



# Directorate for Education and Human Resources



DISCOVERY

LEARNING

WORKFORCE

*Transforming Education,  
Promoting Excellence*

# *Transforming Education*

Thank you for your interest in the Directorate for Education and Human Resources (EHR) at the National Science Foundation. It is an exciting time for us in EHR as we develop the nation's scientific and engineering workforce, and further scientific literacy among all citizens.

Our vision of excellence in science, technology, engineering and mathematics (STEM) is evolving with STEM education's increased importance nationally and internationally. EHR's programs reach math and science students at every level from preschool through postgraduate education. We connect researchers to one another and build bridges between disciplines and between higher education faculty and K-12 teachers. Our rigorous research and evaluation efforts identify successful strategies for teaching STEM in both formal and informal settings. All this is done while enabling the participation and success of students from diverse backgrounds.

# Broadening Participation

## Broadening Participation to Improve Workforce Development

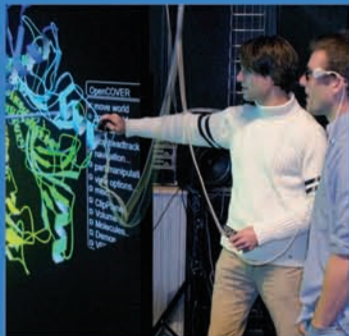


NSF encourages full participation of women, minorities and persons with disabilities within all levels of America's science, technology, engineering and mathematics (STEM) enterprise. Collaboration between and among agencies, industries and educational systems responds to the human resource imperative to build a diverse workforce with both formal and technical training to maintain the country's growth and competitiveness.

# Cyber-Enabled Learning

Promoting Cyber-Enabled Learning Strategies to Enhance STEM Education

Use of modern technology offers new tools to transform how STEM disciplines are taught, how students are engaged, and how research results are captured, visualized and shared. Educational programs in emerging fields, such as microelectromechanical systems, nanotechnology and cyberinfrastructure, prepare students to be innovators of the next-generation tools and services supporting the country's future competitiveness.



# Teacher Enrichment

## Enriching the Education of STEM Teachers

Quality professional development is essential to enhancing the skills and content knowledge of math and science teachers. Through professional development institutes, teachers can participate in directed field experiences to learn emerging scientific practices for studying a rapidly-changing planet. Through professional learning communities, beginning and experienced teachers can learn effective strategies to support student learning in STEM disciplines.



# Public Understanding of Science

Furthering Public Understanding of Science and Advancing STEM Literacy



Beyond the classroom, there are opportunities for life-long learning through exhibits at science and technology museums, public television programs, interactive web sites, and community outreach initiatives. Public understanding of science through informal learning is motivated mainly by curiosity and the instinct for exploration and social interaction. EHR promotes innovative research for the learning of science, and encourages the joy of discovery through hands-on experiences for individuals of all ages and backgrounds.



# DGE

Division of Graduate Education

## *Enabling the Future of Graduate Education*

Today's graduate students are the scientists of the future who will keep America competitive in the global community. The programs in DGE strongly support the education of graduate students as they engage in cutting-edge, state-of-the-art research in science and engineering.

DGE programs act as catalysts for inventive ideas to promote graduate education based on new science, emerging technologies, and the changing array of future career opportunities.



# DRL

Division of Research on Learning in Formal and Informal Settings

## *Forging the Foundations of Learning*

Resources and models for educational practice can advance STEM learning for people of all ages. DRL promotes research, development, and evaluation in both formal and informal learning settings and for all the STEM disciplines.

DRL programs build new knowledge about STEM teaching and learning through research and development. The Division addresses challenges in K-12 STEM education, and reaches the public through informal education.

DRL unites STEM education research and evaluation initiatives across multiple communities of scholars and practitioners.





## *Bridging Discovery, Education and Workforce*

Engaging and rigorous undergraduate education is central to the STEM enterprise. It provides the foundation for the STEM workforce, for advanced study, for well-prepared K-12 teachers, and for an educated 21st century citizenry. DUE serves as the bridge between K-12 and undergraduate education and between undergraduate education, the workplace and graduate education.

The programs in DUE focus on student success by advancing our understanding of effective ways to support undergraduate education and learning. Funded projects also support the preparation of the next generation of K-12 teachers and students by partnering with school systems, and colleges and universities to promote innovative approaches in STEM education.

# DUE

Division of Undergraduate Education





## *Transforming the STEM Workforce for 21st Century Competitiveness*

The innovation process requires a scientifically literate population and a robust supply of qualified experts. HRD promotes and enables innovative education programs and activities that develop the Nation's future leadership in science, technology, engineering and mathematics (STEM) fields, ensuring that the nation enjoys strong capability across all regions of the country and abroad.



Invested resources strengthen teaching, learning, and community outreach to improve recruitment and retention for underrepresented minorities, women and persons with disabilities in STEM disciplines and careers.

# HRD

Division of Human Resource Development

# *Promoting Excellence*

This brochure provides additional insights about how EHR is transforming STEM education. We invite you to share your ideas and comments with us. Advancing STEM education is a goal that cannot be accomplished by one entity. It requires the collective knowledge and efforts of us all. In other words, you are our partner and we look forward to working with you.



## CONTACT INFORMATION

Education & Human Resources (EHR)  
The National Science Foundation,  
4201 Wilson Boulevard,  
Arlington, Virginia 22230, USA  
Tel: (703) 292-8600  
FIRS: (800) 877-8339  
TDD: (800) 281-8749  
[www.nsf.gov](http://www.nsf.gov)

More information is available on the Web pages  
of our four divisions:

Division of Undergraduate Education at [http://  
www.nsf.gov/ehr/ue/about.jsp](http://www.nsf.gov/ehr/ue/about.jsp)

Division of Graduate Education at [http://www.  
nsf.gov/ehr/dge/about.jsp](http://www.nsf.gov/ehr/dge/about.jsp)

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