

**National Science Foundation
Research at Undergraduate
Institutions Program (RUI)**

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General Comment: Follow the Guidelines

- Catastrophic consequences
 - CCLI Phase 2 – Multi-institutional
- Creates doubt about attention to detail
- Is your work appropriate to the agency?

General Review Criteria

- Significance – quality of research
- Approach – experimental method
- Innovation – novelty of work
- Investigator – expertise/record in field
- Environment – infrastructure to support work

Components of an RUI Proposal

- Project Summary (1 page)
- Project Description (15 pages)
- Literature References
- Biographical Sketch (2 pages)
- Budget and Justification
- Current and Pending Support
- Facilities and Equipment
- RUI Impact Statement (5 pages)

Project Summary

- Intellectual Merit – 1 paragraph
- Broader Impact – 1 paragraph
 - Education of undergraduates
 - Publications/review articles
 - Talks
 - Patents
 - Collaborations
 - Educational Outcomes of Research

Project Description

- Results of Prior NSF Support
 - Up to five pages
 - Any NSF grant within the past five years
- Keep to a minimum unless directly related to the project in the proposal

Significance of Work

- You need an excellent idea
 - Significant (not low-impact)
 - Exciting
 - Ambitious (but not too ambitious if at an undergraduate institution – convince the reviewers that undergraduates can do the work)
 - Not just a continuation of or derivative of prior work (not incremental)
- Should lead to a long-term research agenda

Reviewers Need Convincing

- A proposal is not a manuscript.
- You are trying to sell someone your ideas and your plan for implementing your ideas
- Explain the significance of your work to the discipline and possibly to society – why your work is important and needs to be done

Experimental Plan

- Well designed – likely to succeed
- Experiments well thought out – will accomplish what you want to investigate
 - Not wishful thinking
 - Not a laundry list
 - Focused and integrated
 - Just enough details
 - Provide plan B if plan A is risky

Literature References

- Insure that the literature references are thorough, but:
 - don't inundate the proposal with references in an attempt to impress through sheer numbers
 - don't reference all your own work – only those publications that apply

- You can mention aspects of the broader impacts throughout, but remember that there is an RUI impact statement. Make sure that discussions of the impact do not diminish or distract from developing the scientific research in the proposal

RUI Impact Statement

- A chance to promote your activities
 - Institutional
 - Departmental
 - Individual
- Importance of research to all three
- Success stories within all three
- The approach taken by any or all three to provide students with a better educational experience

Biographical Sketch

- Follow the directions!
- Up to ten publications – problem if none are recent (will need to address this somewhere in the proposal)
 - Five closely related to proposed work
 - Five other significant ones
- Synergistic activities – up to five

Current and Pending Support

- List all sources of external grant support
- May be a problem if you don't have a track record of external grant support – probably need to address this somewhere in the proposal

Budget

- Ask for what you really need
 - Don't over or under request
- Stipends
 - Up to 2/9 summer salary
 - Student summer support
 - Technicians (if appropriate)
- Travel
- Equipment
- Materials and Supplies
- Publication costs
- Sub-contract costs
- Indirect costs – you will have a negotiated institutional rate
- Matching – not required for RUI and deleted from the materials a reviewer will see

Budget Justification

- Explain summer salary – if work entire summer with students, request 2/9
- Justify the number of student stipends – include the different components of the project that justify the number requested
- Justify the travel (meetings or collaborations)
- General idea of what materials and supplies money will be used for
- Thoroughly explain anything “unusual” in your budget
- Matching – not required – but mention examples of how your institution provides support for your work and include a dollar value of some of these items
 - Faculty/student travel support
 - Equipment maintenance
 - Free housing for summer students

Facilities/Equipment

- Convince the reviewers that the infrastructure and expertise is in place to complete the work
 - Dedicated lab space
 - Equipment
 - Other resources that support your work
 - If expertise not in place – establish a collaboration and document it with an attached letter

Other Advice

- Find colleagues who will provide substantive and critical comments on a draft of your proposal
- Listen to those colleagues
- If the proposal is rejected, resubmit a revised version that addresses the criticisms raised by the reviewers
 - Unless the criticism is that the general idea does not merit funding
- Talk to the program officer