



**National Science Foundation**

4201 Wilson Boulevard  
Arlington, Virginia 22230

Division of Electrical and Communications Systems (ECS)  
Division of Bioengineering and Environmental Systems (BES)

January 23, 2006

**Subject: Graduate Research Supplements (GRS) to Current ECS and BES Awards to Broaden Participation of Underrepresented Students**

Dear Colleague:

This letter is to call your attention to a new opportunity to broaden participation of underrepresented students in Ph.D. programs in electrical engineering and biomedical/biochemical/environmental engineering through supplements to current research grants funded by the Electrical and Communications Systems Division (ECS) or the Bioengineering and Environmental Systems Division (BES) in the Directorate for Engineering at the National Science Foundation.

**Introduction:** The long-term goal of the Graduate Research Supplements (GRS) is to increase the number of people from underrepresented groups in advanced academic and professional careers. The establishment of GRS reflects the continuing effort by ECS and BES to promote increased participation of underrepresented students in all fields of electrical engineering and biomedical/biochemical/environmental engineering research. According to the NSF 2003 Survey of Doctorate Recipients (SDR), among the teaching faculty in engineering, there are 10.3% women, 3.9% African American, 3.3% Hispanic, 0.4% American Indian/Alaskan Native and 7.1% persons with disability. The percentages of teaching faculty in electrical engineering are 6.2% women, 3.2% African American, 3.5% Hispanic, <0.1% American Indian/Alaskan Native and 6.5% persons with disability. Similarly, for teaching faculty in bioengineering and biomedical engineering, 18.1% are women and 4.7% persons with disability. There are no comparable statistics available for underrepresented minorities in environmental engineering and biochemical engineering, but most likely these percentages are quite low. With such exceedingly low levels of faculty among underrepresented groups, ECS and BES recognize that these underrepresented groups represent a significant untapped technical resource for the Nation.

In FY 2005, ECS in collaboration with BES, initiated a pilot program through GRS to encourage active participation of women and minority Ph.D. students majoring in electrical engineering, or biomedical/biochemical/environmental engineering in on-going research programs funded by ECS or BES. Recognizing the importance and impact of the program, ECS and BES are announcing GRS for the second year. It is anticipated that GRS will help in the development of intellectual synergy between faculty and students, will provide faculty with the opportunity to involve additional graduate students in on-going research programs, will lead to greater retention of students in the targeted populations, and will foster a learning and career advancement environment that supports students from underrepresented groups.

**Anticipated Type of Award:** Supplements to ECS or BES awards.

**Eligibility:** A request for funding of a GRS should be made by the Principal Investigator of an existing ECS or BES award. Only one new graduate student from underrepresented groups qualifying for a GRS may be supported under each research grant. GRS candidates must be United States citizens or nationals, or permanent resident aliens of the United States. The graduate students must be enrolled for the Ph.D. degree in electrical engineering or biomedical/biochemical/environmental engineering. Renewal for a second or third year supplement requires a report on the progress of the student towards the Ph.D. degree.

**Proposal Preparation:** Supplement requests should be submitted through FastLane as described in <http://www.fastlane.nsf.gov/fastlane.htm>, following the instructions given in the Grant Proposal Guide (GPG) at [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpg](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg), for Supplemental Funding Requests. The procedure is the same as that described in the Research Experiences for Undergraduates (REU) supplement. The Principal Investigator must enter a description of the proposed GRS activity (limited to 3 pages) including a justification of the funds requested and a supporting budget. The proposal should articulate the form and nature of the involvement of identified graduate students majoring in electrical engineering or biomedical/biochemical/environmental engineering in the Principal Investigator's ongoing research program. The Directorate for Engineering expects that the GRS student will contribute to activities that comprise the intellectual core of the funded research effort. Since it is anticipated that GRS will promote increased participation of underrepresented graduate students in electrical engineering and biomedical/biochemical/environmental engineering, the proposal for a GRS should indicate the follow-up mechanism that will be provided to encourage career advancement of GRS students beyond their participation in the Ph.D. research program. In addition, a brief biographical sketch of the candidate student must be included, which should incorporate the student's long-range career goals and commitment to diversity as a resource for enriching education in electrical engineering or biomedical/biochemical/environmental engineering. For further guidance concerning the GRS the Principal Investigator should consult with the Program Director of the ECS or BES award under which the GRS is to be supported. Inquiries regarding possible conflict-of-interest situations and other questions should be addressed to the GRS coordinators.

**Proposal Review:** An award decision will be based on internal review by the ECS or BES Program Director, and availability of funds in a particular program.

**Award Size and Duration:** An ECS or BES awardee may request a GRS for twelve months, renewable annually, for the duration of the research grant for a maximum period of three years for an individual student. The supplements are nontransferable and may include graduate student stipend and tuition support consistent with academic institutional practices. Indirect costs are not permitted; however, an administration allowance limited to 25% of the student stipend may be included.

**Award Information:** Anticipated funding available for this supplement in FY 2006 is \$500,000, pending the availability of funds. The estimated number of supplements awarded will be 12-15.

**Submission Deadline:** The deadline for submission of the request is May 1, 2006.

The Directorate for Engineering encourages ECS and BES grantees to disseminate information on GRS to students planning to pursue the Ph.D. degree in electrical engineering or biomedical/biochemical/environmental engineering who share a commitment to diversity as a resource for enriching education in electrical engineering or

biomedical/biochemical/environmental engineering. The Directorate for Engineering anticipates that GRS will open and facilitate new avenues for increasing the participation of underrepresented students in electrical engineering and biomedical/biochemical/environmental engineering, and in turn, enhance the development of the U.S. engineering workforce in accordance with the Engineer of 2020 report of the National Academy of Engineering that foresees an engineering profession, that remains underrepresented with respect to women and minorities in the year 2020.

Inquiries regarding the supplement should be directed to one of the following GRS Coordinators.

Sincerely,

Dr. Usha Varshney (Coordinator)  
Division Director  
Division of Electrical and Communications Systems  
[uvarshne@nsf.gov](mailto:uvarshne@nsf.gov)  
703-292-8339

Dr. Bruce Hamilton (Coordinator)  
Division Director  
Division of Bioengineering and Environmental Systems  
[bhamilto@nsf.gov](mailto:bhamilto@nsf.gov)  
703-292-8320

