



**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)

**PROJECT ANNOUNCEMENT No. FA-RFA010-0001
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 25-30
- B. Estimated Total Program Funding:** Approximately \$8,000,000 - \$10,000,000
- 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.

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. 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>.

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

SECTION IV. APPLICATION and SUBMISSION INFORMATION

A. Proposal Submission and Agency Contact

Your proposal must be submitted by 5:00 pm MST November 20, 2009, using the electronic submission process provided on the JFSP website www.firescience.gov. Proposals should not be submitted in Grants.gov. There will be no exceptions to this closing date and time.

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

Proposals must be submitted in the appropriate 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. Task Statement

1. Mastication fuel treatments – effectiveness and effects

The Joint Fire Science Program (JFSP) is interested in sponsoring research projects to better understand the effectiveness and effects of fuel mastication treatments. Mastication has become a widely used fuel treatment to alter fuelbed characteristics and reduce potential fire severity, especially in the wildland-urban interface where mechanical fuel manipulation may pose less risk than use of prescribed fire.

Masticated fuels vary widely in particle size, arrangement, and compaction. Greater understanding of fuelbed characteristics and potential wild- and prescribed fire behavior in masticated fuels, and the effects of mastication treatments on plants and soil is necessary to analyze effectiveness of treatments and to anticipate changes in fire behavior and fire effects.

Although several studies have been conducted on mastication treatments, additional research is needed to expand this knowledge into a greater variety of forested and non-forested vegetation types, and to develop a series of fuel models specifically for masticated fuel beds. JFSP is also interested in better understanding how climatic changes may influence treatment effectiveness, and the potential for spontaneous ignitions in piles of masticated materials.

All proposals submitted under this task statement must evaluate the effectiveness and/or effects of mastication treatments by directly addressing at least one of the following questions:

- What are the effects of mastication treatments, both with and without follow-up prescribed fire, on fuelbeds and how does that alter future fire behavior?
- How does treatment effectiveness vary with time since treatment?
- How does the specific machinery, prescription, or level of effort used affect fuel bed characteristics and fire behavior?
- What are the effects of mastication treatments, both with and without follow-up prescribed fire, on plants and soils, and how does it vary over time?
- What are the costs of mastication treatments and how do mastication treatment costs compare to the costs of other fuel treatments?

Proposals should address these questions for ecosystems where mastication treatments are widespread and the results will be broadly applicable. Resulting descriptions of fuelbeds should provide enough detail to be incorporated into fuel characteristics and fire behavior prediction software.

2. Conifer canopy fuels estimation

Recent research has shown a clear need to improve procedures used to estimate conifer canopy fuels in fire behavior modeling systems. For example, canopy biomass estimators commonly used in fire behavior modeling systems resulted in substantial underestimates of canopy bulk density for Black Hill ponderosa pine in a recently completed JFSP study (JFSP #06-3-3-13). More accurate canopy biomass parameter estimates are needed to ensure fuel treatments achieve their intended effects, and that fire behavior predictions are well-founded. Better canopy biomass estimates may also improve carbon accounting assessments.

The Joint Fire Science Program (JFSP) is interested in funding proposals that assess the significance and extent of this problem, and produce data that can be used to improve conifer canopy fuel estimates in regions where canopy fuel treatments are widespread. Proposals must address one of the following needs:

- A comprehensive evaluation of the performance of existing conifer canopy biomass equations that could be used in fire behavior modeling systems – An evaluation should focus on major forest species by geographic area and include a review of existing alternative canopy biomass estimators. New data collection through field work or other methods to develop and test local allometries for forest types where no adequate models currently exist is desired. An evaluation should include an assessment of the independent variables for their consistency with common tree inventory measurements (e.g. DBH, tree height etc) and fuels measurements (e.g. 1 hr, 10 hr, etc classes).
- Statistical descriptions of non-uniform, vertical distribution of crown fuel mass – Statistical analyses should focus on major tree species and their relation to stand structure by geographic area. These descriptions should be of a form suitable for

incorporation into fire behavior modeling systems including the Forest Vegetation Simulator – Fire and Fuels Extension. For species and regions where existing data are inadequate, proposals should include new data collection through field work or other methods to develop such models.

Proposals should focus on specific forest types and geographic areas where fire behavior estimates are commonly used to guide canopy fuel treatments. Statistical models should be tested with an independent data set.

3. Public perceptions of smoke management

The Joint Fire Science Program (JFSP) is interested in funding proposals that address questions regarding public perceptions of smoke management. Citizen and community tolerance for smoke affects decisions for both planned and unplanned fires. The location, timing, and specific parameters for prescribed fires may all be influenced by public perceptions. Priorities for initial attack, incident response decisions, and the extent of mop-up activities may also be influenced by public perceptions of smoke.

While health and safety (i.e., visibility) are the primary reasons for public concern over smoke, less is known about the factors shaping public tolerance of smoke. Better information regarding public tolerance for smoke will help managers make better decisions about fire and fuel management activities.

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

- How does the length of time people are exposed to smoke, or the density or concentration of smoke parameters, e.g., PM_{2.5}, affect their tolerance of smoke?
- How does the source of the smoke, e.g., planned versus unplanned fire, or the purpose of the smoke, e.g., managing fuels for forest health versus treating residual fuels from a timber harvest activity, affect people's tolerance of smoke?
- How does the degree of active management on a fire, e.g., intense suppression versus monitoring, affect people's tolerance of smoke?
- How effective are programs to manage the impacts of smoke, e.g., various notification programs, and how can they be more effective?
- Do higher levels of community preparedness for fire, e.g., active partnerships engaged with local land managers or well-developed preparedness plans, foster more or less tolerance of smoke?

JFSP is particularly interested in understanding regional variations in people's perceptions of smoke and smoke management. Projects that demonstrate how results can be used by land managers to manage a fire and fuel program are of particular interest.

4. Improved fuels mapping in non-forested ecosystems

Substantial research and development has been invested over the past several decades in mapping and characterizing forest fuels, especially forest floor fuels. Today's fire and fuels management tools and applications frequently yield reasonable results on forested sites, in part because of the research invested in forested site fuel beds and fuel models.

However, fire and fuel managers of marshlands, sagebrush rangelands, deserts, chaparral, and

non-forested tundra ecosystems have often found that fuels information lacks the precision needed to support modeling applications and management planning. Current mapping approaches on these non-forested lands does not capture the spatial and temporal variation in fine fuels that is crucial knowledge to fuels specialists crafting land management prescriptions.

The Joint Fire Science Program (JFSP) seeks proposals that develop new and improved methodologies for mapping fuels on non-forested lands. Proposals must address one or more of the following questions:

- How can methods be improved to differentiate fine fuels components on non-forested arid and semi-arid lands, especially native vs. non-native vegetation?
- Can remote sensing-based maps of fine fuels (especially live fuels) on non-forested lands be improved using vegetation phenology to differentiate and forecast fine fuels, time-sensitive cure rates, and fuel moisture?
- Can fuels mapping on non-forested lands be improved to determine more accurate trigger points in the combustion cycle (ignition, smoldering, flaming, back to smoldering, and finally to extinction)?
- Are there new ground-based survey methods or mapping techniques of non-forested land fuels that would enable managers to rapidly characterize fuel beds across landscapes?
- Are there new mapping procedures that enable rapid updating of older data?

The JFSP Governing Board is interested in both ground-based and remote sensing methodologies. Proposals that develop or test remote sensing methods should include verification with field data.

5. Organizational learning - prescribed fire escapes

The Joint Fire Science Program (JFSP) seeks proposals that evaluate escaped fire review processes and identify ways to improve organizational learning. While only a small proportion of prescribed fires escape, escaped fires occur every year and sometimes lead to multi-million dollar incidents. For example, a report prepared for the Wildland Fire Lessons Learned Center in 2005 estimates that there are 40-50 prescribed fire escapes or near-misses annually.

JFSP is seeking ways to improve escaped-fire reviews so that organizational systems and policies can be aligned with the goal of minimizing losses from escaped fires.

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

- What barriers inhibit effective organizational learning? To what extent is fear of liability or punitive action an inhibiting factor?
- How should reviews be structured to improve organizational learning? For example, what kind of charter or direction should be given to a review team to promote organizational learning?
- What disciplines are needed to facilitate effective review?
- What needs to be documented from escaped-fire reviews, and how are key results and recommendations best shared with local, regional, and national managers?
- Are there changes that should be made in training, management, or monitoring systems to better respond to review recommendations?

Other related questions that directly address ways to improve the organizational learning that should result from escaped-fire reviews may be appropriate.

We anticipate that proposals will employ a mix of social science and organizational performance approaches. Recommendations resulting from this analysis should be applicable to all federal land management agencies that conduct prescribed fires.

6. 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 wildlife species that are federally listed as threatened and endangered (T&E), or are on the federal list of candidate species for listing as T&E (<http://www.fws.gov/Endangered/wildlife.html>). 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.

JFSP is also interested in proposals that examine the effectiveness of seasonal restrictions on fuel treatments to maintain or enhance habitat or populations of wildlife species that are federally listed as threatened and endangered (T&E), or are on the federal list of candidate species for listing. The JFSP Board is particularly interested in field studies that examine the effectiveness of current or novel restrictions that have regional applicability.

Proposals must address at least one of the following questions:

- What type and location of fire and fuel management activities can be successfully planned and implemented 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 do fire and fuels management activities vary in their impacts to desired habitat features?
- How might climate change alter the effects of fire and fuel management activities on key habitat features?
- Are existing seasonal restrictions effective at maintaining key habitat features or populations? Are there new approaches to meeting habitat and population objectives that could reduce the need for seasonal restrictions?

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. Proposals must identify the federally listed species addressed.

7. Fire weather forecast accuracy

The Joint Fire Science Program (JFSP) is interested in sponsoring research projects that investigate and quantify the accuracy and reliability of fire weather forecasts, and that develop new analysis techniques to improve forecast accuracy. Fire weather and fire behavior analysts rely on fire weather forecasts to inform their predictions and interpretations of likely fire and smoke behavior, which, in turn, are used by fire and incident managers to plan for the safe conduct of fire operations. Gridded fire weather forecasts are also important components of fire potential and fire danger rating systems. It is essential that the accuracy of fire weather forecasts are known and communicated, that forecast accuracy is improved where possible, and that tools are developed that enable fire weather analysts to verify forecast fields.

Fire weather forecasts are usually derived from the National Digital Forecast Database (NDFD), which is based on the Real-Time Mesoscale Analysis (RTMA) conducted by the National Weather Service. The RTMA incorporates observations from a wide variety of observation networks into a 3D model of the atmosphere and land surface. Regional forecasts derived from the RTMA are stored in the NDFD, and subsequently refined by local fire weather forecasters for short-term (up to three days) incident-scale applications. Errors in each step of this process are propagated through the chain of observations and models that result in a fire weather forecast.

All proposals submitted under this task statement must quantify the accuracy and reliability of fire weather forecasts, develop or improve forecast analysis techniques, and/or develop tools to verify gridded forecast fields. Proposals must directly address at least one of the following questions:

- How well do fire weather forecasts perform as compared to observed conditions? How can the impact of observation or model errors be quantified to provide measures of forecast confidence for the user?
- What is the impact of different measurement standards and errors in observation networks on fire weather forecasts, and how does this affect accuracy assessments?
- What is the impact of processing techniques that downscale model information, and how do they affect forecast accuracy?
- Are there improved techniques to better represent the influences of complex terrain?
- What is the impact of boundary conditions on forecast accuracy? Can enhanced observations or improved modeling techniques improve boundary representation?

JFSP is interested in proposals that evaluate or validate fire weather observation and modeling systems, and develop tools that allow forecasters to verify forecast accuracy and communicate forecast confidence. Proposals should clearly state how the results of the proposed work would directly improve fire weather forecasts, and identify any additional work that would be needed to incorporate these results into operational fire weather forecast methods.

8. Fuel moisture influences on combustion

The Joint Fire Science Program (JFSP) is seeking proposals that investigate the various influences of fuel moisture on combustion processes. It is widely acknowledged that a next-

generation, physics-based fire behavior prediction model is needed to better unify our understanding of wildland combustion. While the ultimate configuration of such a model is unknown, it is clear that fundamental knowledge of the roles that fuel moisture plays in regulating combustion will be needed.

Historically, most of the effort to understand the role of fuel moisture in wildland combustion processes has focused on dead fuels, which respond passively to atmospheric conditions. In contrast, live fuel moisture is actively regulated by living plants in response to environmental changes. Despite this distinction, the influence of live fuel moisture on combustion has received relatively little attention. In fact, live fuel moisture in fire danger ratings is based on the moisture content of large, dead fuels, and recent experiments have shown that assumptions built into fire behavior models regarding live fuel moisture are false.

A more complete description of the role that fuel moisture plays in both live and dead fuels by dampening combustion and fire spread is required to advance fire behavior modeling, and for improving operational fire behavior interpretations. Proposals submitted under this task statement should address at least one of the following questions:

- How does fuel moisture influence preignition drying, pyrolysate formation, thresholds of ignition, combustion rates, and transitions among combustion phases (including extinction) at a fuel particle scale?
- How does fuel moisture affect heat transfer between fuel particles, and what are the influences of fuel particle type and size?
- How much moisture remains in leaves and small branches when ignition occurs? How does this moisture affect continued combustion?
- How does the presence of soluble compounds in fuel moisture affect the energy required to ignite living foliage, and do variations in solute concentrations substantially affect ignition thresholds?
- Are there differences in live fuel moisture effects on combustion which are associated with lifeforms (tree, shrub, forb, etc.)?

Results from work funded under this task statement are expected to advance scientific understanding and to lay important ground work for advances in fire behavior modeling. Field and laboratory experiments that produce results that can be directly incorporated into physics-based models of fire behavior are encouraged. Model development proposed under this task statement should include provisions for model verification with an independent data set.

9. Ethno-ecological fire traditions – understanding and demonstration

The Joint Fire Science Program (JFSP) is interested in proposals that investigate traditional fire use patterns and demonstrate application of this knowledge in contemporary settings. The intent is to use the skills of anthropology and ecology to document traditional knowledge and use of fire, and to highlight applications of this knowledge to meet current land management objectives.

Investigators are expected to use ethnographic and historical records, archival materials, fire history, and fire ecology research to determine traditional fire use patterns. Interaction with contemporary members of indigenous groups whose ancestors applied fire to historical landscapes will be necessary to obtain information, help determine potential applications of traditional knowledge, and to help shape educational messages.

Proposals should include provisions to demonstrate applications of fire using traditional knowledge where natural and human fire ignitions contributed historically to the environmental setting. Applications need to consider that contemporary landscapes are not occupied or used as they were historically, and identify opportunities where traditional knowledge can contribute to conservation of biological diversity or meet other human uses in fire-adapted systems.

Proposals should contain:

- Provisions to obtain and document traditional fire use patterns and the desired socio-economic, ecological, or other effects
- Provisions to demonstrate application of traditional fire use knowledge to meet contemporary objectives
- Development of educational materials to disseminate knowledge using outreach and educational materials applicable to a wide-range of audiences, including students, tribal members, members of the public, and agency fire and fuel managers

Successful proposals will be applicable to a broad geographic area, and include interdisciplinary methods to verify traditional fire use patterns.

10. Re-measurement opportunities – carbon budgets and insect outbreaks

The Joint Fire Science Program (JFSP) is seeking proposals that re-measure existing field studies for two purposes:

- to assess the effects of fire or fuel treatments on carbon budgets
- to assess the effects of insect outbreaks on fuelbeds, fire behavior, or fire effects

Proposals requesting funds to re-measure other parameters will not be considered.

Proposals must clearly state the added value to be obtained from re-measurement, and must respond to a need to re-measure parameters that will not otherwise be re-measured as part of a regular, ongoing program.

Proposals must clearly describe the extent, format, and quality of the available pre-existing data, and describe the sampling design under which these data were collected. Proposals focusing on carbon budgets must demonstrate that pre-existing data are sufficient to reliably estimate a carbon budget. Proposals will only be considered if the experimental design, measurement methodology, data and results for the prior measurement(s) have been published in a peer-reviewed scientific journal.

Proposals must describe the analysis methodology intended for comparison of pre-existing and newly collected data in sufficient detail to allow for an independent assessment of statistical methods. Proposals must also describe plans for data management, including how data will be combined for common analysis.

C. Format Overview

The proposal should specify the justification, objectives, planned activities, methods, and partnership resources in sufficient detail to allow reviewers to assess the feasibility and

potential success.

The proposal text, excluding additional documents attached separately, must be limited to ten (10) pages. Proposals must use at least 11 point font and leave one inch margins.

Project applications must meet all requirements in Section D (Proposal application requirements) to be considered. Proposals that do not meet all requirements will not be considered for funding.

1. 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.

2. 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.

3. 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.

4. 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.

5. Budget

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

The Federal Fiscal Representative will be responsible for receiving funding if the proposal is funded and should review the proposal prior to submission to ensure the budget and other fiscal aspects of the proposal meet agency requirements. The Federal Fiscal Representative must be prepared 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 Attachment 2. A budget detail must be provided for each institute requesting funding.

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 by the supervisor of the individual requesting salary.

You must use the format found in Attachment 2 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.

6. 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.

7. 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 Attachment 1. 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).

8. Literature Cited

List all citations in the proposal (see Attachment 1).

D. 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).

1. Proposal Submission – Proposal must be submitted electronically via the JFSP website (www.firescience.gov). Proposals should not be submitted in Grants.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 24 hours.
- Only the PI can submit the proposal.
- Proposals can be saved in the JFSP system and submitted at a later date prior to the closing date and time. Submitted proposals can be reverted back to final draft by the PI prior to the closing date. If you revert a proposal back to draft you must resubmit the proposal before the closing date and time.
- The system will not allow proposals to be submitted after the closing date and time.

2. Contacts – Proposals must have the following contacts (see above, “Definitions”) assigned to a proposal to be submitted:

- Principal Investigator (only one Principal Investigator can be assigned)
- Federal Cooperator – This can be the PI if they are a federal employee, if this is the case you must assign yourself to both roles in the system (only one federal cooperator can be assigned).
- Federal Fiscal Representative (only one federal fiscal representative can be assigned)
 - Federal Fiscal Representative must be willing to facilitate the receipt of funds and execution of sub-agreements if your proposal is funded.
- All contacts must be entered on the “Contacts tab” in the system by the Principal Investigator. Contacts must be registered and have a profile in the system to be added as a contact. If you have registered in the past you will still be in the system. New contacts may take up to 24 hours for a profile to be created.
- It is the responsibility of the individual contacts to ensure that the contact information in the JFSP electronic submission system is correct including affiliation, e-mail, phone number and address.
- Co-PIs and collaborators are not required on a proposal; however, if they are involved with a proposal they must be entered on the contacts tab.

3. Confirmation Page – When you submit your proposal you will receive a confirmation page. We highly recommend that you save or print this page for your records. You should receive an e-mail from the JFSP Program Office 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 within 30 days you should fax or e-mail your confirmation to Becky Jenison at Becky_Jenison@blm.gov or Fax: 208-387-5960 as soon as possible.

4. Attachments – All required documents must be attached before the proposal is submitted. Attachments over the page limit cannot be submitted. Extra graphs and text are not permitted and will not be reviewed

Required attachments:

- Attachment 1:
The body of the text
- Attachment 2:
Budget Detail (**NOTE:** Full budget detail now required for each institution requesting funding)
C.V.s of the PI (2 page maximum) and co-PIs (1 page maximum)
Letter(s) of support (optional)

Salary justification (may be required, see below)

5. Task Statement – Proposals that do not clearly and directly meet the intent of the task statement selected will not be considered for funding. Please make sure you are submitting your proposal to the correct task statement in the system.

6. Format – Proposals not following the required template will not be considered. Proposals must use an 11 point font or larger. Additional guidance is in the "Format Overview" section.

7. Page Limits – Proposals (Attachment 1) exceeding the page limit (10 pages) cannot be submitted.

8. Project Location - Project location fields must be completed on the Location tab for a proposal to be successfully submitted. Instructions are listed on the project location tab.

9. Title Page – There is no longer a title page for proposals. Information formerly included on our title page must be submitted in the electronic proposal database on the “Details” and “Contacts” tabs.

10. Signatures – Handwritten signatures are no longer required. When Principal Investigators (PIs) 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.”

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

12. 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.

13. Support Letters – Support letters are encouraged, but not required. If submitted, they must be attached as part of Attachment 2. Support letters sent by hard copy or email directly to JFSP will not be considered.

14. 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, salary justifications must contain all of the requested information and be signed electronically by the supervisor of the individual requesting salary coverage. Salary justifications must be attached as part of Attachment 2.

15. 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 that will be responsible for the review and approval of the project's budget and is willing to facilitate the receipt of funds and execution of sub-agreements if a proposal is funded. The Federal Fiscal Representative 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. ATTACHMENTS

ATTACHMENT 1 – PROPOSAL TEMPLATE

Proposals must use the following template to be considered

You must use at least 11 point font

Title (please include a reference to the region served in the title)

Principal Investigator name and affiliation (please do not list Co-PIs or collaborators here or elsewhere in the proposal body)

I. Overview

<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

<Narrative>

Table x. Proposal Budget Summary for FYs 20xx, 20yy, and 20zz

Budget Item	20xx		20yy		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		xxxxxxxxx		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

ATTACHEMENT 2 – BUDGET DETAIL

Please provide a total budget detail for the proposal and a separate budget detail for each institution requesting funding

Table x. Total Budget Detail for proposal FYs 20xx, 20yy, and 20zz

Budget Item	20xx		20yy		20zz		TOTAL
	Requested	Contributed	Requested	Contributed	Requested	Contributed	
Labor: Subtotal institution xxx							
Labor: Subtotal institution xxx							
Labor: Subtotal institution xxx							
TOTAL LABOR							
Travel expenses: Subtotal institution xxx							
Travel expenses: Subtotal institution xxx							
TOTAL TRAVEL							
Capitalized Equipment: Subtotal institution xxx							
Capitalized Equipment: Subtotal institution xxx							
TOTAL EQUIPMENT							
Materials and Supplies: Subtotal institution xxx							
Materials and Supplies: Subtotal institution xxx							
TOTAL MATERIALS AND SUPPLIES							
Science Delivery and Application: Subtotal institution xxx							
Science Delivery and Application: Subtotal institution xxx							
TOTAL SCIENCE DELIVERY							
Other: Subtotal institution xxx							
TOTAL OTHER							
TOTAL DIRECT COSTS							
Indirect Costs: Subtotal institution xxx							
Indirect Costs: Subtotal institution xxx							
TOTAL INDIRECT COSTS							
TOTAL REQUESTED FUNDING	xxxxxx		xxxxxxxx		xxxxxxxx		xxxxxxxx
Total contributed funding all years		xxxxxx		xxxxxx		xxxxxx	xxxxxx

Table x. Budget Detail for XXX institute (provide a separate budget detail for each institution requesting funding) FYs 20xx, 20yy, and 20zz

Budget Item	20xx		20yy		20zz		TOTAL
	Requested	Contributed	Requested	Contributed	Requested	Contributed	
Labor: \$xx/week @ xx weeks for FY xx, yy, and zz)							
Labor: \$xx/week @ xx weeks for FY xx, yy, and zz)							
Labor: \$xx/week @ xx weeks for FY xx, yy, and zz)							
LABOR SUBTOTAL							
Travel expenses (i.e., meals, lodging, etc.): - Field/Site visits - Conferences/Meetings - Other							
TRAVEL SUBTOTAL							
Capitalized Equipment: - Computers - software - other (itemize)							
EQUIPMENT SUBTOTAL							
Materials and Supplies: - Itemize							
MATERIALS AND SUPPLIES SUBTOTAL							
Science Delivery and Application: - Itemize							
SCIENCE DELIVERY SUBTOTAL							
Other - Itemize							
OTHER SUBTOTAL							
TOTAL DIRECT COSTS							
Indirect costs attributable to project : XX% - of total direct costs (if applicable)							
Pass-through indirect costs: YY% - of total direct costs ** (Federal Cooperator only)							
TOTAL INDIRECT COSTS							
TOTAL REQUESTED FUNDING	xxxxx		xxxxxxx		xxxxxxx		xxxxxxx
Total contributed funding all years		xxxxx		xxxxx		xxxxx	xxxxx

**** Include pass-through costs assessed for all cooperating institutions.**

ATTACHEMENT 2 - 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. _____

ATTACHMENT 2 – CURRICULUM VITAE

ATTACHMENT 2 – LETTERS OF SUPPORT

-- END OF PROGRAM ANNOUNCEMENT –