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Abstract: Longitudinal data reveals impact of "STEPS for Girls" Program

In 1997, the University of Wisconsin-Stout (UW-Stout), in partnership with the Society of Manufacturing Engineering Education Foundation (SME-EF), initiated an outreach program for girls entering the seventh grade. The purpose of the program is to increase female representation in science/math/engineering/technology related post-secondary education and careers. Based on research and experience, we believe that the most effective means of changing this situation is a long term one: to expose girls and all children of color to the opportunities for careers in engineering before they make irreversible curriculum decisions in middle school and high school. The program was named the Science Technology & Engineering Preview Summer Camp for Girls at Stout ("STEPS for Girls"). "STEPS for Girls" is a one-week introduction to the world of manufacturing. The camp was developed to achieve an appropriate balance between technical, developmental, and recreational activities. The girls manufacture radio-controlled model airplanes from raw materials. The components are fabricated in various laboratory activities using real production equipment. Each girl has an opportunity to fly her airplane with the assistance of skilled radio-controlled aircraft pilots. "STEPS for Girls" campers gain direct hands-on experience in math, physics, chemistry, packaging, computer aided design, rapid prototyping, computer aided manufacturing, CNC machining, metals casting, plastics processing, robotics, web-page development, and printing.

Longitudinal data reveals the influence this program has had on the participants' high school course choices and career directions. Evaluation of the program is being conducted centrally by SME-EF. Both qualitative and quantitative data has been gathered. The camp participants were surveyed before camp, after camp, three years post-camp; (10th grade year), and 6 years post-camp; (12th grade year). For comparison, a control group of 10th and 12th grade girls was given the same survey. Our first graduates are now college freshman. Surveys of their college plans have given us our first indication of the significant impact of the program. UW-Stout is beginning to see an influx of female students into engineering programs in our region and anticipates there will be a continued influx over the next decade as a direct result of the science, math and technology confidence the "STEPS for Girls" campers' gain during their summer week long camp.