**Academic Mentoring and Support through two NSF Projects: STEP and S-STEM**

**NSF STEP: STEM Talent Expansion Program-University Partnership (STEP-UP); Christos Zahopoulos (PI), Claire Duggan (Co-PI, Project Director)**

**NSF S-STEM: Investing in Tomorrow’s Engineering Leaders (ITEL); Abe Zeid (PI), Claire Duggan (Program Co-PI, Project Director)**

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**STEM Talent Expansion Program University Partnership**

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) and three Community Colleges: Mass Bay Community College, Middlesex Community College and Northern Essex Community College.

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**Using research as the catalyst for engagement, Northeastern University’s STEP-UP is:**

1. Creating a sustainable STEM partnership between Northeastern University’s STEM departments and partner Community Colleges by leveraging collaboration with Northeastern University’s two partner research centers.
2. Creating a Partner Faculty Network (PFN) with representatives from all stakeholders.
3. Providing Community College faculty the opportunity to immerse themselves in the research environment of the partnering research Centers through:
   - Seminars;
   - Cross-Institutional visits;
   - Participation in the Research Experiences for Teachers Program (www.ret.neu.edu).
4. Providing community college students access to research laboratories through expansion of summer experiences (Research Experiences for Undergraduates program) and cross-institutional visits throughout the academic year.
5. Replicating Northeastern University’s Summer Bridge Program at interested Community Colleges and developing a Transfer Bridge Program for Community College students transitioning to Northeastern University.
6. Providing academic mentoring and support. Identifying promising practices and provide professional development opportunities for all partners.

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**Highlights and Expected Impact**

**STEP-UP**

- Over two years seven partnering Community College faculty participated in the Research Experiences for Teachers program at Northeastern University, many working directly with Gordon CenSSIS/ALERT labs and faculty.
- The High Tech Tools and Toys Laboratory (HTT&TL) is in instructional engineering design-type course and after visiting the lab, community college partners are looking to replicate at least some parts of the course.
- Three community college students participated in the Research Experiences for Undergraduates Program at Northeastern University, affiliated with Gordon CenSSIS.

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**ITEL**

- High School and Transfer students will be recruited through existing pools of talented students:
  - Young Scholars Program – high school research program
  - AP Initiative – high school advanced academic enrichment program
  - STEP-UP – community college connections (REU program, STEM seminars and clubs, Summer Bridge participants/leaders);
- ITEL Scholars will work closely with Gordon Scholars;
- ITEL Scholars will be mentored by Gordon Fellows and Faculty/Staff members;

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**Investing in Tomorrow’s Engineering Leaders**

Northeastern University, in collaboration with the Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems (Gordon CenSSIS) will support 14 engineering students through an NSF Scholarships for STEM (S-STEM) students grant. The Northeastern University program, Investing in Tomorrow’s Engineering Leaders (ITEL), will support 14 engineering students as NU ITEL Scholars.

- Scholarships will be awarded to eight incoming freshmen and six community college transfer students (with a focus on NU STEP-UP partners).
- Incoming freshmen can receive up to $40,000 for up to 8 semesters ($5,000 per full academic semester).
- Transfer students can receive up to $30,000 for up to 6 semesters ($5,000 per full academic semester).

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**ITEL Scholarship Services**

In addition to the financial award, ITEL scholars will be a part of a select group of students with access to numerous support and development opportunities including:

- Monitoring and Academic Support programs through Gordon CenSSIS;
- Northeastern University’s Cooperative Education Program;
- Career Management Class;
- Research Opportunities with Gordon CenSSIS.