NATIONAL SCIENCE FOUNDATION
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Frequently Asked Questions (FAQs) for NSF 15-607, Revolutionizing Engineering anc Computer Science Departments (RED)

1. What are the goals of the RED program?Á
2. How do we know if our idea is revolutionary?Á
3. What is the difference between the research and evaluation components? What are the differencesÁ among the roles of the social scientist, the engineering education expert, and the evaluator?Á
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7. Does the PI have to be the department chairÁ
8. Is an external evaluator required?Á
9. I prepared a letter of intent for the RED program. Unfortunately, it looks like I forgot to hit theÁ submit button. I have since submitted the LOI (after the deadline) and received anÁ acknowledgment that it has been received. May we proceed with the proposal submission?Á
10. A project team from my institution submitted a Letter of Intent (LOI), but due to unforeseenÁ circumstances, will not be able to submit the full proposal. Would it be acceptable to submit aÁ proposal different from the one described in the LOI? Can we replace the original LOI?Á
11. When we logged in to FastLane and created the Letter of Intent (LOI) there was no place to inputÁ some of the information that is required, nor does there appear to be a place to upload a documentÁ containing the required information. How are we to upload all of the required information?Á
12. Can we have additional people in the list as partners and collaborators, or would that beÁ considered part of the "other Sr. personnel" limit of 4?Á

1. **What are the goals of the RED program?**

   RED aims to fund engineering and computer science programs that can serve as exemplars to other institutions in how to make major changes to their undergraduate programs. The ultimate goal is to provide students with education that leads to both deep disciplinary knowledge and a broad set of professional skills.

2. **How do we know if our idea is revolutionary?**

   Revolutionary means radically or completely new; producing fundamental, structural change; or going outside of or beyond existing norms and principles. If an approach has been used elsewhere, even if it is new to your program, it is likely that it will not be considered revolutionary. An exception would be if your particular context is very different from where the innovation was previously applied, meaning that how it is applied cannot be readily adopted from the previous application. It is the responsibility of the proposers to make the case that the innovation is revolutionary.

3. **What is the difference between the research and evaluation components? What are the differences among the roles of the social scientist, the engineering education expert, and the evaluator?**

   Research refers to the generation of new knowledge that can inform the work of others. Research has three important components that should be aligned: research questions (what you want to know), methodology (how you will know it), and a theoretical framework (how you will understand and explain it). The engineering education expert would conduct research on the education process, while the social scientist would conduct research on the change process. Evaluation is different from research in that its goal is to determine the extent to which the project should be modified to better reach its goals (formative assessment) and the extent to which it has reached its goals (summative assessment).

4. **What is a theory of change?**

   A theory of change is a model that links your desired long-term outcomes to medium- and short-term outcomes and specific activities. Often theories of change are developed using a "backwards" analysis. First you define your long-term outcomes, then you work backwards to determine what medium- and short-term outcomes will lead to the long-term outcomes, and what activities will allow you to accomplish the short-term (and sometimes medium-term) outcomes.

5. **Is it acceptable to submit a proposal that addresses more than one department or a college-wide issue?**

   If the college is small it may be appropriate to submit a proposal that addresses multiple departments or a college-wide issue. The proposal will need to make a convincing case that the PI has the administrative authority to implement the proposed changes, and that the scale and scope are feasible for the funding level and duration proposed. It would also be advisable to include department chairs as co-PIs.

6. **What are some common problems in RED proposals?**

   Common problems, in no particular order, are:

   - A change that is incremental and evolutionary rather than revolutionary
   - Scalability and adaptation are not adequately addressed; the proposal will lead to local change at the proposing institution, but there is no or inadequate consideration of dissemination and adaptation at other institutions
   - Insufficient plans for faculty development
   - Failure to articulate how faculty reward structures would be changed or leveraged to incentivize and motivate participation
   - Inadequate team composition, in particular, failure to include an education researcher with expertise in engineering education and/or inclusion of a social scientist who does not have the appropriate expertise
   - Insufficient institutional commitment
   - Insufficient evidence that the supposed collaborators and partners were actually invested in the project
   - Flaws in the research component of the project, especially in the research design, scope, and methods
   - Poor consideration of diversity and inclusion
   - Unclear connection to professional practice; either professional skills, broadly construed, were not directly addressed in the middle years or only one or two skills were narrowly chosen

○ Not involving professional practitioners in any meaningful way.

7. **Does the PI have to be the department chair?**

   Yes. The intention is that the department chair is responsible for the program and thus is in the position to lead the change process. If your college is small it may be appropriate for the dean to serve as PI. However, other faculty (e.g. an undergraduate coordinator, Associate Chair, etc.) cannot serve as PI.

8. **Is an external evaluator required?**

   No, RED does not require an external evaluator. The type of evaluation you use will depend on the needs of your project.

9. **I prepared a letter of intent for the RED program. Unfortunately, it looks like I forgot to hit the submit button. I have since submitted the LOI (after the deadline) and received an acknowledgment that it has been received. May we proceed with the proposal submission?**

   Because the LOI is required, and was submitted late, the PI will not be eligible to submit a proposal.

10. **A project team from my institution submitted a Letter of Intent (LOI), but due to unforeseen circumstances, will not be able to submit the full proposal. Would it be acceptable to submit a proposal different from the one described in the LOI? Can we replace the original LOI?**

    The proposal submitted must match the Letter of Intent. The original Letter of Intent can be revised/replaced at any time before the 5:00 p.m. deadline on the LOI due date. After that time, the LOI cannot be changed/replaced.

11. **When we logged in to FastLane and created the Letter of Intent (LOI) there was no place to input some of the information that is required, nor does there appear to be a place to upload a document containing the required information. How are we to upload all of the required information?**

    The info required in the LOI should go in the Synopsis field. The 2500 characters should be sufficient for the information requested.

12. **Can we have additional people in the list as partners and collaborators, or would that be considered part of the "other Sr. personnel" limit of 4?**

    You may not have additional people listed. All project personnel need to be included as co-PIs or senior personnel. However, it is expected that the project will engage faculty and others in addition to the project team.