Directorate for Education and Human Resources (EHR)

NSF's Directorate for Education and Human Resources (EHR) provides national leadership in the effort to improve science, technology, engineering, and mathematics (STEM) education at all levels, from pre-Kindergarten to grade 12, and undergraduate through graduate.

The EHR Directorate supports programs and activities through the following:

- Math and Science Partnership (MSP)
- Division of Elementary, Secondary, and Informal Education (ESIE)
- Division of Graduate Education (DGE)
- Division of Human Resource Development (HRD)
- Division of Research, Evaluation, and Communication (REC)
- Division of Undergraduate Education (DUE)
- Experimental Program to Stimulate Competitive Research (EPSCoR)

For More Information
Visit the EHR Directorate home page, http://www.ehr.nsf.gov/.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Math and Science Partnership

The underlying philosophy of NSF's Math and Science Partnership (MSP) is that collaborations of school systems, higher education, and other partners will increase the capacity of preK-12 educational systems to provide requisites for learning to high standards in science and mathematics. NSF developed the MSP in conjunction with the President's "No Child Left Behind" education initiative. The MSP seeks to ensure the future strength of the Nation by supporting the preparation of the next generation of scientists, engineers, science and math educators, and a science-literate citizenry.

The strategic focus of the MSP is to engage the Nation's higher education institutions; local, regional, and State school districts; and other partners in preK-12 reform by calling for a significant commitment by colleges and universities to improving the quality of science and mathematics instruction in schools and by investing in the recruitment, preparation, and professional development of highly competent science and mathematics teachers. MSP, as a major national effort, is an investment intended to serve all students so that learning outcomes can no longer be predicted based on race/ethnicity, socioeconomic status, gender, or disability.

MSP will support the development, implementation, and sustainability of exemplary partnerships to improve student outcomes in high-quality mathematics and science by all students in all preK-12 levels. The partnerships will be expected to contribute to increases in student achievement across the board, as well as reductions in achievement gaps in mathematics and science education among diverse student populations differentiated by race/ethnicity, socioeconomic status, gender, or disability.

For More Information
Further information, including the MSP program announcement and information for prospective proposers is available at http://www.ehr.nsf.gov/msp/.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Division of Elementary, Secondary, and Informal Education

Science, mathematics, and technology (SMT) education—pre-kindergarten through grade 12 (preK-12)—lays the foundation of knowledge and skills needed by future researchers, educators, and technologists; students pursuing postsecondary education in other disciplines; and individuals directly entering the technological workforce. The Division of Elementary, Secondary, and Informal Education (ESIE) supports the National Science Foundation's mission of providing leadership and promoting development of the infrastructure and resources needed to strengthen preK-12 SMT education throughout the United States.

ESIE's comprehensive and coherent research-based program portfolio strengthens the Nation's capacity to support high-quality SMT education. Innovative instructional materials and student assessments, as well as new models for teacher education, contribute to SMT classroom environments that enable all students to achieve their full potential. Moreover, ESIE's informal learning opportunities via media, exhibit, and community-based projects increase scientific and technological literacy, as well as develop lifelong learning skills that benefit students of all ages. All ESIE programs work together, adding to a knowledge base that informs practice and forging partnerships that leverage the expertise and resources of other major education stakeholders, including higher education, state and local education agencies, school districts, informal science education institutions, professional societies, and industry.

ESIE supports the following programs:

1. Centers for Learning and Teaching
2. Teacher Professional Continuum
3. Presidential Awards for Excellence in Mathematics and Science Teaching
4. Instructional Materials Development
5. Informal Science Education
6. Communicating Research to Public Audiences
7. Information Technology Experiences for Students and Teachers
8. Advanced Technological Education

For More Information
Write to the Division of Elementary, Secondary, and Informal Education, National Science Foundation, 4201 Wilson Boulevard, Room 885, Arlington, VA 22230; or contact the division by telephone, 703-292-8620; or by e-mail, ehr-esi-info@nsf.gov; or visit the ESIE home page, http://www.ehr.nsf.gov/ehr/esie.

1. Centers for Learning and Teaching (CLT)

The Centers for Learning and Teaching Program is a comprehensive, research-based effort that addresses critical issues and national needs of the science, mathematics, and technology (SMT) instructional workforce across the entire spectrum of formal and informal education. Each center has a specific research focus, but all offer rich environments that meld education research, high-quality teacher education, and innovations in instructional practices. Centers consist of a doctoral degree-awarding university and one or more school districts, plus partnering organizations.

CLT program goals are:

- to renew and diversify the cadre of national leaders in science, technology, engineering, and mathematics (STEM) education through doctoral, postdoctoral, and internship programs for the broad array of professionals who educate and support the instructional workforce;
- to increase significantly the numbers of K-12 STEM educators in schools and informal settings; and
- to provide substantive opportunities for research into the nature of learning, strategies of teaching, policies of educational reform, and outcomes of standards-based reform.

Eligibility Requirements for CLT

The CLT program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation NSF 03-522.

2. Teacher Professional Continuum (TPC)

The TPC program is managed jointly by ESIE and the Division of Undergraduate Education. TPC addresses the full continuum of teacher education (grades K-12) from recruitment and preparation, through enhancement, retention, and life-long learning of science, mathematics, and technology (SMT) teachers. TPC supports four categories of projects: (1) *Research Studies* to identify effective strategies for educating teachers; developing supportive structures and environments that sustain SMT educators; and impacting teaching practice through teacher learning; (2) *Research and Development of Educational Models and Systems* to evaluate overall effectiveness of models and systems to be studied, as well as how relationships among various components influence effectiveness; (3) *Professional Resources Development* that are grounded in recent advances in research on teaching and learning; and (4) *Conferences and Symposia* that focus on planning and dissemination of research findings, issues, innovations, and action plans.

The goals of the TPC Program are:

- to improve the quality and coherence of the learning experiences that prepare and enhance SMT teachers;
- to develop innovative curriculums, materials, tools, ideas, and information resources for the professional development of SMT teachers and administrators;
- to research, develop, and identify models, organizational structures, and systems that support the teacher professional continuum;
- to use scientifically based studies to research teacher learning throughout the teacher professional continuum and its impact on teaching practice;
- to advance the knowledge base on the preparation, enhancement, and retention of SMT teachers, and on the strategies that strengthen and diversify the SMT teaching profession; and
- to disseminate this knowledge and research, as well as innovative models and resources, to a national audience.

Eligibility Requirements for TPC

The TPC Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation NSF 03-534.

3. Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST)

Administered on behalf of the White House, the PAEMST Program recognizes teachers who incorporate creativity into their classroom teaching and demonstrate leadership in the education community. Beginning in 2003, the competition will alternate each year between teachers of grades 7-12 and teachers of grades K-6. In 2003, teachers of grades 7-12 mathematics and science in each State and the four U.S. jurisdictions are eligible for nomination. Teachers of grades K-6 will be eligible for Presidential Awards in 2004. Awardees receive a $10,000 cash award and a special citation from the President, and are honored in Recognition Week ceremonies in Washington, D.C.

Eligibility Requirements for PAEMST

The PAEMST Program has special eligibility requirements beyond the standard NSF requirements. For complete information, visit the PAEMST Web site, https://www.ehr.nsf.gov/pres_awards/.

4. Instructional Materials Development (IMD)

The IMD Program supports development of rigorous single- and multiyear curriculums in science, mathematics, and technology (SMT); supplementary instructional materials; and assessments to guide instruction and evaluate student learning. IMD's student-based materials are generally accompanied by materials for teachers,

administrators, and parents/caregivers. The three categories of IMD projects include: (1) *Instructional Materials* for Students that include embedded assessments, enhance classroom instruction, and reflect SMT education standards developed by national professional organizations; (2) *Assessments* (including creation of tools for assessing student learning) that are tied to nationally developed standards and assist in the implementation of new assessments; and (3) *Applied Research* that provides evidence of the effectiveness of instructional materials and feedback for future program development. IMD projects are national in scope and significance; are grounded in recent research in teaching and learning; and have the potential to make a noticeable impact on the nationwide market for instructional materials.

Eligibility Requirements for IMD

The IMD Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation NSF 03-524.

5. Informal Science Education (ISE)

The Informal Science Education (ISE) Program is designed to increase public interest in, understanding of, and engagement with science, technology, engineering, and mathematics (STEM). All ISE projects have the informal learner (from young child to senior citizen) as their primary audience, presume voluntary participation, and are not related to formal school activities or curricula. The outcome of ISE projects is an informed citizenry that has access to the ideas of science and engineering, and an understanding of their role in enhancing quality of life and the health, prosperity, welfare, and security of the Nation. Categories of projects include media (television, radio, film); exhibits (museums, science centers, aquariums, zoos, libraries, other informal learning institutions); and community and youth-based programs.

ISE Program goals are:

- to engage the interest of children and adults in STEM disciplines so they will develop scientific and technological literacy, mathematical competence, problem-solving skills, and the desire to learn;
- to bring together individuals and organizations from the informal and formal education communities, as well as from the private and public sectors, with the objective of strengthening STEM education in all settings; and
- to develop and implement innovative strategies that support development of a socially responsible and informed public, and demonstrate promise of increasing participation of all citizens in continued learning and careers in STEM disciplines.

Eligibility Requirements for ISE

The ISE Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 03-511.

6. Communicating Research to Public Audiences (CRPA)

CRPA grants are a special category of projects supported under the Informal Science Education (ISE) Program. These grants, with funding levels up to $75,000, provide an opportunity for principal investigators (PIs) of awards from any NSF directorate or the Office of Polar Programs to communicate, in nontechnical terms, research results, research in progress, or research methods to a broad and diverse audience. Grants can be used for any activity that falls within the definition of an informal science education activity (e.g., media presentations, exhibits, youth-based activities) in order to disseminate research results, research in progress, or research methods.

Eligibility Requirements for CRPA

The CRPA Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 03-509.

7. Information Technology Experiences for Students and Teachers (ITEST)

The ITEST Program seeks to increase opportunities for students (grades 7-12) and teachers to learn about, experience, and use information technologies within the context of science, technology, engineering, and mathematics (STEM) disciplines, including information technology courses. Two categories of projects are (1) *Youth-Based projects*, which create innovative models for engaging students in meaningful, intensive learning experiences, building the skills and knowledge needed to advance their studies so they can function and contribute in a technologically rich society and (2) *Comprehensive Projects for Students and Teachers*, which are designed to infuse information technologies into STEM courses, giving teachers opportunities to put into practice what they have learned via summer laboratory experiences with students in grades 7-12.

Eligibility Requirements for ITEST

The ITEST Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation and guidelines NSF 02-147.

8. Advanced Technological Education (ATE)

The ATE Program is managed jointly by DUE and the Division of Elementary, Secondary, and Informal Education. The program promotes improvement in the education of technicians in science- and engineering-related fields at the undergraduate and secondary school levels. It particularly targets two-year colleges and encourages collaboration among 2-year colleges, 4-year colleges, universities, secondary schools, business, industry, and Government. Proposals are solicited in the following three tracks:

- **Projects**—Activities may include the adaptation of exemplary educational materials, courses, and curriculums in new educational settings; preparation and professional development of college faculty and secondary school teachers; development of educational materials, courses, curriculums, and laboratories; internships and field experiences for students and educators; evaluation and broad dissemination of exemplary educational materials, curricula, and pedagogical practices designed by previously funded ATE centers and projects; and research on effective practices in technician education.
- **Centers**—Centers are comprehensive national or regional resources that provide models and leadership for other projects and act as clearinghouses for educational materials and methods. National Centers of Excellence engage in the full range of activities described above for projects. Regional centers for manufacturing or information technology education pursue comprehensive approaches that focus on reforming academic programs, departments, and systems to produce a highly qualified workforce to meet industry's needs within a particular geographic region. Resource centers constitute a highly visible source of materials, ideas, contacts, and mentoring in particular fields of technological education.
- **Articulation Partnerships**—Focus on enhancing either of two important educational pathways for students between 2-year colleges and 4-year colleges and universities. One type of Articulation Partnership focuses on strengthening science, technology, and mathematics preparation of prospective K–12 teachers enrolled in preprofessional programs at 2-year colleges. The other type of partnership targets 2-year college programs for students to continue their education in 4-year science, technology, engineering, and mathematics programs, especially programs that have a strong technological basis.

Proposals in all three tracks must show evidence of a coherent vision of technological education—a vision that recognizes the needs of the modern workplace, the needs of students as lifelong learners, and the need for articulation of educational programs at different levels. Whenever feasible, projects are expected to utilize and innovatively build from successful educational materials, courses, curriculums, and methods that have been developed through other ATE grants, as well as other exemplary resources that can be adapted to technological education.

For More Information
Visit the ATE Program Web site,
http://www.ehr.nsf.gov/EHR/DUE/programs/ate/.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Division of Graduate Education

NSF provides support to individual graduate students, postdoctoral fellows, and institutions to improve graduate and postdoctoral education and to promote strength, diversity, and vitality in the science and engineering workforce. The Division of Graduate Education (DGE) provides the Foundation's focus to promote strong and innovative graduate education that will develop the Nation's future leadership in all the science, technology, engineering, and mathematics (STEM) fields supported by NSF.

DGE manages the following programs, maintaining close connections with programs funded through other NSF directorates:

1. Graduate Research Fellowships (GRF)
2. Graduate Teaching Fellowships in K–12 Education (GK–12)
3. Integrative Graduate Education and Research Traineeships (IGERT)
4. NSF-NATO Postdoctoral Fellowships in Science and Engineering (NATO)
5. Travel Grants for NATO Advanced Study Institutes (ASI)

For More Information
Write to the Division of Graduate Education, National Science Foundation, 4201 Wilson Boulevard, Room 907, Arlington, VA 22230; or contact DGE by telephone, 703-292-8630; or by e-mail, graded@nsf.gov. For information such as program announcements and application guidelines for the programs in this division, visit the DGE home page, http://www.ehr.nsf.gov/ehr/dge/. The DGE home page also provides links to graduate and postdoctoral programs managed by other NSF Directorates.

1. Graduate Research Fellowships (GRF)

GRFs promote the strength and diversity of the Nation's science and engineering base and offer recognition and 3 years of support for advanced study to approximately 900 outstanding graduate students annually in all fields of science, mathematics, and engineering supported by NSF. To be eligible for this nationwide merit competition, an individual must be a citizen, national, or permanent resident of the United States and be at or near the beginning of graduate study.

For More Information
Visit the GRF Program Web site, http://www.nsf.gov/grfp.

2. Graduate Teaching Fellowships in K–12 Education (GK–12)

In order to strengthen K–12 science and mathematics education, provide pedagogical training and experience for graduate students, and enhance links between K–12 and higher education levels, NSF initiated the GK–12 Program in 1999. GK–12 projects support graduate and advanced undergraduate science, mathematics, engineering, and technology (STEM) students as content resources for K–12 teachers. These fellows assist teachers in the science and mathematics content of their teaching; demonstrate key science and mathematics concepts; and gain the pedagogical skills necessary at all education levels. The program links the acknowledged excellence of U.S. graduate education with the excitement and critical needs of K–12 learning and teaching, and promotes interest in teaching and learning practices among graduate-level institutions.

Only academic institutions that grant master's or doctoral degrees in STEM fields may submit proposals. GK–12 fellows are selected by awardee institutions and must be (1) citizens, nationals, or permanent residents of the United States and (2) graduate students enrolled in STEM programs or advanced undergraduate STEM majors who have demonstrated a strong proficiency in mathematics and science.

For More Information
Visit the GK–12 Program Web site, http://www.nsf.gov/home/crssprgm/gk12.

3. Integrative Graduate Education and Research Traineeships (IGERT)

NSF places high priority on the preparation of Ph.D.s who are equipped with the multidisciplinary background and the technical, professional, and personal skills essential to address the career demands of the future. To meet these needs, NSF created IGERT, an agency-wide graduate education program. Unlike graduate fellowships, for which individuals apply, IGERT considers only proposals from institutions that offer doctoral degrees.

The primary goal of the IGERT Program is to enable the development of innovative graduate education activities that are research-based and that will produce scientists and engineers who are well prepared for a broad spectrum of career opportunities. IGERT integrates research and education with emphasis on experimentation to yield a variety of new models for a paradigm shift in graduate education. Projects supported should incorporate the following features:

- a comprehensive, doctorate-level multidisciplinary research theme that serves as the foundation for graduate education activities;
- activities that integrate the multidisciplinary research theme with innovative educational opportunities, including training in the responsible conduct of research and interactions between students and faculty;
- an educational environment that exposes students to state-of-the-art research instrumentation and methodologies;
- an institutional strategy and operational plan for student recruitment, with special consideration for efforts aimed at members of groups underrepresented in science and engineering, to ensure preparation of a diverse science and engineering workforce; and
- a well-defined strategy for assessment of project performance.

For More Information
Visit the IGERT Program Web site, http://www.nsf.gov/igert.

4. NSF-NATO Postdoctoral Fellowships in Science and Engineering (Including Special Fellowship Opportunities for Scientists from NATO Partner Countries)

At the request of the U.S. Department of State, NSF administers a program of NATO postdoctoral fellowships to promote closer collaboration among scientists and engineers of member and NATO partner countries. Approximately 25 awards are made each year to U.S. institutions on behalf of scientists and engineers from NATO partner countries to enable them to conduct research at institutions in the United States.

Eligibility Requirements for NSF-NATO Fellowships

Scientists and engineers from NATO partner countries who are within 5 years of their doctoral degree are eligible to be nominated by a scientific advisor at a U.S. institution.

For More Information
Send an inquiry via e-mail to nsf-nato@nsf.gov; or visit the program's Web site, http://www.ehr.nsf.gov/dge/programs/nato.

5. Travel Grants for NATO Advanced Study Institutes (ASI)

NSF awards travel grants of $1,000 each to enable U.S. science and engineering graduate students and junior postdoctorates to attend NATO Advanced Study Institutes held in NATO member or partner countries of Europe. These 2- to 3-week instructional courses, which are conducted by noted scientists and engineers, are scheduled throughout the year, although the majority of them are held during the summer.

Eligibility Requirements for NATO Advanced Study Institutes

The director of a NATO Advanced Study Institute may nominate a U.S. citizen, national, or permanent resident who is a graduate student or who has received a Ph.D. within the past 3 years and has been accepted at a NATO institute.

For More Information
Send an inquiry via e-mail to nato-asi@nsf.gov; or visit the program's Web site, http://www.ehr.nsf.gov/dge/programs/asi.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Division of Human Resource Development

The Division of Human Resource Development (HRD), located in the Directorate for Education and Human Resources, serves as a focal point for NSF's agency-wide commitment to enhance the quality and excellence of science, technology, engineering, and mathematics (STEM) education and research by broadening the participation of underrepresented groups and institutions. HRD's programs aim to increase the participation and advancement of minority-serving institutions, women and girls, and persons with disabilities at every level of science and engineering enterprises including underrepresented minorities. By doing so, these programs contribute to the development of a diverse, internationally competitive, and globally engaged workforce of scientists, engineers, and well-prepared citizens.

In order to maximize the preparation of a well-trained scientific and instructional workforce for the new millennium, HRD programs focus strongly on partnerships and collaborations, and are aligned with their respective target populations:

- Minorities and Minority-Serving Institutions
- Women and Girls
- Persons with Disabilities
- Crosscutting Initiatives

All HRD programs seek to encourage access to and equity within STEM education. Thematically, these goals are realized via:

- education research and demonstration;
- enhancement of institutional education capacity;
- enhancement of institutional research capacity;
- large-scale implementation; and
- recognition and dissemination.

For More Information

Write to the Division of Human Resource Development, National Science Foundation, 4201 Wilson Boulevard, Room 815, Arlington, VA 22230; or contact the division by telephone, 703-292-8640; or by fax, 703-292-9018; or visit the HRD home page, http://www.ehr.nsf.gov/hrd.

HRD Programs According to Theme and Population

	Minorities and Minority-Serving Institutions	Women And Girls	Persons with Disabilities
Education Research and Demonstration		PGE	PPD
Enhancement of Institutional Education Capacity	HBCU-UP, TCUP	PGE	PPD
Enhancement of Institutional Research Capacity	CREST		
Large-scale Implementation	LSAMP, AGEP		
Recognition and Dissemination	PAESMEM	PAESMEM, PGE	PAESMEM, PPD

• Minorities And Minority Serving Institutions

Minority groups underrepresented in science, technology, engineering, and mathematics (STEM) disciplines include American Indians/Alaskan Natives (Native Americans), African Americans, Hispanic Americans, and Native Pacific Islanders. The Division of Human Resource Development (HRD) supports efforts that are focused on two major objectives: (1) supporting student activities and (2) strengthening the research capabilities of minority institutions. HRD programs represent a coherent effort to stimulate organizational and institutional change; markedly improve the quality of education opportunities available to minority and other students; and increase the quality and quantity of students pursuing degrees in STEM disciplines.

HRD programs that specifically support minorities and minority-serving institutions are:

1. Alliances for Graduate Education and the Professoriate (AGEP)
2. Centers of Research Excellence in Science and Technology (CREST)
3. Historically Black Colleges and Universities–Undergraduate Program (HBCU-UP)
4. Louis Stokes Alliances for Minority Participation (LSAMP)
5. Tribal Colleges and Universities Program (TCUP)

For More Information
Write to the Division of Human Resource Development, National Science Foundation, 4201 Wilson Boulevard, Room 815, Arlington, VA 22230; or contact by telephone, 703-292-8640; or by fax, 703-292-9018; or visit the HRD home page, http://www.ehr.nsf.gov/hrd.

1. Alliances for Graduate Education and the Professoriate (AGEP)

The AGEP Program seeks to significantly increase the number of American Indian/Alaskan Native (Native American), African American, Hispanic American, and Native Pacific Islander students receiving doctoral degrees in science, technology, engineering, and mathematics (STEM) fields customarily supported by NSF. The lack of role models and mentors in the professoriate constitutes a significant barrier to producing minority STEM doctoral graduates. NSF is particularly interested in increasing the number of minorities who will enter the professoriate in these disciplines.

Specific objectives of AGEP are to (1) develop and implement innovative models for recruiting, mentoring, and retaining minority students in STEM doctoral programs and (2) develop effective strategies for identifying and supporting underrepresented minorities who want to pursue academic careers.

The AGEP Program also supports a research effort to identify major factors that promote the successful transition of minority students from (1) undergraduate through graduate study; (2) course-taking in the early years of the graduate experience to independent research required for completion of a dissertation; and (3) the academic environment to the STEM workplace. To accomplish this, the research component will be informed by a portfolio of federal and private efforts in this arena in order to identify factors underlying exemplary as well as unsuccessful efforts.

Eligibility Requirements for AGEP

Alliances that consist of STEM doctoral degree-granting institutions are eligible to apply to the program. One institution must be designated as the lead institution for the project. Institutions in the United States and its territories that have documented success in graduating minority students at the Ph.D. level are strongly encouraged to participate. Alliances are encouraged to establish partnerships with minority-serving undergraduate institutions to enhance recruitment efforts, where appropriate.

For More Information
Visit the HBCU-UP Web site, http://www.ehr.nsf.gov/EHR/HRD/agep.asp.

2. Centers of Research Excellence in Science and Technology (CREST)

NSF recognizes that academic institutions with significant minority student enrollments play a vital role in conducting the research that contributes to our knowledge base in all disciplines and in educating minority students who go on to careers in science, technology, engineering, and mathematics (STEM) fields.

The CREST Program makes substantial resources available to upgrade the capabilities of the most research-productive minority institutions. The program develops outstanding research centers through the integration of education and research. In addition, it serves to promote the production of new knowledge; increase the research productivity of individual faculty; and expand a diverse student presence in STEM disciplines. CREST projects enhance the effectiveness of related science and engineering activities within the project's area of research focus.

Eligibility Requirements for CREST

Institutions eligible to participate in CREST Research Infrastructure Improvement (RII) awards must have the following:

- Enrollments of 50 percent or more members of minority groups underrepresented in advanced levels of science and engineering (e.g., Alaskan Natives [Eskimo or Aleut], American Indian, African American, Native Pacific Islanders [Polynesian or Micronesian], Hispanic or Latino);
- Graduate programs in NSF-supported fields of science or engineering;
- Demonstrated strengths in NSF-supported fields, as evidenced by an existing or developing capacity to offer doctoral degrees in one or more science and engineering disciplines;
- A willingness and capacity to serve as a resource center in one or more research thrust areas;
- A demonstrated commitment and track record in enrolling and graduating minority scientists and engineers; and
- Strong collaborations in the proposed field of research.

For More Information
Visit the CREST Web site, http://www.ehr.nsf.gov/EHR/HRD/crest.asp.

3. Historically Black Colleges and Universities – Undergraduate Program (HBCU-UP)

HBCU-UP seeks to enhance the quality of undergraduate science, technology, engineering, and mathematics (STEM) education at Historically Black Colleges and Universities as a means to broaden participation in the Nation's STEM workforce. The program provides support for the implementation of comprehensive institutional strategies to strengthen STEM teaching and learning in ways that will improve the access and retention of underrepresented groups in STEM. Typical project implementation strategies include STEM course and curricular

reform and enhancement; faculty professional development; supervised research and other active learning experiences for STEM undergraduates; student support; scientific instrumentation to improve STEM instruction; and other activities that meet institutional needs.

Eligibility Requirements

Historically Black Colleges and Universities that currently offer associate, baccalaureate, or graduate degrees in STEM fields are eligible.

For More Information
Visit the HBCU-UP Web site, http://www.ehr.nsf.gov/EHR/HRD/hbcu.asp.

4. Louis Stokes Alliances for Minority Participation (LSAMP)

The LSAMP Program is designed to develop the comprehensive strategies necessary to strengthen the preparation and increase the number of minority students who successfully complete baccalaureates in science, technology, engineering, and mathematics (STEM) fields. This objective facilitates the long-term goal of increasing the production of doctorates in STEM fields, with an emphasis on entry into faculty positions.

The LSAMP Program requires each awardee to establish meaningful partnerships among academic institutions and encourages the inclusion of government agencies and laboratories, industry, and professional organizations. It is expected that successful partnerships will enable the development of approaches tailored to the institutional setting for achievement of program goals in STEM undergraduate education. Activities supported include student enrichment such as collaborative learning, skill development, and mentoring; academic enrichment, such as curricular and instructional improvement; and direct student support, such as summer activities.

Eligibility Requirements

With justification, nonprofit organizations may serve as members of the partnership. Academic institutions with a track record of educating underrepresented minority students in STEM disciplines are eligible to apply to the LSAMP Program.

For More Information
Visit the LSAMP Web site, http://www.ehr.nsf.gov/EHR/HRD/amp.asp.

5. Tribal Colleges and Universities Program (TCUP)

TCUP provides awards to enhance the quality of science, technology, engineering, and mathematics (STEM) instruction and outreach programs, with an emphasis on the leveraged use of information technologies at Tribal Colleges and Universities, Alaskan Native-serving institutions, and Hawaiian Native-serving institutions. Support is available for the implementation of comprehensive institutional approaches to strengthen STEM teaching and learning in ways that improve access to, retention within, and graduation from STEM programs, particularly those that have a strong technological foundation. Through this program, assistance is provided to eligible institutions in their efforts to bridge the “digital divide” and prepare students for careers in information technology, science, mathematics, and engineering fields.

Proposed activities should be the result of careful analysis of institutional needs, address institutional and NSF goals, and have the potential to result in significant, sustainable improvement in STEM program offerings.

Typical TCUP project implementation strategies include curriculum enhancement, faculty professional development, undergraduate research and community service, academic enrichment, infusion of technology to enhance STEM instruction, collaborations, and other activities that meet institutional and community needs.

Eligibility Requirements for TCUP

Organizations that are eligible include Tribal Colleges and Universities, Alaskan Native-serving institutions, and Native Hawaiian-serving institutions.

For More Information
Visit the TCUP Web site, http://www.ehr.nsf.gov/EHR/HRD/tcup.asp.

• Women and Girls

Gender Diversity in Science, Technology, Engineering, and Mathematics Education (GDSE)

All of the divisions within NSF's Directorate for Education and Human Resources encourage projects that will increase the participation of women and girls in science, technology, engineering, and mathematics (STEM) fields. Because women are underrepresented in many disciplines, HRD supports research on focused interventions that are directed toward increasing the number of fully participating women in the mainstream of the Nation's scientific and technological enterprises. GDSE specifically supports the following activities:

- **Research**—This area seeks to enhance the multidisciplinary understanding of gender differences in human learning—behavioral, cognitive, affective, and social aspects—through sociopsychological, ethnographic, statistical, anthropological, economic, and organizational studies. The efforts in this area provide a research foundation for educational approaches, curriculum materials, and technological tools that are already developed or can be developed in the future. Emphasis is also placed on bridging research and educational practice in settings such as classrooms, informal learning sites, and technological learning environments. Results of PGE research projects should be cumulative, reproducible, sustainable, and scalable, supporting sustained improvement in educational practice.
- **Demonstration or "Model" Projects**—This area employs evaluation methods to determine the effectiveness of new learning tools, pedagogies, professional development, or student programs and services. Demonstration projects apply research findings about girls' learning preferences in the design of new curriculum materials, services, pedagogy, or instructor development programs. Successful or "model" projects may be institutionalized and replicated. Teacher and faculty development demonstrations test new ways to integrate the understanding and awareness of gender-inclusive practices into preservice and in-service programs and into professional standards and policies. It is anticipated that participants in demonstration projects will directly benefit from the learning experience and assimilate new behaviors.
- **Information Dissemination Activities**—This area of GDSE supports projects focusing on the dissemination of research results or strategies for reducing the barriers for women and girls in STEM fields. Supported activities include media (e.g., videotapes and brochures), conferences, teleconferences, symposia, and workshops that bring together experts to discuss issues, projects, policies, and research related to the participation and achievement of women and girls in STEM. Dissemination projects take exemplary models and materials to a significant national audience.

For More Information
Visit the GDSE Web site, http://www.ehr.nsf.gov/EHR/HRD/pge.asp.

• Persons With Disabilities

Research in Disabilities Education (RDE)

The Research in Disabilities Education (RDE) Program supports efforts to increase the participation and achievement of persons with disabilities in science, technology, engineering, and mathematics (STEM) education and careers. Meritorious projects from diverse institutions are supported via RDE demonstration, enrichment, and information dissemination (RDE-DEI) standard grants. Promising research efforts may then be developed further via continuing grants under the focused-research initiatives (RDE-FRI) program track. Finally, broadly applicable methods and products are disseminated for widespread use, commercialization, or inclusion in the activities of

program-sponsored Regional Alliances for persons with disabilities in STEM education (RDE-RAD). RDE Alliances serve to inform the public, government, and industry about proven good practices in the classroom; promote broader awareness of disabilities issues; and define specific areas of accessibility and human learning in need of further attention by educators and the research community.

For More Information
Visit the RDE Program Web site, http://www.ehr.nsf.gov/EHR/HRD/rde.asp.

• Crosscutting Initiatives

Presidential Awards for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)

The White House established the PAESMEM Program to recognize the importance of role models and mentors in the academic, professional, and personal development of students underrepresented in science, technology, engineering, and mathematics (STEM) fields. PAESMEM identifies outstanding mentors and mentoring programs that enhance the experiences of underrepresented students in the sciences, mathematics, and engineering. At the individual and institutional levels, PAESMEM awardees have been exemplary in their demonstration of the idea that the Nation must fully develop its human resources in STEM disciplines through the support of increased access by, and inclusion of, diverse populations.

Nominees, both individual and institutional, must have served as mentors or facilitated mentoring services for at least 5 years. Awards are made to (1) individuals who have demonstrated outstanding and sustained mentoring and effective guidance to a significant number of students at the K–12, undergraduate, or graduate level of education and (2) institutions that have, through their programming, enabled a substantial number of students from groups traditionally underrepresented in science, mathematics, and engineering to pursue and complete relevant degree programs successfully. At the postsecondary level, these efforts must show that students have completed either a baccalaureate, masters, or doctoral degree.

For More Information
Visit the PAESMEM Web site at:
http://www.ehr.nsf.gov/EHR/HRD/paesmem.asp.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Division of Research, Evaluation, and Communication

The Division of Research, Evaluation, and Communication (REC) seeks to:

- advance research on science, technology, engineering, and mathematics (STEM) education and improve evaluative research on STEM education programs;
- increase the capacity of the field to conduct high-quality, innovative, useful, and credible STEM education evaluation or research studies; and
- increase the capacity of STEM education researchers and STEM education program evaluators to communicate the results of their research.

The REC Division supports the following programs and activities:

1. Research on Learning and Education (ROLE)
2. Evaluative Research and Evaluation Capacity Building (EREC)
3. Crosscutting Programs and Activities
4. Technical Assistance Contracts for Assessment, Evaluation, and Communication of EHR's Programs and Activities

For More Information
Write to the Division of Research, Evaluation, and Communication (REC), National Science Foundation, 4201 Wilson Boulevard, Room 855, Arlington, VA 22230; or contact the division by telephone, 703-292-8650; or by e-mail, REC@nsf.gov; or visit the REC home page, http://www.ehr.nsf.gov/EHR/REC.

1. Research on Learning and Education (ROLE)

The ROLE Program supports research across a continuum that includes (1) the biological basis of human learning; (2) behavioral, cognitive, affective, and social aspects of human learning; (3) science, technology, engineering, and mathematics (STEM) learning in formal and informal educational settings; and (4) changing educational systems to improve STEM learning. ROLE aims to advance the knowledge base within and across the intersections of these multidisciplinary areas.

For More Information
See the ROLE/EREC (Evaluative Research and Evaluation Capacity Building) joint program solicitation, NSF 03-542; or visit the ROLE Web site, http://www.ehr.nsf.gov/rec/programs/research.

2. Evaluative Research and Evaluation Capacity Building (EREC)

The EREC Program supports projects that offer unique approaches to evaluation practice in the generation of knowledge for the science, technology, engineering, and mathematics (STEM) education community, and for broad policymaking within research and education enterprises. EREC also supports projects to increase the capacity of the field to conduct high-quality, innovative, useful, and credible STEM education evaluation studies.

For More Information
See the EREC/ROLE (Research on Learning and Education) joint program solicitation, NSF 03-542; or visit the EREC Web site, http://www.ehr.nsf.gov/rec/programs/evaluation.

3. Crosscutting Programs and Activities

REC participates in several of NSF's crosscutting activities, including interdisciplinary programs, programs that are supported by multiple NSF Directorates, international activities, and programs jointly supported by NSF and other federal agencies. The primary REC crosscutting activities are listed alphabetically below.

- **Faculty Early Career Development (CAREER)**—The CAREER Program recognizes and supports the early career development activities of those teacher-scholars who are most likely to become the academic leaders of the 21st century. CAREER proposals are welcome in the research areas identified in the unified EREC-ROLE program announcement, available through the NSF Online Document System at http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf03542. CAREER proposals may also address the research questions or areas of interest identified by other EHR Divisions and programs. Frequently asked questions about CAREER can be found at http://www.nsf.gov/pubs/2003/nsf03031/nsf03031.htm. For more information, visit the CAREER Program Web site, http://www.nsf.gov/home/crssprgm/career/start.htm.
- **Information Technology Research (ITR)**—Information technology (IT) today is an essential ingredient in research, technology, education, and other societal endeavors. REC's share of the multi-NSF Directorate/multi-federal agency Information Technology Research (ITR) Initiative focuses on support for basic research to advance knowledge for education and workforce development. For more information, visit the ITR Initiative Web site, http://www.itr.nsf.gov.
- **Interagency Education Research Initiative (IERI)**—The goal of IERI—supported jointly by the Institute of Education Sciences, the National Science Foundation (represented by REC), and the National Institute of Child Health and Human Development—is to support scientific research that investigates the effectiveness of educational interventions in reading, mathematics, and the sciences as they are implemented in varied school settings with diverse student populations. For more information, visit the Department of Education's Current Funding Opportunities Web site, http://www.ed.gov/offices/IES/funding.html.
- **Small Business Innovation Research (SBIR)**—SBIR is government-wide program intended to stimulate technological innovation; use small-business concerns to meet federal research and development (R&D) needs; foster and encourage the participation of minority and disadvantaged persons in technological innovation; and increase the commercialization by the private sector of innovations resulting from federal R&D. The primary objective of the NSF SBIR Program is to increase incentive and opportunity for small firms to undertake cutting-edge, high-risk, high-quality scientific, engineering, or science/engineering education research that would have a high potential economic payoff if the research is successful. For more information, visit the SBIR Program Web site, http://www.eng.nsf.gov/sbir.

4. Technical Assistance Contracts for Assessment, Evaluation and Communication of EHR's Programs and Activities

REC funds contracts that analyze the development, implementation, and impact of programming across the EHR Directorate and coordinates with other federal agencies engaged in similar science, technology, engineering, and mathematics education program or project evaluation. The Directory of Evaluation Contractors Home Page lists contact information for current prime and subcontractors and is available on the Evaluation and Communication Program Web site, http://www.ehr.nsf.gov/rec/programs/evaluation.

Contracted activities include program assessment, improvement, accountability, and generation and systematization of knowledge to benefit NSF. NSF's Contracts Branch is responsible for planning, solicitation, negotiation, award, and administration of all such contracts. Interested outside organizations, including for-profit businesses, universities, and other nonprofits and professional associations, should monitor monthly postings to the NSF's Contracting Opportunities page.

For More Information
Visit the NSF's Contracting Opportunities Web site, http://www.nsf.gov/home/about/contracting/index.cfm.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Division of Undergraduate Education

The Division of Undergraduate Education (DUE) serves as the focal point for NSF's efforts in undergraduate education. DUE's mission is to promote excellence in undergraduate science, technology, engineering, and mathematics (STEM) education for all students, including STEM majors, prospective teachers of grades preK through 12 (preK-12), students preparing for the technical workplace, and students in their role as citizens.

The Division accomplishes its mission by doing the following:

- Providing leadership to (1) promote cutting-edge efforts, risk-taking, and continuous innovation in the development of new practices and ideas; (2) shape national priorities to further educational innovation and research; and (3) direct efforts to increase the diversity of STEM communities.
- Supporting curriculum development that stimulates research on learning; leads to exemplary materials and strategies for education; incorporates model assessment programs and practices; effects broad dissemination of effective pedagogy and materials; and enables long-term sustainability of effective activities.
- Preparing the workforce by promoting technological, quantitative, and scientific literacy; supporting an increase in diversity, size, and quality of the next generation of STEM professionals who enter the workforce with 2- or 4-year degrees or who continue their studies in graduate and professional schools; investing in the Nation's future K-12 teacher workforce; and funding research to evaluate and improve workforce initiatives.
- Fostering connections by facilitating communication across disciplinary boundaries, across all educational levels (from K-12 through graduate school), and between academia, industry, and professional societies; encouraging faculty to combine teaching and discipline-based research; and collaborating with research communities and with NSF research directorates.

DUE supports the following programs and activities:

1. Advanced Technological Education
2. Computer Science, Engineering, and Mathematics Scholarships
3. Course, Curriculum, and Laboratory Improvement (which includes the Assessment of Student Achievement)
4. Federal Cyber Service: Scholarship for Service
5. NSF Director's Award for Distinguished Teaching Scholars
6. National Science, Technology, Engineering, and Mathematics Education Digital Library
7. Robert Noyce Scholarship Program
8. Science, Technology, Engineering, and Mathematics Talent Expansion Program
9. Teacher Professional Continuum

For More Information
Write to the Division of Undergraduate Education, National Science Foundation, 4201 Wilson Boulevard, Room 835, Arlington, VA 22230; or contact the division by telephone, 703-292-8670; or by e-mail, undergrad@nsf.gov; or visit the DUE home page, http://www.ehr.nsf.gov/EHR/DUE/.

1. Advanced Technological Education (ATE)

The ATE Program is managed jointly by DUE and the Division of Elementary, Secondary, and Informal Education. The program promotes improvement in the education of technicians in science- and engineering-related fields at the undergraduate and secondary school levels. It particularly targets 2-year colleges and encourages collaboration among 2-year colleges, 4-year colleges, universities, secondary schools, business, industry, and government. Proposals are solicited in the following three tracks:

- **Projects**—Activities may include the adaptation of exemplary educational materials, courses, and curriculums in new educational settings; the preparation and professional development of college faculty and secondary school teachers; development of educational materials, courses, curriculums, and laboratories; internships and field experiences for students and educators; the evaluation and broad

dissemination of exemplary educational materials, curricula, and pedagogical practices designed by previously funded ATE centers and projects, and research on effective practices in technician education.

- **Centers**—Centers are comprehensive national or regional resources that provide models and leadership for other projects and act as clearinghouses for educational materials and methods. National Centers of Excellence engage in the full range of activities described above for projects. Regional centers for manufacturing or information technology education pursue comprehensive approaches that focus on reforming academic programs, departments, and systems to produce a highly qualified workforce to meet industry's needs within a particular geographic region. Resources Centers constitute a highly visible source of materials, ideas, contacts, and mentoring in a particular field of technological education.
- **Articulation Partnerships**—Focus on enhancing either of two important educational pathways for students between 2-year colleges and 4-year colleges and universities. One type of Articulation Partnership focuses on strengthening the science, technology, and mathematics preparation of prospective K–12 teachers who are enrolled in preprofessional programs at 2-year colleges. The other type of partnership targets 2-year college programs for students to continue their education in 4-year science, technology, engineering, and mathematics programs, especially programs that have a strong technological basis.

Proposals in all three tracks must show evidence of a coherent vision of technological education—a vision that recognizes the needs of the modern workplace, the needs of students as lifelong learners, and the need for articulation of educational programs at different levels. Whenever feasible, projects are expected to utilize and innovatively build from successful educational materials, courses, curriculums, and methods that have been developed through other ATE grants, as well as other exemplary resources that can be adapted to technological education.

For More Information
Visit the ATE Program Web site, http://www.ehr.nsf.gov/EHR/DUE/programs/ate.

2. Computer Science, Engineering, and Mathematics Scholarships (CSEMS)

The CSEMS Program provides institutions with funds to support scholarships for talented but financially disadvantaged students in computer science, computer technology, engineering, engineering technology, or mathematics degree programs. Through support from this program, grantee institutions establish scholarships that promote full-time enrollment and completion of degrees in higher education in the above fields. NSF established the program in accordance with the American Competitiveness and Workforce Improvement Act of 1998 (Public Law 105-277). The Act reflects the Nation’s need to increase substantially the number of graduates from associate, baccalaureate, and graduate degree programs in these fields. The goals of this program are to:

- improve education for students in the stated disciplines;
- increase retention of students to degree completion;
- improve professional development, employment, and further higher education placement of participating students; and
- strengthen partnerships between institutions of higher education and related employment sectors.

The eligibility criteria for a CSEMS scholarship recipient include the following:

- status as a U.S. citizen, national, refugee alien, or permanent resident alien at the time of application;
- full-time enrollment in a computer science, computer technology, engineering, engineering technology, or mathematics degree program at the associate, baccalaureate, or graduate level;
- demonstration of academic potential or ability; and
- demonstration of financial need, defined for undergraduates as financial eligibility under U.S. Department of Education rules for federal financial aid, and defined for graduate students as eligibility for Graduate Assistance in Areas of National Need.

CSEMS proposers must be institutions of higher education that grant degrees in computer science, computer technology, engineering, engineering technology, or mathematics.

For More Information
Visit the CSEMS Program Web site,
http://www.ehr.nsf.gov/EHR/DUE/programs/csems.

3. Course, Curriculum, and Laboratory Improvement (CCLI)

The CCLI Program seeks to improve the quality of science, technology, engineering, and mathematics (STEM) education for all students, based on research concerning the needs and opportunities that exist and effective ways to address them. It targets activities affecting learning environments, course content, curriculums, and educational practices, with the aim of contributing to the relevant research base. The program invites proposals to improve undergraduate STEM education in a broad spectrum of institutions, including 2-year colleges, 4-year colleges, and universities. Projects may involve a single institution, a collaborative effort among several institutions, or a collaboration with business and industry partners. The program has four tracks:

- **Educational Materials Development (CCLI-EMD)** projects are expected to produce innovative materials that incorporate effective educational practices to improve student learning of STEM. Projects to develop textbooks, software, or laboratory materials for commercial distribution are appropriate. Two types of EMD projects will be supported: (1) those that intend to demonstrate the scientific and educational feasibility of an idea—a "proof of concept" or prototype and (2) those that are based on prior experience with a prototype that intend to fully develop and test the product or practice. Such materials are expected to be disseminated nationally for adoption and adaptation.
- **National Dissemination (CCLI-ND)** projects are expected to provide faculty with professional development opportunities to enable them to introduce new content into undergraduate courses and laboratories and to explore effective educational practices to improve the effectiveness of their teaching. Projects should be designed to offer workshops, short courses, or similar activities on a national scale in single or multiple disciplines.
- **Adaptation and Implementation (CCLI-A&I)** projects are expected to result in improved education in STEM at academic institutions through adaptation and implementation of exemplary materials, laboratory experiences, and/or educational practices that have been developed and tested at other institutions. Proposals may request funds in any budget category supported by NSF or may request funds to purchase only instrumentation.
- **Assessment of Student Achievement (CCLI-ASA)** projects are expected to develop and disseminate assessment practices, materials (tools), and measures to guide efforts that improve the effectiveness of courses, curriculums, programs of study, and academic institutions in promoting student learning in STEM. This program track also promotes the full integration of assessment with these educational efforts. Three types of ASA projects will be supported: (1) New Development—developing new assessment materials (tools) and practices for use in single or multiple undergraduate disciplines; (2) Adaptation—adapting assessment materials and practices that have proven effective for one setting or audience for use in a new setting, or with a different audience; and (3) Dissemination—spreading the use of effective assessment practices through workshops or web-based materials that are thoroughly documented with detailed instructions.

For More Information
Visit the CCLI Program Web site, http://www.ehr.nsf.gov/EHR/DUE/programs/ccli.

4. Federal Cyber Service: Scholarship for Service (SFS)

The SFS Program seeks to increase the number of qualified students entering the fields of information assurance and computer security and increase the capacity of higher education enterprise in the United States in order to continue producing professionals in these fields. The program consists of the following tracks:

- **Scholarship Track** provides funding to colleges and universities to award scholarships in information assurance and computer security fields. Scholarship recipients will become part of the Federal Cyber Service of information technology specialists who ensure the protection of the U.S. Government's information infrastructure. After their 2-year scholarships, the recipients will be required to work for a federal agency for 2 years as their Federal Cyber Service commitment.
- **Capacity Building Track** seeks to increase the national capacity for producing trained information assurance professionals by providing support to colleges and universities interested in building programs, individually or in partnership.

For More Information
Visit the SFS Program Web site, http://www.ehr.nsf.gov/EHR/DUE/programs/sfs.

5. NSF Director's Award for Distinguished Teaching Scholars (DTS)

The purpose of the DTS Program is to recognize and reward individuals who have contributed significantly to the scholarship of their discipline and to the education of students in science, technology, engineering, and mathematics (STEM), and who exemplify the ability to engage productively in both research and education. DTS is part of NSF's efforts to foster an academic culture that values a scholarly approach to both research and education. The Director's Award is the highest honor bestowed by the NSF for excellence in both teaching and research in STEM fields, or in educational research related to these disciplines.

For More Information
Visit the DTS Program Web site, http://www.ehr.nsf.gov/EHR/DUE/programs/dts.

6. National Science, Technology, Engineering, and Mathematics Education Digital Library (NSDL)

The goal of the NSDL Program is to support the creation and development of a national digital library for science, technology, engineering, and mathematics (STEM) education. The resulting virtual facility--learning environments and resources network for STEM education--is intended to meet the needs of students and teachers at all levels, including K–12, undergraduate, graduate, and lifelong learning, in both individual and collaborative settings. The NSDL Program builds on work supported under the multiagency Digital Libraries Initiative (see http://www.dli2.nsf.gov) and represents a synergistic collaboration of research and education efforts.

The NSDL Program is currently supporting a Core Integration effort that coordinates and manages the digital library's holdings and services. To complement and further expand this Core Integration capacity, the NSDL Program accepts proposals in the following tracks:

- **Collections** projects are expected to aggregate and manage a subset of the library's content within a coherent theme or specialty.
- **Services** projects are expected to develop services that will support users, collection providers, and the Core Integration effort, as well as enhance the impact, efficiency, and value of the library.
- **Targeted Research** projects are expected to explore specific topics that have immediate applicability to one of the other two tracks, or the Core Integration effort discussed above.

For More Information
Visit the NSDL Program Web site,
http://www.ehr.nsf.gov/EHR/DUE/programs/nsdl.

7. Robert Noyce Scholarship Program

The Robert Noyce Scholarship Program seeks to increase the number of K-12 teachers with strong science, technology, engineering, and mathematics (STEM) content knowledge by encouraging talented STEM undergraduates and STEM professionals to pursue teaching careers in elementary and secondary schools. The program provides funding to institutions of higher education to provide scholarships, stipends, and programmatic support for STEM majors and STEM professionals to enter and complete teacher credentialing programs. Scholarship recipients are required to complete two years of teaching in a high need school district for each year of scholarship or stipend support.

For More Information
For specific information on eligibility, visit the Noyce Program Web site,
http://www.ehr.nsf.gov/EHR/DUE/programs/noyce/.

8. Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP)

STEP seeks to increase the number of students (U.S. citizens or permanent residents) pursuing and receiving associate or baccalaureate degrees in established or emerging fields within science, technology, engineering, and

mathematics (STEM). The program is open to institutions of higher education in the United States and its territories and to consortia of such institutions, offering either associate degrees or baccalaureate degrees in STEM fields. Type 1 proposals are solicited that provide for full implementation efforts at academic institutions. Type 2 proposals are solicited that provide for educational research projects on associate or baccalaureate degree attainment in STEM.

For More Information
Visit the STEP Program Web site,
http://www.ehr.nsf.gov/EHR/DUE/programs/step.

9. Teacher Professional Continuum (TPC)

The TPC Program is managed jointly by ESIE and the Division of Undergraduate Education. TPC addresses the full continuum of teacher education (grades K–12) from recruitment and preparation through enhancement, retention, and lifelong learning of SMT teachers. TPC supports four categories of projects: (1) Research Studies—identify effective strategies for educating teachers, develop supportive structures and environments that sustain SMT educators, and impact teaching practice through teacher learning; (2) Research and Development of Educational Models and Systems—evaluate overall effectiveness of models and systems to be studied, as well as how relationships among various components influence effectiveness; (3) Professional Resources Development that are grounded in recent advances in research on teaching and learning; and (4) Conferences and Symposia—focus on planning and dissemination of research findings, issues, innovations, and action plans.

TPC Program goals are to:

- improve the quality and coherence of the learning experiences that prepare and enhance SMT teachers;
- develop innovative curricula, materials, tools, ideas, and information resources for the professional development of SMT teachers and administrators;
- research, develop, and identify models, organizational structures, and systems that support the teacher professional continuum;
- use scientifically-based studies to research teacher learning throughout the teacher professional continuum and its impact on teaching practice;
- advance the knowledge base on the preparation, enhancement, and retention of SMT teachers, and on the strategies that strengthen and diversify the SMT teaching profession; and
- disseminate this knowledge and research--as well as innovative models and resources--to a national audience.

Eligibility Requirements for TPC

The TPC Program has special eligibility requirements beyond the standard NSF requirements. For more information, see program solicitation NSF 03-534.

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES

Experimental Program to Stimulate Competitive Research

The Experimental Program to Stimulate Competitive Research (EPSCoR) is a joint program of the National Science Foundation (NSF) and several U.S. States and territories. The program promotes the development of States' science and technology (S&T) resources through partnerships involving a State's universities, industry, and government, and the federal research and development (R&D) enterprise. EPSCoR's goal is to maximize the potential inherent in State S&T resources and use those resources as a foundation for economic growth.

For More Information

A full array of information about the program and its requirements and participants is available on the EPSCoR Web site, http://www.ehr.nsf.gov/epscor. Information may also be obtained by writing to the EPSCoR Office, Room 875, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; or contact by telephone, 703-292-8683.

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