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-RFA012-0001
Primary Announcement (8 Task Statements)

CFDA No. 15.232
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JFSP Request for Applications (RFA) 2012-1

CLOSING DATE & TIME

November 18, 2011 5:00 p.m. MST

New for 2012: Data Management Plan

There are new requirements for a data management plan in this RFA solicitation.
Please see SECTION IV Application and submission information for further information.

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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 Principal Investigator on each funded project. Projects will be required, at a minimum, to provide a written progress report annually.

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 15-20

B. Estimated Total Program Funding: Approximately $6,000,000

C. Award Ceiling: None

D. Assistance Instrument: To be determined at a later date by the JFSP

SECTION III. ELIGIBILITY INFORMATION

A. Eligible Applicants: The JFSP encourages proposals from all interested parties.

B. Funding Cooperator: Funds will be awarded through a federal agency, a university, or a non-governmental organization (NGO). Funds will go to the PI's institution. Proposals with federal funds requested that do not have a federal PI must list a federal funding cooperator. Similarly, proposals with a university or NGO PI that do not include funding for federal agencies do not need a funding cooperator and funds will route through the PI's institution.

All proposals with a PI from other organizations, e.g., states or private business, or have any international funding, must also identify a funding cooperator to receive and process the funds. If the funding cooperator is from the Forest Service, the cooperator must be from a Forest Service research station. The grant contact and budget contact must be from the funding cooperator's institution.

Proposals where the PI or funding cooperator is an employee of a university or NGO will be funded directly by an award document (e.g., a cooperative agreement) between JFSP and the PI's institution. The institution will be required to respond to a second non-competitive posting on grants.gov to initiate funding.

Upon receipt of a fully executed award document, the institution receiving funds from JFSP will be responsible for all sub-award transactions to cooperators or contractors related to the project. The end date and indirect costs for all sub-awards must match the end date in the original funding award document.

All selected awardees must provide a valid Dun & Bradstreet number (D&B). You can reactivate or obtain this at http://www.dnb.com or by calling 800-333-0505. There is a federal agency link on the Central Contractor Registration system (CCR) at http://www.ccr.gov.

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

SECTION IV. APPLICATION AND SUBMISSION INFORMATION

A. Proposal Submission and Agency Contact

All proposals must be submitted by 5:00 pm MST November 18, 2011, 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 for 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 Statements

1. Remeasurement of Prior Studies - Effects of Prescribed Fire on Vegetation, Fuels, and Soil

The Joint Fire Science Program (JFSP) is seeking proposals to remeasure existing field studies that evaluate the use of prescribed fire to achieve desired vegetation conditions. Studies that evaluate the long-term effects of prescribed fire on vegetation, fuel, or soil are eligible for funding consideration. Proposals requesting funds to re-measure variables other than vegetation, fuels or soils will not be considered. For comparison purposes, proposals may

include funding for remeasurement of non-fire and control treatments when part of the original study design.

Planned remeasurements must be at least five years since the initial measurement. The JFSP Governing Board is particularly interested in longer term responses (> 10 years), or remeasurement of studies that include repeated burning treatments.

Proposals must include evidence that the plots have not been disturbed since the last measurement in any way that could substantially affect the validity of the results.

Proposals requesting funds to re-measure variables not previously measured will not be considered.

Proposals must respond to a need to re-measure variables that will not otherwise be re-measured as part of a regular, ongoing measurement program, and must clearly state the added value to be obtained from re-measurement. Proposals should discuss potential management applications and uses of remeasurement results.

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 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.** This publication must be referenced and attached to the proposal.

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 how data will be combined for comparative analysis.

2. Non-Forest and Understory Fuels Growth, Response and Succession

Shrub and grass fuels drive fire behavior and effects over vast areas of non-forested land in the United States, and contribute significantly to surface fire behavior and effects on many forested lands. Nevertheless, these fuels have received comparatively little attention and investment as compared to tree fuels. The need to accurately evaluate and model shrub, grass and understory fuels is increasing as expectations for quantitative risk assessments grow, and the infrastructure, habitat, recreational and other values on these lands are increasingly recognized.

The Joint Fire Science Program (JFSP) is developing the Interagency Fuels Treatment Decision Support System (IFT-DSS, http://frames.nbii.gov/ift-dss) as a software integration framework to support prescribed fire and fuels treatment planning. IFT-DSS is designed to accomplish several tasks, including prescribed burn planning, fuels hazard assessment, fuels treatment location and effectiveness, and risk assessment. IFT-DSS relies on the Forest Vegetation Simulator (FVS, http://www.fs.fed.us/fmsc/fvs/) to project forest conditions into the future in response to succession and forest management, including fuels treatments.

Shrubs, grasses and forbs are poorly represented as understory components in forested stands in FVS, and non-forested communities are currently not modeled in FVS. JFSP is interested in

supporting research to improve representation of understory components in forested stands in FVS; to develop growth, response and succession models for non-forested stands for use in FVS; and to provide information to support FVS Fire and Fuels Extension (FFE) which links FVS with models of fire behavior, fire effects, and fuel loading.

JFSP invites proposals that collect new field data that can be used to develop or improve shrub and grass growth, response and succession models, both on non-forested lands and as components of forest fuelbeds. Results can be in the form of vegetation and fuelbed characterizations, or in the form of computational models. Proposals submitted in response to this task statement must address at least one of the following questions:

- How do understory and non-forested communities vary along post-fire successional trajectories in the absence of disturbance or management treatment?
- How do changes in understory and non-forested communities through succession affect fire behavior and fire effects?
- How does fire singly or in combination with domestic grazing alter growth, response and successional patterns?
- How do invasive species or a changing climate affect growth, response and successional patterns of understory and non-forested communities?
- How can spatial and temporal variation in understory and non-forest growth, response and succession be best represented in computational models, such as those used in FVS?
- How do understory responses vary along overstory density gradients?

Work funded under submitted proposals must yield quantitative estimates of understory and non-forest fuel growth, response and succession, and should be further defined by specific factors that influence fire behavior and effects, e.g., native perennial grasses, exotic perennial grasses, and annual grasses. Fuel estimates should be sufficiently detailed to accurately represent the complexity of the fuelbed for fire behavior modeling. Quantitative results and computational models should be in a form suitable for incorporation into FVS.

JFSP is not interested in funding new software systems or user interfaces for immediate application by field users. Computational models developed or evaluated through submitted proposals must use independent data sets to evaluate model performance.

3. Fuel Treatment Effectiveness

A wide variety of interacting factors influence fuel treatment effectiveness, including treatment type, intensity, size, frequency, season, age, and site conditions. Even though there has been an increase in the number of studies examining fuel treatment effectiveness over the last 10 years, our understanding of how treatment regime influences effectiveness remains superficial, even in well-studied systems. Given that substantial resources are invested in fuel treatments, it is imperative that managers have confidence that fuel treatments are effective in meeting treatment objectives.

The Joint Fire Science Program (JFSP) is soliciting proposals that evaluate the effectiveness of fuels treatments and have a high likelihood of producing information useful to managers. All proposals submitted under this task statement must directly address at least one of the following topics:

- *Treatment effectiveness* – How effective are fuel treatments at meeting fire behavior objectives? How is treatment effectiveness influenced by treatment type, intensity, and season? Proposals should clearly demonstrate the ecosystem-specific knowledge gaps addressed by the proposal.
- *Treatment longevity* – How long are treatments effective at meeting specified fire behavior objectives? What are treatment effectiveness decay rates, and how do they vary by fire behavior objective? What re-treatment intervals are needed to maintain desired fire behavior? How does repeated burning affect tree physiology and susceptibility to bark beetles?
- *Treatment costs* - What are the costs associated with different treatment types and re-treatment intervals? What are the least-cost re-treatment intervals to meet fire behavior objectives?
- *Effectiveness metrics* – What measures of fire behavior or ecosystem response are most useful as indicators of treatment effectiveness? What are the most economical ways to measure these indicators? How can treatment effectiveness best be monitored?

Data may be used to test or improve computational models, but JFSP is not interested in funding new software systems or interfaces. Improved models should be delivered as modules suitable for inclusion in the Interagency Fuels Treatment Decision Support System (IFT-DSS, http://frames.nbii.gov/ift-dss).

Proposals that examine a range of environmental conditions and vegetation types are desired, as are comparative studies of recent fires and investigations of less-studied systems.

4. Cultural Resources and Fire

Federal and state historic preservation laws require land management agencies to consider the effects of fire and fuels management actions on cultural resources, including responses to unplanned ignitions. While our understanding of cultural resource impacts related to fire has increased greatly over the past two decades, significant knowledge gaps remain. This is due in part to the complexity of the wildland fire environment, but also due to the diversity of cultural resources. As a result, responsible agencies have adopted a wide continuum of management approaches, often with uncertain effectiveness.

The intent of this task statement is to promote a better understanding of how wildland fires and fire management operations affect the preservation of cultural resources. Results from this research should help identify the types of cultural resources and their in situ environments at greatest risk from wildland fire and fire management activities so surveys, planning, fuels treatments and other activities can be focused in those areas.

The Joint Fire Science Program (JFSP) invites proposals that support improved management of cultural resources and fire. All proposals submitted under this task statement must address at least one of the following questions:

- What are the impacts of wildland fires or wildland fire management activities on different types of cultural resources? How do these effects vary by fire intensity and artifact type?
- What types of ecosystems and environmental conditions increase the vulnerability of cultural resources to fire? How can these conditions be best mitigated?
- How does heat transferred directly or indirectly into the soil affect belowground cultural resources?
- How does repeated burning influence cultural resources, and how do the effects vary based on fire intensity? How are the properties of different types of cultural resources affected?
- How do the effects of prescribed fires differ from the effects of wildfires?
- What are best management practices for wildfire and prescribed fire activities surrounding cultural resources, and how have they been assessed and verified?

JFSP is interested in proposals that could be used to develop field guidelines for acceptable fire behavior parameters for various cultural resources. Proposals could include laboratory or field experiments that directly measure heat release and transfer to proxy materials to determine fire effects on cultural artifacts, or comparative retrospective case studies that examine the relative influence of fuel types, loading, and treatments on fire behavior and effects to cultural resources.

The JFSP Governing Board is particularly interested in proposals that include strong collaboration with fire and cultural resource management specialists, and clearly articulate outcomes that support management needs. Proposals should include activities planned in partnership with members of the JFSP Knowledge Exchange Consortia (http://www.firescience.gov/JFSP_Consortia.cfm) to improve understanding and communications among tribes, managers, researchers, and state historic preservation offices. Activities could include webinars, roadshows, training sessions, workshops or other activities.

5. Verification of Fire Weather Forecasts

The Joint Fire Science Program (JFSP) is seeking proposals to establish and test methodologies for verifying fire weather forecasts. Each year, nearly 20,000 spot fire weather forecasts are issued by National Weather Service (NWS) offices and by incident forecasters. Despite these forecasts' widespread tactical use and direct impact on wildland fire operations, there are no established verification methodologies for these types of forecasts. Lack of objective forecast verification statistics makes it difficult for end users to develop confidence in fire weather forecasts, and hinders application of appropriate weather-driven criteria in fire management. Routine use of forecast verification results could significantly improve the accuracy of localized fire weather forecasts.

Spot forecasts are based on meteorological data stored in the National Digital Forecast Database (NDFD) and adjusted based on historical patterns, local conditions, and local weather observations. The NDFD data are derived from atmospheric models run on a continental or hemispheric scale and adjusted by NWS forecasters. The NDFD stores data on a 5 km grid (contiguous 48 states) with a standard update every 12 hours.

JFSP is interested in proposals that assess the degree of improvement provided by spot and incident fire weather forecasts as compared to NDFD forecasts, and provide a methodology to

verify fire weather forecasts nationally. Proposals can address spot fire weather forecasts issued by NWS offices or forecasts issued by incident meteorologists for Incident Action Plans. Proposals may either collect new data or analyze existing data, such as that provided by the Real Time Mesoscale Analysis (RTMA).

Proposals should address at least two of the following questions:

- How accurate are spot and incident forecasts as compared to observed conditions, weather persistence, or climatological norms?
- Are there certain types of weather events or environmental conditions that are more prone to forecast error?
- How can the impact of observation, analysis, or model errors be quantified to provide measures of forecast confidence for the user?
- How can verification processes incorporate a spatial component to help managers identify geographic areas that may have higher or lower levels of confidence associated with them?
- How can verification of fire forecasts be used to improve future forecasts?

The goal of this task is to improve accuracy in spot and incident forecasts for wildland fire through development of a framework and methodology for verifying fire weather forecasts. The primary deliverable is a verification methodology that NWS could implement into forecast operations. Ideally, NWS forecasters would have access to on-demand verification of their spot and incident forecasts in an organized web interface such as that already established through the NWS Performance Branch (https://verification.nws.noaa.gov/). Verification methodology would also be made available to incident meteorologists, Geographic Area Coordination Center meteorologists, and others needing access to fire weather forecasts.

6. Compatibility of Fuels and Fire Management with Conservation of Threatened and Endangered Fish and Wildlife Species

The Joint Fire Science Program (JFSP) is soliciting proposals that investigate the compatibility of fire and fuels management activities with habitat and population restoration of wide-ranging federally listed or candidate threatened and endangered (T&E) fish and wildlife species. T&E species frequently occur in areas intended for fuels management or in areas affected by wildfire, necessitating close coordination of fuels and fire management activities with T&E habitat and population conservation plans. JFSP seeks research that could be used to improve the effectiveness of T&E conservation guidelines affecting fire and fuels management.

Investigators should include provisions both for collection of new data on the effects of fuels management, fire, or fire management activities on T&E habitat or populations, and for demonstration of how these data can be incorporated 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. Such analyses can be conducted at local treatment unit scales, such as to address fuel treatment effects or perceived conflicts with burn prescription windows, or across larger landscapes. Landscape assessments should assess trade-offs among short-term actions and long-term responses, and 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:

- How can habitats be sustained across broad landscapes that experience fire, particularly in areas that have experienced increased fuel loads from past fire suppression?
- Where and when on the landscape should fuel or fire management activities be planned to maintain and improve key habitat features?
- How can prescribed burn season and prescription windows be planned and implemented to minimize negative effects or enhance positive effects to T&E species habitats and populations?
- How does variance in fire severity impact desired habitat features?
- How might the above relationships vary with potential climate change?

Results from interdisciplinary analyses should display the types, levels, intensities and locations of fire and fuel management activities that minimize negative effects or enhance positive effects on T&E species habitat and populations while also meeting fire management objectives.

JFSP is particularly interested in proposals that examine recent large fires, or address multiple listed species.

7. Assessment of Fire Emissions Inventory Tools

The Joint Fire Science Program (JFSP) invites proposals to critically assess satellite and ground based tools currently used to develop emissions inventories of all wildland fires, and, secondarily, for agricultural burning. This work is planned primarily for the United States, but may include an assessment of emissions inventory tools used elsewhere to the extent that results could benefit inventories in the US. Proposed work should also evaluate the quality of current fire emissions inventories generated using these tools.

Fire emissions inventories have multiple purposes and hence different requirements for accuracy and precision. The focus of this solicitation is on emission inventory tools that are of sufficient spatial and temporal resolution to support inventories collected for regulatory purposes, especially for the maintenance of US Clean Air Act National Ambient Air Quality Standards (NAAQS) and development of State Implementation Plans (SIPs). JFSP is also interested in assessing tools used for regional and national inventories of short-lived climate forcers (black carbon, methane, ozone, etc.) and fire contributions to greenhouse gas (GHG) inventories.

The tools used to generate emissions inventories include both top down and bottom up approaches which support both operational decision making applications and retrospective analyses. Bottom up approaches include current fire record keeping, such as ‘ICS-209’ reports and the Fire Emissions Tracking System (http://wrapfets.org/), while top down approaches include SMARTFIRE (http://getbluesky.org/smartfire/) and an array of satellite technologies (http://earthobservatory.nasa.gov/Features/ContributionPollution/; http://activefiremaps.fs.fed.us/; http://www.osdpd.noaa.gov/ml/land/hms.html/) that are being applied to identify and track the progress of wildland and agricultural fires.

Assessments should include objective analyses and statistical measures using existing field data to assess the validity and accuracy of each inventory tool, the comparative skill associated with

each tool/method, and the variability between them. This would include methodologies used for identifying and tracking wildland and other fires, identifying and cataloguing fuels and fuel consumption, and calculating fire emissions. The purpose of this work is to provide understanding of how fire smoke emissions inventory is accomplished, and with what accuracy and reliability. Considerations should be comprehensive including smoke emissions that contribute toward NAAQS, NAAQS precursor, and GHG and inventories for short-lived climate forcing factors.

The proposal should describe the methods planned to create each of the following products:

- An assessment of the quality, accuracy and reliability of ground-based, aircraft-based and satellite-based emissions reporting with suggestions for improvement
- A catalogue of wildland fire emissions systems including a technical description of each system
- An archive of algorithms used for calculating emissions and the data inputs they require, along with a discussion of data accuracy requirements for each system
- An objective comparison of fire emissions calculation systems using at least two test data cases**,** including analysis of the temporal characteristics of the emissions calculations
- An economic review of the costs of smoke emissions reporting and the cost effectiveness of current systems
- An economic and organizational science assessment of improving fire emissions reporting, including potential gains in efficiencies and cost effectiveness from suggested measures

Investigators should consult with the Smoke and Emissions Model Intercomparison Project (SEMIP; http://www.semip.org/) for potential datasets and analysis protocols.

This solicitation is a component of the JFSP Smoke Science Plan (SSP; http://www.firescience.gov/JFSP_Smoke.cfm) and, as such, investigators should plan to participate in various communication and coordination activities with other SSP investigators and smoke managers or regulators. For example, investigators may be asked to participate in conference calls, workshops or webinars to discuss or present interim results and planned activities.

8. Assessment of Prescribed Fire Contributions to PM2.5 and PM10 Standards

The Joint Fire Science Program (JFSP) invites proposals to determine the impact of prescribed fires on the attainment and maintenance of 24-hour and annual National Ambient Air Quality Standards (NAAQS) for particulates (PM2.5 and PM10). EPA is currently reviewing particulate matter (PM) standards and recently (April, 2011) published their analysis (http://www.epa.gov/ttn/naaqs/standards/pm/data/20110419pmpafinal.pdf). This analysis suggests how the PM NAAQS are anticipated to change in the current review period. In essence, the agency is recommending lowering the annual PM2.5 standard to between 11-12 ug/m3 and maintaining the 24-hour standard at its current level.

Proposed work should quantify the contributions from prescribed fires to ambient levels of fine particulates using tools and procedures similar to those currently used by federal, state and local air agencies in developing State Implementation Plans (SIPs). Regional air quality models and data analysis tools, as well as smaller scale tools and analyses, may be used to identify the

incremental contribution of seasonal and regional prescribed fire activities. Modeling and analysis results must demonstrate their accuracy in comparison with fine particulate measurements from regulatory data (EPA and states) and other appropriate data sets. The study should focus on at least four representative locations (counties) across the US anticipated to have difficulty meeting the new standards. A wide array of potential meteorological conditions, such as might typically be experienced in a multiyear period, must be considered in order to provide a realistic estimate of fire contributions.

Proposed work should also use results from the above analyses, ambient data, and any other available information to produce a ranked order of locations where prescribed fire emissions will have the greatest potential to challenge attainment and maintenance of anticipated new fine particulate standards. Investigators should consult with local forest and fire managers to assess a reasonable range of alternative future prescribed fire scenarios based on historical patterns, current plans, and anticipated future prescribed fire activity levels including consideration of possible alternative fuel treatment options.

Responsive proposals should include:

- Documentation of the emissions inventory and calculation methodologies that will be used in the modeling, including details of how the data are collected, the various categories of fire included in the inventory, fuel and consumption models, and relevant dates of the data utilized
- Documentation of any computational model(s) planned for use, especially for aerosol chemistry, including identification of model parameter details
- Documentation of the monitoring data planned for use and the procedures planned to identify likely attainment and non-attainment areas

Proposals need to clearly demonstrate the capability to produce a ranked list of locations where prescribed fire will have the greatest impact on current and anticipated primary and potential secondary particulate matter NAAQS.

This solicitation is a component of the JFSP Smoke Science Plan (SSP; http://www.firescience.gov/JFSP_Smoke.cfm) and, as such, investigators should plan to participate in various communication and coordination activities with other SSP investigators and smoke managers or regulators. For example, investigators may be asked to participate in conference calls, workshops or webinars to discuss or present interim results and planned activities.

C. Budget and Funding Policy

1. Funding Cooperator

Proposals may require a funding cooperator. See Section III.B above.

2. 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. Indirect rates for JFSP proposals are limited to a maximum of twenty (20) percent of the direct costs. The maximum indirect rate that a funding cooperating institution may charge for pass-through costs is ten (10) percent. Proposal with indirect rates higher than (20) percent will not be considered. Proposals funded

through a federal funding cooperator must reflect either the prevailing indirect rate for the cooperating federal agency or the JFSP maximum limit of (20) percent, whichever is less.

3. 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 institution 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 budget contact to determine if this applies to your proposal.

4. 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 full time equivalent (FTE) for the permanent position for which salary funding is requested. The justification must be signed by the supervisor of the individual requesting salary.

You must use the format found on the attachments tab 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 part-time, temporary, term employees, post-doctoral employees, graduate, or undergraduate students. Stipends are normally funded, but tuition fees will not be funded.

D. Additional 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 – Proposals 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 JFSP database login and password 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 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 JFSP proposal submittal system will not allow proposals to be submitted after the closing date and time.

2. Contacts – Proposals may be required to have the following contacts (see "Definitions") assigned to a proposal:

- Principal Investigator (required, only one Principal Investigator can be assigned)
  - PI institution will receive funding from JFSP and will be responsible for processing sub-awards to cooperating institutions, unless a federal cooperating agency is receiving funds.
- Funding Cooperator (may be required, see Section III.B. funding cooperator)
  - It is the PI's responsibility to ensure a funding cooperator is listed as a contact on the contacts tab, if necessary.
- Budget Contact (required)
  - Budget contact must be from the institution receiving funds from JFSP. This person is responsible for ensuring the budget is correct prior to proposal being submitted and is able to facilitate the transfer of funds, if necessary.
- Grants and Agreements Contact (required)
  - Grants and agreements contact must be from the institution receiving funding from JFSP. This person must be able to facilitate the receipt of funds and execution of any sub-agreements or contracts necessary if your proposal is funded.
- Co-PIs and collaborators (optional)
  - If the proposal includes Co-PI(s) or collaborator(s) they must be entered on the contacts tab.
- All contacts must be entered on the contacts tab in the JFSP database 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 profiles may take up to 24 hours to be created.
- It is the responsibility of the individual contacts to ensure that the contact information in the JFSP electronic submission system is current and correct, including affiliation, e-mail, phone number and address.

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 by December 16, 2011 you should fax or e-mail your confirmation to Becky Jenison at bjenison@blm.gov or Fax: 208-387-5960 as soon as possible. **If you do not receive this confirmation page you have not submitted your proposal correctly**.

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

Required attachments for all proposals

- Proposal body
- C.V.s (PI: two- page maximum, Co-PI(s): one- page maximum)
- Budget spreadsheet (Excel spreadsheet, includes a separate worksheet for each institution requesting funding)

- Budget narrative (bullet statements explaining specific budget assumptions and costs)

Additional attachments

- Letter(s) of support (optional, but recommended)
- Salary justification (may be required, see below)
- Specific to a task statement (check the applicable task statement for additional requirements)

5. Data Management Plan – All proposals are required to submit a Data Management Plan (DMP) using the instructions, template, and example provided. It is the intent of the Joint Fire Science Program (JFSP) that all data collected or generated through JFSP funds are of high quality and made freely available to others within a reasonable time period. JFSP recognizes that preparation of data and metadata for publication is a time consuming process. Adequate funds to support this work should be included in proposal budgets.

DMPs must be attached as a separate document and are limited to two pages maximum. DMPs will be considered in the proposal review process, but there are no explicit review criteria for DMP adequacy at this time. All proposals tentatively selected for funding will be further reviewed for DMP quality, and revisions to the DMP for selected proposals may be required at that time.

DMPs must contain the following (see DMP template and instructions for further detail):

- Description of data type, scale, resolution and format for all data to be submitted to a data repository
- Steps used to process and quality assure the data
- Specific data repository intended for long-term data storage
- Metadata language used to describe the data
- Provisions for data access and necessary limitations to protect sensitive data

For modeling studies, only data generated for model input should be included in the DMP.

All collected or generated data should be evaluated for errors, and subjected to data proofing and validation procedures.

Investigators must select a data repository well suited for long-term archival, publication, and data sharing of data collected or generated through JFSP funding. JFSP recommends use of the Forest Service R&D data archive (http://www.fs.usda.gov/rds/archive/Default.aspx). If you would like to discuss the archive's services, please contact archivist Dave Rugg (drugg@fs.fed.us) or associate archivist Laurie Porth (lporth@fs.fed.us).

Submission of data sets and metadata will be required at the time of final report submission. JFSP will review the data and metadata to ensure that all required information is provided (including a pointer in the metadata to the location of the data). After successful review, the metadata will be provided to the Forest Service R&D data archive (http://www.fs.usda.gov/rds/archive/Default.aspx), which will provide the central metadata catalog for all JFSP projects. **The PI is responsible for keeping the metadata in the official catalog current over time.**

PIs can limit release of data sets for up to two years following submission of the final report. At the end of this period, all data sets will be made publicly available. All extensions of this deadline require extenuating circumstances and approval by the JFSP Program Manager.

JFSP highly recommends you attend one of the following webinars that explain the data management plan:

- Wednesday October 12, 2011 at 1300 MDT
- Thursday October 27, 2011 at 1200 MDT
- Tuesday November 8, 2011 at 1100 MDT
- Monday November 14, 2011 at 1000 MDT

Information and link to attend webinar and conference call
Webinar link: https://www.livemeeting.com/cc/usda/join?id=DCH5C9&role=attend
Teleconference: 1-866-904-5334, passcode: 2762031

6. Budget – Budget summary numbers must be input in the JFSP database on the budget tab. The budget detail must be attached on the attachments tab using the spreadsheet template provided. Proposals cannot be submitted without completing these required fields and attachments.

Budgets must be reviewed by your budget contact to ensure all costs have been included and the budget is correct. JFSP will not provide additional funds to cover errors discovered after the proposal submission deadline.

7. Task Statement Intent – 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 for the correct task statement.

8. Format – Proposals not following the required template will not be considered. Proposals must use an 11 point font or larger. Additional guidance is included in the beginning of each template.

9. Page Limits – Attachments exceeding the page limit cannot be submitted. Page limits may vary by task statement and attachment; check the page limit in the template and JFSP database for each specific task statement.

10. 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.

11. Signatures – Handwritten signatures are not required. When Principal Investigators (PIs) submit proposals they will be prompted to input their password. By typing in the password and submitting a proposal PIs are certifying that all contacts on the proposal have reviewed the proposal and understand what their role requires.

12. Indirect Costs – JFSP will not consider proposals asking for more than 20% indirect costs and/or more than 10% pass-through costs. Pass-through costs are for administrative costs for the PI or funding cooperator institution to administer sub-agreements. These same indirect rate caps will be applicable to proposals funded through cooperative agreements that require a second posting on Grants.gov.

13. 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.

14. Support Letters – Support letters are encouraged, but not required. Support letters are useful if they show understanding of the proposed work and the author articulates how the work will benefit them. Support letters that appear to be ghost-written by the PI or are form letters are much less useful. If submitted, letters must be attached on the attachments tab. Support letters sent by hard copy or email directly to JFSP will not be considered.

15. 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. 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 on the attachments tab.

16. Past-Due Projects – No proposals will be considered if the work includes 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

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 – funding decisions
4. Statistical Review (optional) – Adequacy of study design and analysis methods

Review Criteria

Note: Review criteria are not arithmetically scored or weighted. However, applicants should note that the technical merit criterion is given particular attention. Proposals that do not receive strong technical merit reviews are unlikely to be funded.

Relevancy

- Does the proposal directly address the relevant task statement?
- Importance of the proposal to the land management community.
- Importance of the proposal to the science community.

Technical Merit

- 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?
- Do the investigators collaborate with any of the regional JFSP Knowledge Exchange Consortia? (if applicable)

Feasibility

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

SECTION VI. DEFINITIONS

Request for Applications (RFA): The official label for the 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.

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. In addition the PI is responsible for communicating and coordinating with Co-PIs and others on the research team. The PI is responsible to JFSP for completion of the project.

Funding Cooperator: The funding cooperator receives from funds from JFSP and is responsible for distributing funds to other cooperators. A funding cooperator is only required if the PI is non-federal and a federal institution is requesting funding, if the work is being completed through a private business, or has international funding. The funding cooperator is responsible for coordinating with the PI, the grants and agreements contact, and the budget contact on administrative activities for this project. The funding cooperator will be one of the primary contacts for the project and should stay informed and involved in project activities.

Budget Contact: Budget person from the institution receiving funds from JFSP that is responsible for ensuring budget detail is correct and agrees to receive funds if a proposal is selected for funding. If a federal agency is requesting funds the budget contact must be from the federal cooperating agency.

Grants and Agreements Contact: Person from institution receiving funds from JFSP that is responsible for facilitating the receipt of funds and the execution of any agreements or contracts necessary for a proposal if it is selected for funding. If a federal agency is requesting funds the grants and agreements contact must be from the federal cooperating agency.

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

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 Exchange and Application: The exchange 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. Collaboration with the regional JFSP Knowledge Exchange Consortia is recommended.

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