Design and Fabrication of Hardware to Promote STEM Education and Careers among Secondary Education Students

Lisa Tunstill
Mechanical and Aerospace Engineering Department

Overview
Women in Defense (WID) seeks to encourage secondary students to pursue Science, Technology, Engineering and Math (STEM) education and careers. The Tennessee Valley Chapter of WID has sponsored 8 MAE student design teams to create STEM-related hardware for use in middle- and high-school classrooms. Design teams also participated in outreach efforts by involving students in the design process in an effort to further encourage student interest in STEM subjects.

Key Findings
MAE design teams participated in a product demonstration at Williams Middle School (WMS) and administered surveys to students to determine whether the implementation of the hardware affected students’ knowledge and opinions of STEM subjects. The teams found that the hardware promoted the students’ interest in STEM as well as provided team members critical engineering design experience.

Explanation
Cultivating interest in STEM education and careers in young people is crucial to creating future scientists and engineers. Interest in STEM subjects as a secondary student can lead to a genuine interest in science and engineering, including astronomy and its related fields.

Impact
Survey results indicated that implementation of STEM-related hardware in secondary education classrooms tremendously increased the students understand of STEM concepts via hands-on use of these tools.

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