moisture and ground-level weather?
- How do forest canopy structure, terrain, and atmospheric conditions influence the transport and dispersion of smoke from smoldering or low-intensity fire?
- To what extent does the dynamics of plumes generated from the actively burning portion of fires influence the transport and dispersion of smoke generated from areas with smoldering or low-intensity fire?
- What are the key factors influencing the dispersion of night-time “superfog” in the Southeast?

Results from this research can be in the form of new or improved scientific models, validation of existing or new scientific models, or new predictive tools intended for use by fire and fuels managers. Validation results must include a quantitative evaluation with a dataset not used in the model’s development, and be coordinated with the Smoke and Emission Model Intercomparison Project (contact JFSP for more information). Measurements should capture the spatial and temporal variation in the process being modeled in a way that provides statistical significance and demonstrates model robustness.

E. Trade-off assessments of AMR decisions

The Joint Fire Science Program (JFSP) seeks proposals that evaluate the consequences of alternative responses to 2007 and 2008 wildland fires. Successful proposals will characterize the consequences of wildland fire strategies and tactics implemented on the ground, and contrast those results with outcomes that could have occurred if alternative strategies and tactics were chosen.

The 1995 Federal Wildland Fire Policy, updated in 2001, offers land and incident managers greater flexibility in managing wildland fire by supporting a wide range of incident responses that fit the unique circumstances of each fire, and consider the national level of fire activity and resource commitment. All strategies and tactics from intensive fire suppression aimed at early containment to extensive monitoring could be appropriate for any wildland fire incident depending on the situation. The intent of this policy is to provide for a flexible response to wildland fire to better meet the multiple objectives of protecting life, property and resources; reducing hazard fuels; and restoring ecosystems.

The intent of this task statement is identify the outcomes of alternative wildland fire responses ranging from early full perimeter control to point protection and monitoring. Results from this work should compare the effects of alternative strategies and identify factors that influence contrasting outcomes.

All proposals submitted under this task statement must directly address at least one of the following questions:

- What are the long-term effects arising from alternative wildland fire management decisions on fuel loads, and the implications of varied fuel loads on future fire behavior?
- How do alternative wildland fire management strategies affect large-fire incident management costs, and post-fire rehabilitation and restoration costs?
- How do alternative wildland fire responses affect achievement of land management objectives for plant, wildlife, or fish habitat, or other important land management goals?

We anticipate that proposals will employ a mix of landscape modeling approaches and field-based observations. Proposals that examine multiple fires will enable broader conclusions regarding the effects of alternative wildland fire strategies and tactics.

F. Fire, insect outbreak, and windstorm effects on fuel profiles and fire behavior

The Joint Fire Science Program (JFSP) is interested in sponsoring research projects that investigate the effects of fire, insect outbreaks and windstorms on resultant fuel profiles and future fire behavior. In addition, JFSP seeks proposals that investigate these effects under varying climatic scenarios, including prolonged drought. Enhanced understanding of the influences of these processes on future fire hazard and risk will allow land managers to better focus their fuel treatments.

There are relatively few empirical studies that investigate these interactions, and predictive models are often not able to account for resulting changes in fuels profiles. For example, studies to date have shown that the time since mountain pine beetle mortality is critical in understanding the relationship between mortality, fuel dynamics and fire behavior.

However, crown fire models are not able to incorporate temporal changes in foliar moisture content into model inputs. Also, the influence of climate change and variability, especially extended drought, on fire, insect outbreaks and windstorms, and consequently on fuel profiles and fire behavior, is not well understood.

These complex interactions present a challenge for land managers attempting to identify treatment priorities and evaluate treatment effects and effectiveness.

All proposals submitted under this task statement must directly address at least one of the following questions:

- How do fuel properties (e.g., moisture content, volatile organic chemicals content, ignitability, etc.) change over time and space in response to fire, insect outbreaks and windstorms?
- How do fuel profiles (ground, surface, ladder and crown fuels) change over time and space in response to fire, insect outbreaks and windstorms?
- What are the effects of fire, insect outbreaks and windstorms on future fire behavior and how does that change over time and space?
- How does climate change and variability, especially prolonged drought, condition the effects of fire, insect outbreaks and windstorms on fuels and fire behavior?
- What are effective management strategies for addressing fuel hazards arising from insect outbreaks? Are potential increases in fuel hazard resulting from insect outbreaks of a sufficient magnitude to justify pre-outbreak treatments?

Proposals should address these questions for ecosystems where fuel treatments are widespread and the results will be broadly applicable (e.g., ponderosa pine, southern pine, Douglas-fir, lodgepole pine, or pinyon-juniper dominated systems). Many forms of science approaches could be suitable including field studies, syntheses, retrospective assessments, or modeling studies, although JFSP is not interested in initiating new long-term studies.

G. Predictive fire severity maps

The Joint Fire Science Program (JFSP) is interested in proposals that advance predictive methodology for geospatial fire severity assessments. The term fire severity is used herein as defined by NWCG as the “degree to which a site has been altered or disrupted by fire.”

Methods for remotely sensing fire severity have improved and geospatial fire severity products are now routinely generated for fires managed by the federal land management agencies in the United States. These post-fires assessments are used for a wide range of management needs (e.g., to help identify emergency stabilization and rehabilitation needs, quantify landscape scale fire effects, document habitat impacts to sensitive species).

Prediction of fire severity prior to the fire actually burning through an area may allow managers to better evaluate potential responses to wildland fires, to better plan projects to mitigate fire effects in areas of concern, and to reduce both fire suppression and post-fire rehabilitation costs. Although there has been research on this topic, there is no tool in operational use for predicting fire severity. The Wildland Fire Decision Support System (WFDSS) currently provides probabilistic estimates of fire spread and evaluates the likelihood of property losses, but does not predict fire severity.

Research methods on this topic have used either a simulation approach or an empirical approach. The simulation approach uses mechanistic fire behavior and fire effects models (e.g., BEHAVE, FARSITE, FOFEM) to simulate fire characteristics that are then used to estimate fire severity. The empirical approach relates fire severity to topographical, climatic, vegetation, and edaphic characteristics using complex statistical techniques. Both approaches have drawbacks and strengths that must be evaluated and articulated before they can be implemented in fire management applications.

Proposal submitted under this task statement should:

1. Evaluate existing methods to determine their strengths and weaknesses, including comparison with actual remotely sensed fire severity assessments.
2. Further develop existing methods, and/or explore new methods, for creating spatially specific, predictive fire severity products.

Products resulting from this methodology should include geospatial fire severity data layers in a viewable format that is compatible with WFDSS.

H. Compatibility of fuel treatments and fire management with conservation of threatened and endangered wildlife species

The Joint Fire Science Program (JFSP) seeks proposals that investigate the compatibility of fire and fuels management activities with habitat and population restoration of wide-ranging listed or candidate threatened and endangered (T&E) wildlife species. While many perceive that T&E wildlife species conservation frequently conflicts with fire and fuels management, recent work has shown that the goals of maintaining T&E habitat and restoring fire-adapted ecosystems can be compatible.

JFSP is interested in proposals that synthesize existing information and data into an interdisciplinary analysis that illuminates where and when fire and fuels management benefits, harms, or is neutral with respect to T&E species conservation. Because the dimensions of these problems vary over space and time, successful proposals will likely require a landscape assessment sufficiently robust to assess trade-offs among short-term actions and long-term responses, and to illustrate how these relationships vary over a broad landscape. Creation and analysis of example management scenarios is one technique that has been successfully used to address complex landscape management problems.

Proposals must address at least one of the following questions:

- What fire or fuel management activities can be successfully implemented while maintaining key habitat features?
- Where on the landscape can fuel management activities be planned to maintain and improve key habitat features?
- How can habitats be sustained across broad landscapes that experience fire, particularly in areas that have experienced increased fuel loads from past fire suppression?
- How does fire spread and severity from fire and fuels management activities vary in their impacts to desired habitat features?
- How might these relationships vary with potential climate change?

Results should display fire and fuel treatment intensities and spatial arrangements that minimize effects on or enhance T&E species habitat while also mitigating wildfire threats.

I. Prevention effectiveness

The Joint Fire Science Program (JFSP) is interested in funding research proposals that evaluate the effectiveness of fire prevention activities in terms of reduced fire starts.

Fire prevention activities have been funded for the last 10 years based in large part on the presumed effectiveness of prevention techniques published in “Wildfire Prevention Strategies” (NWCG Publication PMS 455/NFES 1572, 1998). These effectiveness ratings have been carried forward into the Fire Program Analysis (FPA) Prevention Module, which is intended to guide future prevention funding allocations.

The prevention technique effectiveness ratings published in “Wildfire Prevention Strategies” (Table 6) were derived from a consensus of expert opinions at the time of publication. There was very little research on which to base these ratings at the time of publication, and very little has been done since. Meanwhile, sources of ignitions have shifted in some areas due to changes in recreation patterns (e.g., ATVs are an increasing ignition source), changes in technology (e.g., powerlines use different approaches for load management), changes in land use, or other causes.

Proposals submitted under this task statement must directly address the following question:

- What is the relationship among dollars spent for a specific prevention technique(s) and the reduction in number of fire starts?

Prevention techniques selected for study should be directed at the wildland fire causes of most relevance for the area under consideration, and can be directed towards fire starts on non-federal as well as federal lands. Prevention techniques can be studied individually, or in packages of multiple techniques.

Investigators are highly encouraged to identify in the proposal a form of interaction with fire prevention specialists to help focus the study and products.

J. 2008 wildfires and wildland fire-use fires – re-measurement opportunities

The Joint Fire Science Program (JFSP) is seeking proposals that focus on re-measurement and analysis of recently burned-over experimental sites and other areas where extensive pre-fire data are available on fuel treatments, stand structure, fuel characteristics, or other resource attributes. The intent is to fund re-measurement of key variables that have previously been measured according to a robust sampling design.

Proposals must clearly describe the extent, format, and quality of the available pre-fire data, and describe the pre-fire sampling design. The proposal must also describe the analysis methodology intended for comparison of pre-fire and post-fire data in sufficient detail to allow for an independent assessment of statistical methods. Proposals must also describe plans for data management, including how pre- and post-fire data will be combined for common analysis.

Acceptable forms of re-measurement include re-measurement of social, economic, biological, or physical parameters (e.g., field plots, remotely sensed attributes, sociological surveys, wildlife surveys). Proposals must respond to a need to re-measure parameters that will not otherwise be re-measured as part of a regular, ongoing program.

Proposals for sites where reliable fire behavior observations exist are desired. 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 or resource impacts.

Proposals submitted under this task statement must address at least one of the following questions, and must involve post-fire measurements in an area burned by a 2008 wildfire or wildland fire-use fire that is well characterized by pre-fire data:

- What were the effects, effectiveness, and costs of post-fire stabilization or rehabilitation activities?
- What were the effects of previous land management activities, fire, insect outbreaks, windstorms, or icestorms on fire behavior, fire severity, or fire effects?
- What were the physical, biological, social, or economic effects of wildfires or wildland fire-use fires?
- How effective were Firewise or other defensible space treatments?

Proposals should not develop new measurement techniques but should focus on previously developed measurement tools. Proposals that build on previous assessments in human communities affected by wildfire are encouraged.

2. Format Overview

The proposal should specify justification, objectives, and methods in sufficient detail to allow an expert in the field to assess the proposal's validity.

The proposal text, excluding additional attachments, must be limited to ten (10) pages. Proposals must use at least 11 point font.

Project applications must meet all requirements in Section IV.B.4 (application requirements) to be considered. Proposals that do not meet all requirements in this section

will not be considered for funding.

a. Introduction

An introductory section should include:

- **Project justification and expected benefits.** A summary of the issue(s), why the project needs to be done (relevance to task statement in the RFA), and benefits to be derived.
- **Project objectives.** Project objective(s) must be clearly stated in measurable terms. This should include a brief statement of the hypotheses to be tested, what information or product(s) will be provided at the end of the project, and how the information or product(s) can be used to answer the questions in the task statement. Objectives should be clearly linked to specific questions in the task statement.

The introductory section is intended to provide peer reviewers and the Governing Board with evidence that the proposal demonstrates new work or significantly builds on previous and/or on-going work. Proposals must also describe how the proposed work responds to the task statement in the RFA.

b. Methods

This section should describe procedures proposed for conducting the project in sufficient detail that an expert reviewer could understand the process and that a peer could replicate the proposed work.

This section should resemble an abbreviated methods section typically found in research study plans or scientific peer-reviewed journal articles. At a minimum, methods should succinctly describe the following if applicable or appropriate:

- Study sites
- How methods tie to specific objectives and task statement questions
- Protocols for data collection
- Materials to be used to conduct the investigation
- Experimental design
- Sample design, including procedures for sub-sampling
- Tentative statistical analysis procedures including response variables, independent variables or covariates

If the proposal will use a standard methodology, e.g., Brown's fuel transects (Brown 1974), a reference is sufficient, otherwise please be specific.

NOTE: Although not required, the JFSP strongly encourages obtaining statistical input/evaluation of your study design prior to proposal submission to ensure the statistical design and methods in the proposal are adequate to accomplish the stated objective(s). Projects tentatively selected for funding may undergo an additional review to evaluate the statistical soundness of the study design.

c. Project Duration

Project duration may vary by task statement; check the specific task statement to determine if there are applicable limits. Proposals will generally not be approved for longer than three years unless otherwise specified in the task statement. Proposals must clearly state how research activities, including the final report and deliverables, can be

completed within the project term. Proposals should provide a proposed timeline for the project that identifies the significant milestones to be achieved. The Board expects investigators to outline realistic schedules in their proposals that include reasonable allowances for time likely to be lost to inclement weather and other problems.

Funding by agreements or other appropriate funding transfer documents is typically not available until mid summer or later following funding approval decisions by the Governing Board. Applicants should adjust project schedules accordingly.

d. Project Compliance

Proposals must clearly state how required National Environmental Policy Act (NEPA) and other necessary clearances will be completed to ensure the project will be completed within the project term. Proposals should identify the unit responsible for NEPA and other compliance. Letters from the responsible unit that describe the unit's commitment to the schedule are encouraged. Other common compliance issues are OMB approvals for public surveys, and permits for collection of animals or plants.

e. Budget

The JFSP Governing Board does not fund projects that are, or should be, funded internally from existing accounts (such as routine agency monitoring) or operational portions (such as the installation of fuels treatments or development of fire management plans) of other projects.

Applicants should ensure that an appropriate Federal Fiscal Representative (see definition Section VI), as well as budget, or grants and contract offices of non-federal cooperators, review the proposal prior to submission to ensure the budget and other fiscal aspects of the proposal meet agency requirements.

The Federal Fiscal Representative, or other point of contact as delegated by the sponsoring agency, will be responsible for receiving funding if the proposal is funded. When submitting a proposal the Principal Investigator certifies that the Federal Fiscal Representative has reviewed the proposal and is prepared to receive funds from JFSP if the proposal is funded, and that the receiving agency is prepared to execute sub-agreements or contracts as warranted.

Federal agencies, and entities receiving sub-awards, must be prepared to provide a current and active Dun and Bradstreet Number (DUNS) to the grants and agreements/contracting staff if the proposal is selected for funding.

Budget Detail Format

Proposals must use the format found in Appendix B.

Indirect Costs

The JFSP Governing Board recognizes the need of agencies and organizations participating in the program to recover reasonable indirect costs. However, cost effectiveness of the individual projects is a determining factor in the final selection process. The JFSP is limited within its approved policy regarding the amount of the indirect cost rate that will be approved. The maximum indirect rate is twenty (20) percent of that portion of the cost attributable to project performance. The maximum indirect rate that a federal agency may charge for flow-through/pass-through indirect costs is ten (10) percent. The Governing Board expects proposals to include only reasonable and justifiable indirect costs.

SBIR Costs

Certain proposals may be required to pay a percentage of the project's costs into the Small Business Innovation Research (SBIR) program. Proposals where the funds are transferred to a Forest Service Federal Cooperator and subsequently award a portion of the total budget to a non-federal entity through a sub-agreement or sub-contract may be required to pay 2.5% of the total funds awarded externally to the SBIR program. Check with your Federal Fiscal Representative to determine if this applies to your proposal.

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 there can be unique situations where the Governing Board may agree to fund the salary of permanent employees.

A detailed justification for funding the salary of permanent employees must be included in the proposal to be considered for funding. The justification should indicate all sources of funding, including other pending projects and associated FTE for the permanent position for which salary funding is requested. The justification must be certified by an Agency Administrator, Research Line Officer, or other appropriate institutional authority, other than the PI or other cooperator on the proposal, at the employee's organization or institution.

You must use the format found in Appendix C for the certification. In addition, permanent employee salary costs must be explicitly identified in the project budget. The Governing Board 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, graduate, or undergraduate students. Stipends are normally funded, but tuition fees are not.

f. Research Linkage

This section should describe any other current or proposed research projects that this proposal is linked to regarding study sites, design, funding, or results from Joint Fire Science Program, National Fire Plan or other projects.

g. Deliverables and Science Delivery

Investments in wildland fire science need to be accompanied by science interpretation and delivery as appropriate. Program success will not be solely measured by how many research projects are funded, or how many research papers are generated, but how critical information from research efforts is successfully conveyed to resource managers and end users with the express purpose of improving management decisions.

Therefore, it is imperative that each proposal include a description of how results and products will be effectively transferred to field managers and other end users, if appropriate. A combination of passive, e.g., published papers, CDs, websites, and active, e.g., field tours, workshops, and training sessions, methods are preferred. Those proposals utilizing a variety of methods and approaches to accomplish this function will receive higher ratings.

Successful JFSP proposals reflect a true science-management partnership. For example, managers could oversee project implementation, advise scientists, or participate directly in project research. Proposal applications should thoroughly address

policy concerns, management implications, and costs to implement research findings. Successful proposals will outline plans for delivering clear, concise information that managers can implement. The Governing Board believes the best way to achieve effective science delivery is to include the expertise and services of individuals skilled in communication and technology transfer on JFSP project teams.

Proposals must provide specific details on deliverables that will be provided by the work, along with estimated delivery dates. Please provide both a narrative and summary through use of the table provided in Appendix A. Use the following deliverable types to complete the table:

- Book or book chapter
- Masters thesis
- Non-refereed publication
- Ph.D. dissertation
- Refereed publication
- Conference/symposia/workshop
- Field demonstration/tour
- Invited paper/presentation
- Poster
- Training session
- Computer model/software/algorithm
- Dataset (including spatial)
- Website

Annual progress summaries are required and are due on September 30 of each year.

A final report must be delivered to the Program Office (both electronically and hard copy) by the termination date of the project funding document. The final report must include:

- A brief summary of what was learned from the investigation, including how the research met the objectives stated in the proposal (6-12 pages).
- A statement of how the deliverables listed in the proposal match what has actually been produced (deliverables crosswalk table).
- Copies of all completed deliverables and a timeline of additional deliverables not yet completed.

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 parentheses are required. Final report guidance is posted at the JFSP web site (www.firescience.gov).

h. Literature Cited

List all citations in the proposal (see Appendix A).

4. Proposal Application Requirements

Proposals must meet all of the following requirements to be considered. Incomplete proposals will not be considered. There will be no exceptions to either the submission deadline or other submission requirements.

If you have questions about these requirements, please contact the JFSP Program Office for clarification (Becky Jenison, 208.387.5958; John Cissel, 208.387.5349).

a. Proposal Submission – Proposal must be submitted electronically via the JFSP website (www.firescience.gov). Hard copy or facsimile proposals will not be accepted.

- Proposers must have a login and password to access the database to submit a proposal. Requests for access will be processed in approximately 48 hours.
- Proposals must have only one Principal Investigator (PI) assigned. Only the PI can submit the proposal.

b. Contacts – Proposals must have the following contacts (see definitions section VI) assigned to a proposal to be considered:

- Principal Investigator (PI)
- Federal Cooperator – This can be the PI if they are a federal employee
- Federal Fiscal Representative

All contacts must be registered and have a profile in the system to be added as a contact. You must give the Program Office at least 48 hours to create a contact in the system.

c. Proposal Delivery – Proposal & attachments must be submitted by 11:45 PM MT on the closing date stated.

d. Confirmation Page – When you submit your proposal you will receive a confirmation page. This page will serve as confirmation that a proposal was submitted. We highly recommend that you save or print this page for your records. You should receive an e-mail from the program office within 30 days letting you know that your proposal has either been forwarded for review or rejected for not meeting administrative requirements. If you do not receive this e-mail you should fax or e-mail this confirmation to Becky Jenison at Becky_Jenison@blm.gov or Fax: 208-387-5960 as soon as possible.

e. Attachments – Attachments must be submitted with the proposal.

Required Attachments:

- The body of the text must be submitted using the template provided in the RFA (Appendix A). Proposals over the page limit will not be accepted
- Budget Detail using the template provided (Appendix B)
- C.V.s of the PI (2 page maximum) and co-PIs (1 page maximum)

Optional Attachments:

- Letter(s) of support
- Salary justification (only required if funding is requested to pay salary for permanent full time or tenure track employees)

f. Task Statement – All proposals must be submitted in the appropriate spot for the task statement addressed by the proposal. Proposals will only be considered in the context of this one task statement and should not address additional objectives. Proposals that do not clearly and directly meet the intent of the task statement stated will not be considered for funding.

g. Format – Proposals not following the required format will not be considered. Proposals must use at least 11 point font. Additional guidance is in the "Format Overview" section.

h. Page Limits – Proposals exceeding the page limit (10 pages) will not be considered.
-What counts – body of the proposal including literature cited
- What does not count – CVs, budget detail, salary justification, support letters, and title page data

i. Title Page – The title page information must be submitted in the electronic proposal database on the details tab. Required fields are marked and must be completed in order to submit your proposal.

- Project category is a required field in the database. Proposers should select one category from the drop down menu that best describes the proposed work.

j. Signatures – Handwritten signatures are no longer required. When Principal Investigators submit proposals they will be prompted to input their password. By typing in the password PIs certify that “the Federal Cooperator and Co-PIs have reviewed the proposal and have agreed to participate in this role. I am also certifying that the Federal Fiscal Representative has reviewed the budget and is prepared to receive funds from JFSP if the proposal is funded, and the receiving agency is prepared to execute sub-agreements or contracts as warranted.”

k. Indirect Costs – JFSP will not consider proposals asking for more than 20% indirect costs and/or more than 10% pass-through costs.

l. In-kind Contributions – JFSP does not have a standard ratio or minimum requirement for in-kind contributions. However, in-kind contributions are an evaluation factor.

m. Support Letters – Support letters are not required. If submitted, they must be submitted as an attachment to the electronic proposal to be considered. Hard-copy support letters sent directly to JFSP will not be considered. Support letters must clearly state the title of the project and the name of the PI of the proposed work.

n. Salary Justifications - Salary justifications are only required if the proposal is requesting funds for salary of permanent or tenured employees for a portion of the year normally covered by permanent or tenured funding. If required, the salary justifications must contain all of the requested information and be signed electronically by the applicable Agency Administrator (see Definitions, Section VI). Salary justifications must be submitted as an attachment to the electronic proposal.

o. Past-due Projects – No proposals will be considered if the work will be implemented by a PI or Co-PI who is a PI or Co-PI on a JFSP project that is past due as of the closing date of this announcement. See the JFSP website for the complete JFSP past due and extension request policy.

SECTION V. APPLICATION REVIEW and EVALUATION INFORMATION

Overview

Proposals will be reviewed in four stages:

1. JFSP Program Office – Administrative requirements and task statement intent
2. Peer Review – Relevancy, technical merit, products, and feasibility
3. Governing Board Review – Tentative decisions
4. Statistical Review (optional) – Adequacy of study design and analysis methods

Review Criteria

Relevancy

- Importance of the proposal to the land management community.
 - To whom and at what level (national, regional, local)?
 - At what time frame?
 - Immediate application
 - Science to build on
 - Proof of concept
- Importance of the proposal to the science community.

Technical Merit

- Does the proposal directly address the RFA and relevant task statement?
- Are objectives and hypotheses clearly articulated?
- Are methods appropriate for stated objectives?
- Can hypotheses be answered with the proposed design and analysis?

Products, Deliverables and Science Application

- What is the final product and why is it important?
- What will it do and who will use it or want it?
- Who will deliver it and how will it be delivered?
- Is it something completely new or does it build on or enhance an existing application?

Feasibility

- Administrative adequacy
 - Budget
 - Skills and qualifications
 - Probability of success
 - Barriers
 - NEPA
- Collaboration
 - Manager/scientist interaction
 - Local management commitment
 - Does the proposal have in-kind contributions?

SECTION VI. DEFINITIONS

Request for Applications (RFA): Joint Fire Science Program method of requesting project proposals. The RFA includes task statements for which proposals are sought, instructions for proposal submission, and related information.

Federal Fiscal Representative: Employee of the federal agency sponsoring a proposed project who will be responsible for the review and approval of the project's budget. This individual may also serve as the administrative and/or fiscal point of contact for the proposed project if funding is awarded. The individual delegated as the point of contact for the funding award document is typically a Grants and Agreements Specialist, Contracting Officer, Budget Analyst or Administrative Officer.

Principal Investigator (PI): The individual identified in a proposal who is the research lead for the project. This individual is responsible for coordinating all research related activities and will be the primary science contact for the project. The PI is responsible for communicating and coordinating with Co-PIs and others on the research team.

Co-Principal Investigator (Co-PI): The individual(s) identified in a proposal who works with the research lead on the project and makes a substantial contribution to the project. The Co-PI is responsible for communicating and coordinating with the PI.

Federal Cooperator: This individual must be a federal employee and is responsible for coordinating with the PI (if the PI is other than her/himself), and the grants and agreements and budget/finance staff on administrative activities for this project. The Federal Cooperator will be one of the primary contacts for the project and should stay informed and involved in project activities.

Indirect Costs: Those costs that are a percentage of the total cost used to pay for overhead/administrative costs attributable to a specific research project. Examples include the cost of operations and maintenance such as janitorial, phone, and clerical services. The Joint Fire Science Program recognizes two types of indirect costs: 1) "in-house" costs incurred by the agency, institution, or unit completing the research; and 2) "pass-through" costs associated with sub-awarding project funds to another agency, institution, or entity for the purpose of completing research or science delivery.

Joint Fire Science Program Governing Board: An appointed, 10-person Board representing the JFSP partnering agencies. The Board provides strategic direction and oversight to JFSP, identifies important research questions, selects proposals for funding, supervises the JFSP Program Manager, and conducts related business.

Science Delivery and Application: The transfer of information, materials, models and other research deliverables to end users, along with adequate information and training to apply the deliverables. Examples of active methods include workshops, training sessions, guided field tours, conferences, meetings, and symposia. Examples of passive methods include published papers and websites. A combination of active and passive methods is preferred.

Task Statement: A specific area of interest, identified in the RFA, for which proposed project applications are sought.

SECTION VII. APPENDICES

APPENDIX A – PROPOSAL TEMPLATE
Proposals must use the following template to be considered
You must use at least 11 point font

I. Introduction

<Narrative>

1. Project Justification & Expected Benefits

<Narrative>

2. Project Objectives and Hypotheses

<Narrative>

II. Methods

1. Study Site(s)

<Narrative>

2. Sampling Design

<Narrative>

3. Field Measurements

<Narrative>

4. Data Analysis

<Narrative>

5. Materials

<Narrative>

III. Project Duration and Timeline

This project will last approximately x years, assuming a start date in Month of Year, with completion in Month of Year.

Project Milestone	Description	Delivery Dates

IV. Project Compliance - NEPA and other clearances.

<Narrative>

V. Budget

Table x. Proposal Budget Summary for FYs 200x, 200y, and 20zz

Budget Item	200x		200y		20zz		TOTAL
	Requested	Contributed	Requested	Contributed	Requested	Contributed	
LABOR							
TRAVEL							
VEHICLES							
Capitalized Equipment:							
Materials and Supplies:							
Science Delivery and Application:							
Other							
Total Direct Costs							
Indirect Costs: XX% - all costs							
Total Contributed Funding all years		xxxxxxx		xxxxxxxxx		xxxxxxx	xxxxxxx
Total Requested Funding all years	xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx

VI. Research Linkage

<Narrative>

Table x. Current and Pending Research Grants

Grant Program	Project or Proposal Description/Identification	Funding Amount	Project Completion Date

VII. Deliverables and Science Delivery

<Narrative>

Table x. Deliverable, Description and Delivery Dates

Deliverable Type (See Format Overview, Section VIII)	Description	Delivery Dates

VIII. Roles of Investigators and Associated Personnel

Table x. Roles and Responsibilities of Associated Personnel

Personnel	Role	Responsibility

IX. Literature Cited

APPENDIX B – BUDGET DETAIL

Table x. Budget Detail for FYs 200x, 20yy, and 20zz

Budget Item	200x		20yy		20zz		TOTAL
	Requested	Contributed	Requested	Contributed	Requested	Contributed	
LABOR/PI salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR/Other Salary Subtotal							
Commercial air travel:							
Travel expenses (i.e., meals, lodging): - Field - Site Visits - PI workshop - Other							
Vehicle Rental:							
Capitalized Equipment: - Computers - software - other (itemize)							
Materials and Supplies:							
Science Delivery and Application: - Manuscript Prep/Publication Costs - Web Page - Software distribution - workshops - Other							
Other - Itemize							
Total Direct Costs							
Indirect Costs attributable to project (in-house): XX% - of total direct costs (if applicable)							

Pass-through indirect costs: YY% - of total direct costs (if applicable)							
Total Contributed Funding all years		xxxxx		xxxxx		xxxxx	xxxxx
Total Requested funding all years	xxxxx		xxxxxxx		xxxxxxx		xxxxxxx

APPENDIX C – SALARY JUSTIFICATION

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.

Justification:

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 /s/ _____

Date _____

Title _____

Phone No. _____

-- END OF PROGRAM ANNOUNCEMENT --