INL/EXT-16-39942

Idaho National Laboratory

Nuclear Science User Facilities

MY NSUF Quick Guide

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September 26, 2016

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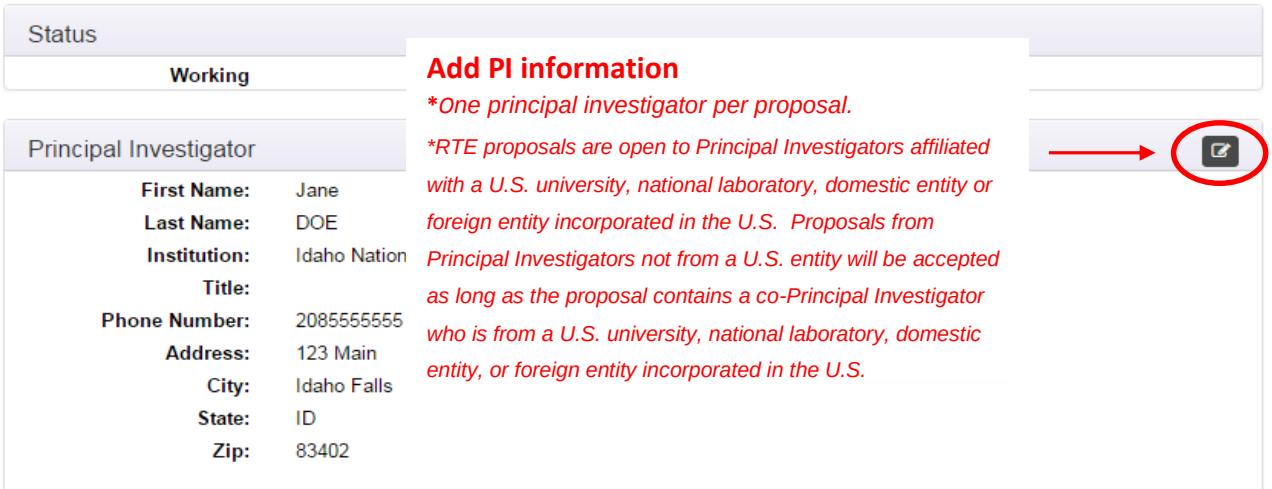
Contents

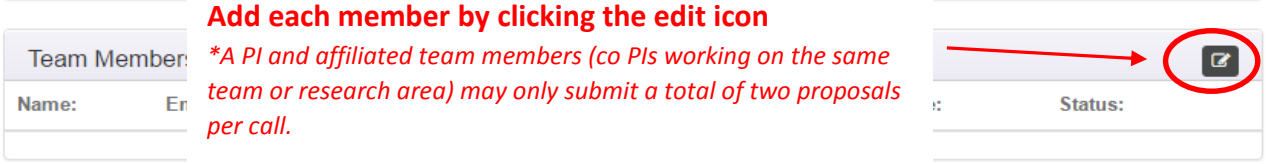
Please send questions or suggestions regarding My NSUF Quick Guide to Kelly.Cunningham@inl.gov.

My NSUF Quick Guide

Create Proposal for Open Call

*Indicates NSUF RTE guidelines





Experiment Details

Experiment Title

New Proposal

Describe the work that you are proposing in detail. Please include as many specifics as possible (e.g., dose, dose rate, ion energy, types of ions, beam line x-ray energy, irradiation temperature, analysis temperature, atmosphere, etc.):

Work Description

Identify all equipment and instrumentation necessary to the performance of this experiment:

Equipment Description

Partner Facilities:

- [ ] University of Wisconsin Tandem Accelerator Ion Beam / Characterization Laboratory
- [ ] University of Michigan Ion Beam Laboratory (MIBL)
- [ ] Massachusetts Institute of Technology MITR Nuclear Reactor Laboratory
- [ ] North Carolina State University PULSTAR Reactor
- [ ] Oak Ridge National Laboratory HFIR / LAMDA
- [ ] Pacific Northwest Laboratory Radio Chemical Processing Laboratory
- [ ] Purdue University IMPACT LAB
- [ ] University of California-Berkeley Nuclear Materials Laboratory
- [ ] University of Nevada Las Vegas Radiochemistry Laboratory
- [ ] Westinghouse Materials Center for Excellence
- [ ] Center for Advanced Energy Studies – MaCS
- [ ] Illinois Institute of Technology MRCAT at Advanced Photon Source
- [x] Idaho National Laboratory PIE Facilities
- [ ] Intermediate Voltage Electron Microscopy Tandem Facility (IVEM)

*One facility per proposal

Describe what data or images will be produced:

Data Description

Facilities Available for RTEs

Microscopy and Characterizaton Suite (MaCS) at the Center for Advanced Energy Studies

- **Focused Ion Beam with EDS/EBSD/Omniprobe**
- **Local Electrode Atom Probe (LEAP)**
- **Nano Indenter Atomic Force Microscope**
- **Scanning Electron Microscope with EDS/EBSD/CL**
- **FEI Technai TR30-FEG ST win STEM**

Other Facilities Available for RTEs

- **Beamline**
- **Post-irradiation Examination**
- **IVEM**
- **High-performance Computing**
- **NSLS II X-Ray Powder Diffraction (XPD) Beamline (only)**

Indicate how many specimens will be examined:

**Limited time and funding, depending on facility, allow for only a small number of samples, historically < 9 is optimal.*

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☑ **Specimens / samples are listed in the Fuels and Materials Library**

Please provide the following:

The Nuclear Fuels and Materials Library can be found in the NEID Infrastructure database.

Experiment ID:	08-139
Material Description:	TEM samples
KGT Number:	1234
Location:	HFEF

Describe any specimen preparation that will be required from the facility where the experiment will be performed:

None

Estimate the instrument time needed to perform the experiment:

- ***FIB time is limited to six days in a 6-month period (no more than two consecutive days at a time). Maximum of four days in a month.***
- ***All other instruments are limited to a maximum 10 days (combined, not per instrument) in a six-month period with no more than three (two days for TEM) consecutive days at a time.***

Describe any special requirements for the performance of this experiment (i.e., material needs to be obtained from an outside source):

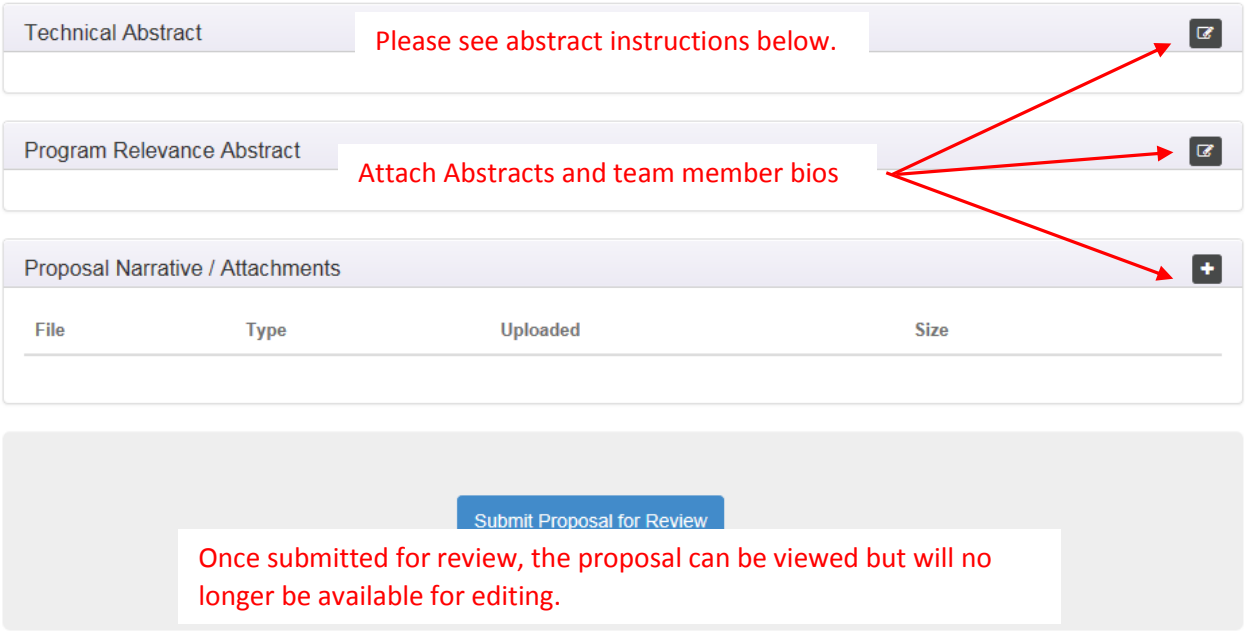
None

On what timeline would you like this research performed?

**All awarded RTE instrument time must be scheduled within three months of award. Awarded RTEs must be completed within nine months of the date of the award.*

Are the experiment samples irradiated?

**Work is limited to irradiated materials (neutron, charged particle, nuclear fuel), with the exception of ion beam irradiations.*



Technical Abstract:

Limit Technical Abstract to 500 words.
Please describe the project objectives including methods to be employed, and the potential impact to the state-of-the-knowledge if the research is successful. The abstract must also indicate the expected period of performance.

Program Relevance Abstract:

This is intended to be a blind narrative. Please do not identify the university(s) involved or list names of PIs or collaborators. Limit Program Relevance explanation to 500 words.

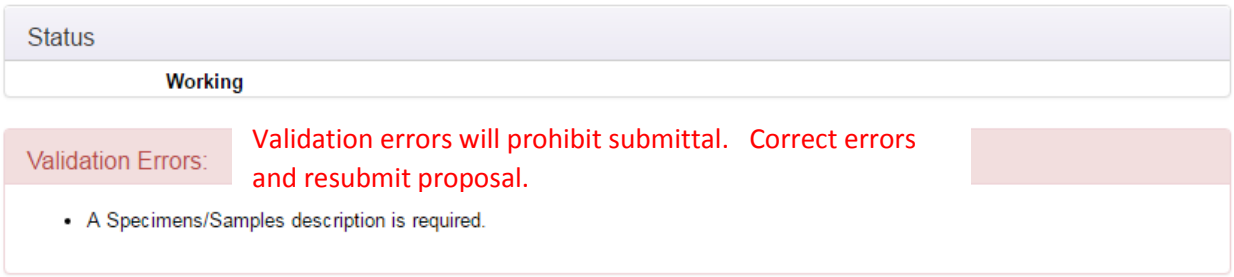
The programmatic relevance abstract should describe how the proposed research advances DOE's nuclear energy agenda. The programs funded by the Office of Nuclear Energy have the following two Program Goals:

> Develop new nuclear generation technologies – that foster the diversity of the domestic energy supply through public-private partnerships that are aimed in the near-term (2015) at the deployment of advanced, proliferation-resistant light water reactor and fuel cycle technologies and in the longer-term (2025) at the development and deployment of next-generation advanced reactors and fuel cycles.
>
> Maintain, enhance, and safeguard the Nation's nuclear infrastructure capability – to meet the Nation's energy, environmental, medical research, space exploration, and national security needs.

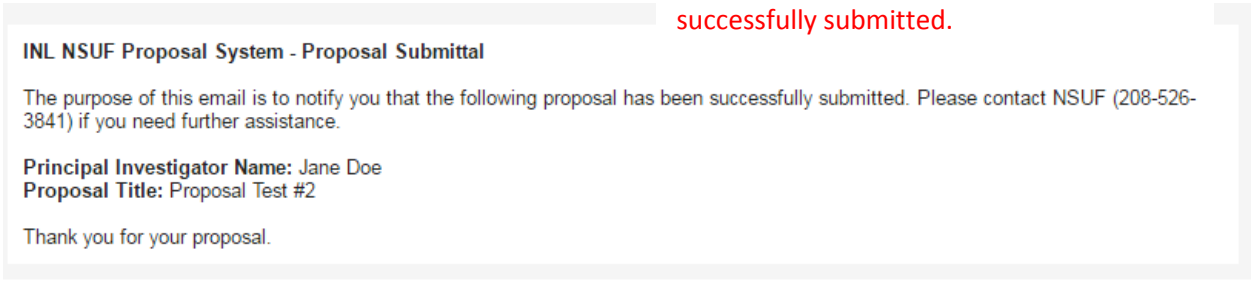
Information on the Advanced Fuel Cycle Initiative, Next Generation Nuclear Plant, Light Water Reactor Sustainability Program, and the Generation IV Nuclear Energy Systems Initiative may be found on the Office of Nuclear Energy Web Site at http://www.nuclear.gov.

Proposal Narrative/Attachments:

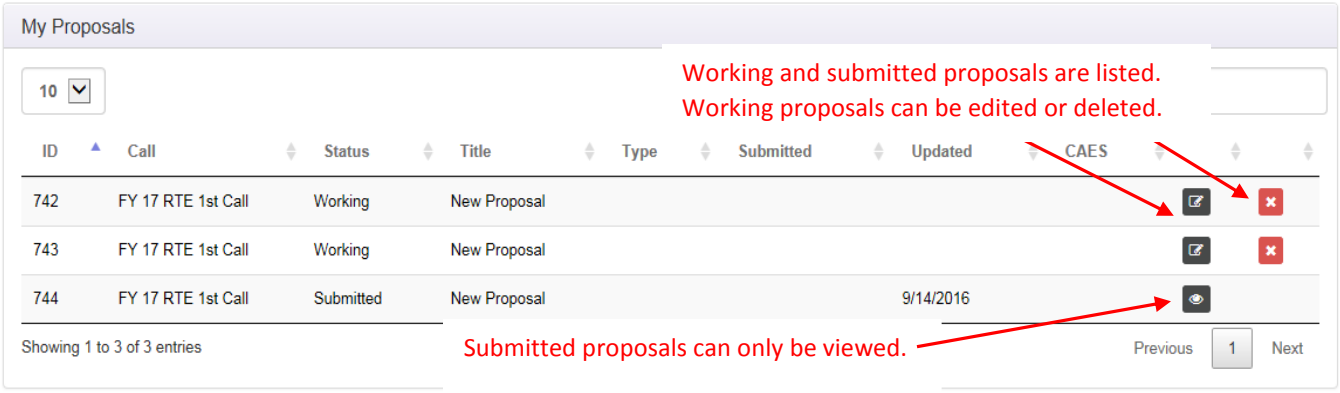
Upload the following files: the proposal narrative, including graphics should be no more than 2 pages total (font size of 10 or more). The bibliographic sketch for the principal investigator, and co-investigators should be limited to 2 pages each. Each file must be in PDF format and should not exceed 8 MB in size. The proposal narrative should define the project objectives and significance, how the research would contribute to the state-of-the-knowledge in the field, why the methods proposed are optimal for achieving the results, the resources needed to perform the research, and the capabilities of the principal investigator and key team members/collaborators. It should also explain how each team member/collaborator will be participating. The biographical sketch is limited to two pages for the principal investigator and should include educational background, research and professional training, publications and synergistic activities.



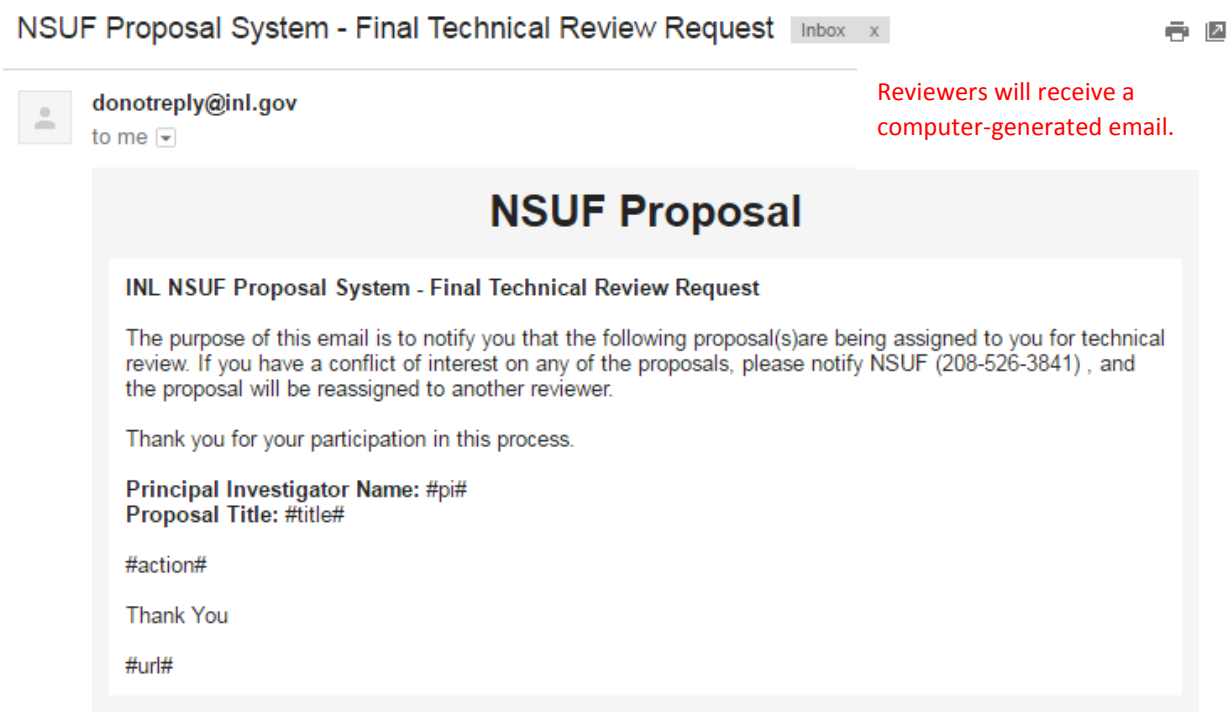
An electronically-generated email will be sent to the proposer when the proposal is successfully submitted.

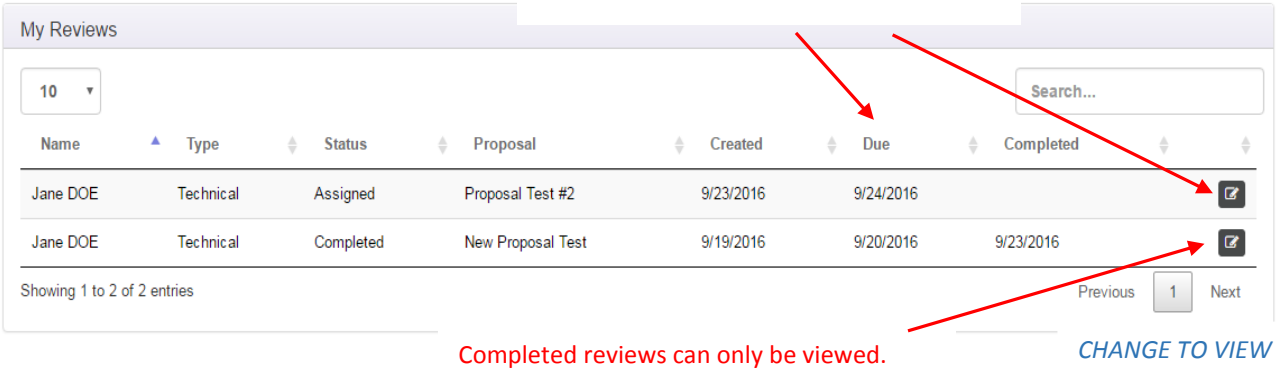


My Proposals



My Reviews


NSUF Proposal System - Final Technical Review Request
Inbox x
donotreply@inl.gov
to me
Reviewers will receive a computer-generated email.
NSUF Proposal
INL NSUF Proposal System - Final Technical Review Request
The purpose of this email is to notify you that the following proposal(s)are being assigned to you for technical review. If you have a conflict of interest on any of the proposals, please notify NSUF (208-526-3841) , and the proposal will be reassigned to another reviewer.
Thank you for your participation in this process.
Principal Investigator Name: #pi#
Proposal Title: #title#
#action#
Thank You
#url#


Working and completed reviews are listed. Working reviews can be edited.
My Reviews
10
Search...
Name
Type
Status
Proposal
Created
Due
Completed
Jane DOE
Technical
Assigned
Proposal Test #2
9/23/2016
9/24/2016
Jane DOE
Technical
Completed
New Proposal Test
9/19/2016
9/20/2016
9/23/2016
Showing 1 to 2 of 2 entries
Previous
1
Next
Completed reviews can only be viewed.
CHANGE TO VIEW ICON

Open Proposal For Review

Proposal will open in a new tab.

Scientific Merit (50%)

Edit each section to input review comments and scores.

This criterion includes the importance of the scientific or technological need addressed in the proposal as well as the innovation and validity of the approach described to meet that need. Consider such aspects as the influence that the characterization might have on the future direction, progress, and thinking within the area of science and technology; the likelihood of achieving valuable results; and the scientific innovation and originality indicated in the proposed research.

- Does the proposal describe a logical approach in applying materials characterization to solve a technological problem and/or provide new scientific knowledge?
- Does the proposal demonstrate a high degree of innovation or is substantially similar work being pursued elsewhere?

Score: 0.0 50 points available.

Technical feasibility (30%)

This criterion provides an assessment of the risk that the proposed research tasks may not be accomplished. The reviewer should take into account the present state-of-the-art as well as the capabilities and expertise that would be provided by the NSUF User Facility. A low probability that the requirements of the project can be met using all available knowledge and existing NSUF facilities dictates a low score on this criterion. The highest scores should also reflect the most effective utilization of capabilities at the NSUF User Facility.

Based on background information presented in the proposal, in relevant literature, and from your own knowledge of the field, is it reasonable to expect that the proposed tasks can be completed successfully?

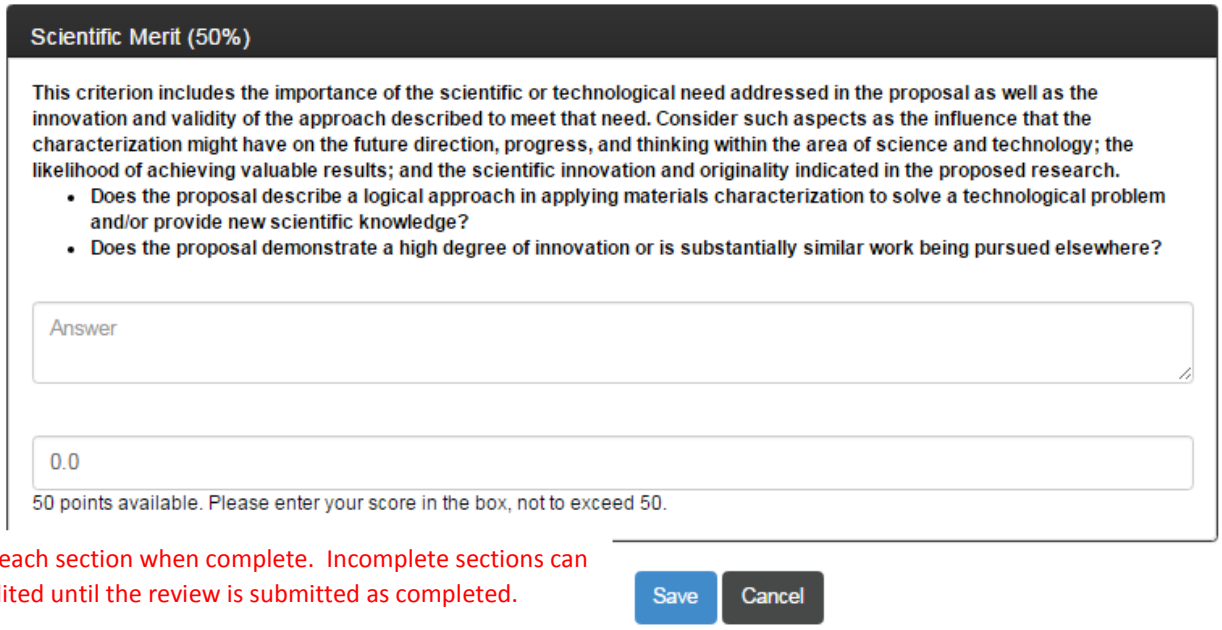
- Is there a potential showstopper that has not been addressed?
- Will the present capabilities and expertise at NSUF be adequate to perform the required tasks? (Please see the Feasibility Review provided by NSUF staff for help on this question.)
- Do the proposed tasks use capabilities at the NSUF that are not widely available?

Score: 0.0 30 points available.

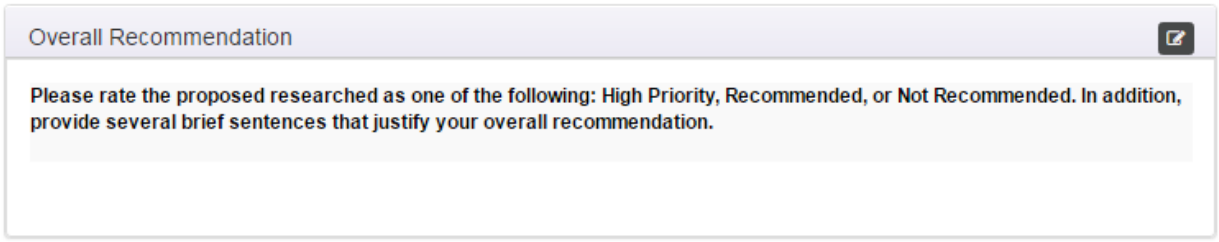
Capability of group (20%)

This score should include consideration of the background, past performance, and/or potential of the principal investigator, and the research environment and facilities that will be provided by the PI and co-PIs. The research potential and background should be weighted more heavily for a junior investigator who may have a more limited track record.

- Does the PI have a background that is appropriate for leading the proposed collaboration?
- Does the assembled research team have expertise in all of the key areas needed to achieve the project objectives?
- Does the group publish regularly in highly regarded, peer-reviewed journals?



Save each section when complete. Incomplete sections can be edited until the review is submitted as completed.



Entire review can be edited until it has been submitted as complete.