

NSF 02-078



**NATIONAL SCIENCE FOUNDATION
4201 Wilson Boulevard
Arlington, Virginia 22230**

January 31, 2002

**OFFICE OF THE
ASSISTANT DIRECTOR
FOR ENGINEERING**

**SUBJECT: FY 2002/2003 RESEARCH EXPERIENCES FOR TEACHERS (RET)
Supplements and Sites**

Dear Colleague:

This letter is to call your attention to the continuation and expansion of the Research Experiences for Teachers (RET) program activity in the Directorate for Engineering (ENG) in FY 2002/2003. The goal of the RET activity, begun in FY 2001, is to involve middle and high school teachers in engineering research in order to bring knowledge of engineering and technological innovation to the pre-college classroom. This is achieved by building partnerships between teachers and engineering researchers in their laboratories through supplements to on-going research and education projects funded by ENG. Through these partnerships, the RET program aims to build long-term collaborative relationships between both in-service and pre-service K-12 teachers and the engineering research community; support the active participation of these teachers and future teachers in research and education projects funded by NSF/ENG; facilitate professional development of K-12 teachers through strengthened partnerships between institutions of higher education and local school districts; and encourage researchers to build mutually rewarding partnerships with teachers at inner city schools, particularly those supported through the NSF Urban Systemic Program. Please refer to the following NSF website for additional information on these school districts: (<http://www.ehr.nsf.gov/esr/programs/usp/#activeawards>)

The RET program is being expanded in FY 2002/2003 to add a group-site mechanism, which enables successful partnerships on a larger scale. The RET program, through both Supplements and Sites, encourages the active participation of both in-service and pre-service (education majors who are still pursuing their degrees) K-12 teachers in ongoing NSF/ENG projects. Encouraging active participation of teachers in NSF projects is an excellent way to reach broadly into the teacher talent pool of the U.S. and to encourage more K-12 students to pursue engineering studies by increasing their understanding of engineering, as conveyed by their teachers. The ENG Directorate strongly encourages all of its grantees, including grantees from the Small Business Innovative Research (SBIR) and the Small Business Technology Research (STTR) programs, to make special efforts to identify talented teachers for participation in this RET opportunity.

RET Supplement

A request for funding of an RET supplement should be made under an existing NSF/ENG award or within a proposal for a new or renewal NSF/ENG award. The description of the RET activity should clearly articulate in some detail the form and nature of the prospective teacher's involvement in the Principal Investigator's ongoing or proposed research. For example, the teacher may participate in the design of new experiments, modeling and analysis of experimental data, algorithm and software development, and other activities that will result in intellectual contributions to the project. It is expected that the RET supplement experience will also lead to transfer of new knowledge to classroom activities. Therefore, the RET supplement description should also indicate what type of sustained follow-up will be provided to help in translating the teacher's research experience into classroom practice. A brief biographical sketch of the teacher should also be included.

The duration of the RET Supplement will be one year and the project may be carried out during summer months, academic year, or both. The total cost of the supplement is limited to \$10,000 per teacher. The budget includes a teacher's stipend and up to \$1,000 for the cost of materials, equipment, software and other supplies for developing classroom instructions and experiments. An administrative allowance (limited to 25% of the teacher's stipend only) is allowed in lieu of indirect costs. Normally, funds may be available for one to two teachers, but exceptions will be considered. Participation of teachers who are members of underrepresented groups (women, underrepresented minorities, and persons with disabilities) is strongly encouraged. An award decision will be based on internal review by the cognizant ENG Program Director and availability of funds in a particular program. An application for an RET Supplement **must** be submitted via the NSF FastLane and the procedure is the same as described in the Research Experiences for Undergraduates (REU) Program Announcement, NSF 01-121, (<http://www.nsf.gov/pubs/2001/nsf01121/nsf01121.htm>), for the submission of an REU Supplement request. For guidance concerning the RET Supplement, the Principal Investigator should consult with the Program Director of his/her particular NSF award. There is no deadline for submission of a RET Supplement request.

RET Site

An RET Site project is based on an independent proposal, submitted at an annual deadline date, to provide in-service and pre-service K-12 teachers with discovery-based learning experiences in Engineering laboratories, which can be incorporated into their classroom activities during the school year. An RET Site project may be conducted during the summer, academic year, or both, and must have a well-defined focus, with clearly articulated projects and activities for participating teachers. An RET Site project should involve teachers in a research program that will normally be at least four weeks in duration. In those cases where limited availability of specialized facilities, such as clean rooms, electron microscope, etc., make it possible to offer an extraordinary experience in a shorter timeframe, programs of duration as short as two weeks may be proposed with appropriate justification. It may be beneficial to include an orientation period for the teachers to acquaint them with laboratory methods, safety procedures, analytical methods, etc., as appropriate to the proposal. Because it is expected that the RET experience will also lead to the transfer of new knowledge to classroom activities, the proposal must indicate the type of sustained follow-up that will be provided to help translate the teacher's research experience into classroom practice.

If the proposing institution seeks to involve teachers from school districts funded through the NSF's Urban Systemic Program. (<http://www.ehr.nsf.gov/esr/programs/usp/#activeawards>), the proposed project must involve at least ten in-service teachers annually. Additional funds are specifically allocated for such partnerships by the NSF Urban Systemic Program. An RET Site project supported by ENG should involve at least five K-12, in-service and/or pre-service teachers.

The deadline date for submission of an RET Site proposal is **Monday, May 6, 2002**. The duration of an RET Site grant may be for up to three years, and the program may be carried out during summer months, academic year, or both, starting in FY 2002 or 2003. The total cost per teacher is limited to \$10,000, which includes funds for the teacher's stipend and up to \$1,000 for the cost of materials, equipment, software, and other supplies for developing classroom instructions and experiments. The total amount which may be requested for an RET Site is \$150,000 per year; total request for a three-year program not to exceed \$450,000. An administrative allowance (limited to 25% of the teacher's stipend only) is allowed in lieu of indirect costs. It is expected that teacher stipends will be adjusted according to their length of residency and that stipends for in-service teachers will generally be higher than those for pre-service teachers (education majors who are still pursuing their degrees). Participation of teachers who are members of underrepresented groups (women, underrepresented minorities, and persons with disabilities) is strongly encouraged. An RET Site proposal **must** be submitted via NSF FastLane by the deadline date. The procedure is the same as described in the Research Experiences for Undergraduates (REU) Program Announcement, NSF 01-121, (<http://www.nsf.gov/pubs/2001/nsf01121/nsf01121.htm>), for the submission of a REU Site proposal. For guidance concerning the submission of an RET Site proposal, the Principal Investigator, should contact the ENG/RET Coordinators, Mary Poats, mpoats@nsf.gov or Kishan Baheti, rbaheti@nsf.gov.

The National Science Foundation encourages you to visit K-12 teachers in your local school district and region to make them aware of this RET opportunity as well as other NSF research and educational projects. Information on current NSF awards is readily available on http://www.nsf.gov/home/grants/grants_awards.htm. We trust that your time and efforts will open and facilitate new avenues for collaboration and innovations in the teaching of mathematics, science and engineering and enhance the development of the U.S. science and engineering workforce.

Sincerely,

Esin Gulari
Acting Assistant Director

Inquiries regarding RET Supplements and Sites should be directed to one of the following ENG staff:

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For inquiries regarding NSF supported Urban Systemic efforts, please contact:

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