Advanced Design and Fabrication of Prosthetic and Medical Devices

NSF ATE# 1601522

Institution: New York City College of Technology
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The objectives of this project are to improve the quality of course offerings at the New York City College of Technology(City Tech) by impacting technician education through the integration of multidisciplinary research and innovative methods for using laboratories. The long term goals are improving the graduation and retention rates in the department of Mechanical Engineering Technology.

The project has covered research, teaching and mentoring in STEM. The research was covered through faculty-students research team which are working throughout the year which included mentoring also. Summer training program provided students with great skills through interaction with industry mentors. The curriculum updates added a valuable material to the existing curriculum. Certification training programs provided students with self-confidence to navigate alone through vigorous certification system that requires great focus and analysis.

The major impact of this project is increasing graduation rates of students in the Mechanical Engineering Technology Dept. Compared to the graduation rates before the initiation of this project (2015 – 2016) we observed reasonable improvement in the last year (2018 – 2019) as follows:

a. Associate program in Mechanical Engineering Technology: degrees conferral increased by 12%
b. Associate program in Industrial Design: degrees conferred: 0% increase
c. Bachelor's program in Mechanical Engineering Technology: increase is 95%

We notice the sharp increase in the bachelor's level compared to the two associate degree levels which is mainly due to the high increase in enrollment in the bachelor's degree program. Most students prefer to continue in the bachelor program after finishing their associates.

The project successfully met its goals. The project has improved both the quality of course offerings at City Tech and students' technical knowledge and skills. Students who participated in workshops and various research teams gained discipline-specific content knowledge, research skills, and became acquainted with the field. Students were able to make concrete connections between their current learning and potential future careers. Partners and faculty members expressed commitment to the project. Such strong partnerships are likely to continue beyond the funding period.