The Center for STEM Education
K-16 Outreach in Collaboration with the Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems
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ExxonMobil Bernard Harris Summer Science Camp
The ExxonMobil Bernard Harris Summer Science Camp (BHSSC) is a free, academic program which was started by The Harris Foundation. The foundation began in 1998 by Dr. Bernard Harris, Jr., the first African American astronaut, in order to invest in community-based initiatives to support education, health and wealth. The foundation takes an active role in shaping education in students in middle and high school through college. Because science, mathematics and engineering are critical to society’s infrastructure for the 21st century, the Foundation works to preserve our future by making an investment in our youth today.

In 2007, The Harris Foundation teamed with the ExxonMobil Foundation to increase the impact and expand the reach of the program to twenty campuses across the United States. Northeastern University was one of the sites chosen to host a camp in order to support economically and/or socially disadvantaged students with limited opportunities within the Greater Boston area. Since the inception of the program, Gordon CenSSIS Scholars have served as camp counselors, guiding and supporting nearly 100 middle school students since 2007.

Northeastern STEM Talent Expansion Program
The Northeastern University Science Technology, Engineering, and Mathematics Talent Expansion Program- University Partnership (STEP-UP) is a collaborative effort between Northeastern University’s STEM departments, two NSF-supported Research Centers (Gordon CenSSIS and the Center for High Rate Nano-Manufacturing (CHIN)) and three Community Colleges: Mass Bay Community College, Middlesex Community College and Northern Essex Community College.

As a part of this collaboration with Gordon CenSSIS, the Center for STEM Education recruited three applicants from the three community college partners to take part in Gordon CenSSIS’s REU program. Through this partnership, Gordon CenSSIS and The Center for STEM Education are expanding the STEM pipeline to reach a greater population of students. Community College students in 2008 were placed in Professor Charles Dimarzio’s and Professor April Gu’s labs.

Research Experiences for Teachers
The Northeastern University RET program is a summer experience that not only provides opportunity for authentic research by middle and high school teachers, but also provides effective inquiry-based professional development, opportunities for review of high-quality curricula, and connections to national, state and local educational standards. In addition to presenting an overview of their research, teachers develop units tied to their classroom curriculum and have opportunities to present these units to each other and content specialists for feedback before they introduce them to their students.

Five teachers in the 2008 RET program worked in 3 different Gordon CenSSIS labs (Akram Alishawakheh, April Gu, and Patricia Mabrouk). In addition to working with CenSSIS affiliated lab faculty, CenSSIS faculty also provided professional development through research seminars and presentations such as the High Tech Tools and Toys Laboratory.

Step UP – The Mayor’s Initiative
Step-UP is an unprecedented collaboration among five private Universities, the City of Boston, and the Boston Public Schools to help close the achievement gap.

Gordon CenSSIS Scholars have assisted this program in a variety of ways including volunteering at the Curley K-8 School’s Saturday Academy as well as volunteering during the project wide Public Science Day, coordinated in conjunction with the American Association for the Advancement of Science.

The Young Scholars Program
The Young Scholars Program at Northeastern University began in 1989 in response to a national shortage of qualified U.S. citizens moving into STEM careers. Resurrected in 2004 through support from The Noyce Foundation, and with continued support from EMC, Testron and Gordon CenSSIS, the NU Young Scholars Program (NUYSP) addresses a critical recommendation made in the recent national report, “Rising Above The Gathering Storm”, by providing expanded experiential learning experiences in STEM for K–12 students. The model developed at NU has been refined over the past 18 years to become a comprehensive learning experience for program participants and staff. NUYSP offers future scientists and engineers a unique opportunity for hands-on experience while still in high school. It also provides faculty and graduate students the opportunity to mentor our next generation of STEM professionals. The program is open to Greater Boston area applicants who have completed their sophomore or junior year in high school. In order to allow students from all income levels the opportunity to partake in this experience, all participants earn a weekly stipend.

In collaboration with Gordon CenSSIS, a number of students have been placed in cutting-edge research laboratories across campus. One such lab is Professor Charles D’Marno’s Optical Science Laboratory. Since the program was resurrected in 2004, the lab assignment has continued to evolve and the experience continues to benefit not only the students in the labs, but the graduate students and Professors who serve as mentors to the next generation of scientists and engineers. In 2008, April Gu also served as a lab mentor to two Young Scholar students.

On-going Outreach for Gordon CenSSIS Scholars
In addition to the established programs listed, there are numerous opportunities yearly for Gordon CenSSIS Scholars to participate in. Outreach activities include being a judge in local, citywide, and statewide science fairs. CenSSIS Scholars also assist when schools visit campus. They are able to share their experiences and passion for engineering with the next generation of scientists and engineers.

Also, Scholars participate in events such as the Future City Competition run by the Boston Society of Civil Engineers Section (BSCES) and hosted by the Center for STEM Education and Northeastern University and also the Explorations event which is run in conjunction with the Boston Science Partnership out of the Center for STEM Education.