Parental influence on child's science-career decision

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Parental influence and access to mathematics courses are likely to guide students to careers in science, technology, engineering, mathematics or medicine (STEMM), according to research from Michigan State University.

The findings of Jon Miller, MSU Hannah Professor of Integrative Studies, and colleagues were presented at a symposium titled "Tomorrow's Scientists and Engineers." at this year's meeting of the American Association for the Advancement of Science.

The education of more researchers, engineers and others in the field of science is critical, said Miller.

"Failure to build and maintain a competitive scientific workforce in the decades ahead," Miller said, "will inevitably lead to a decline in the American standard of living."

Miller used data from the Longitudinal Study of American Youth, which kept track of nearly 6,000 students from middle school through college, attempting to determine what led them to or guided them away from STEMM careers.

According to Miller, "The pathway to a STEMM career begins at home." He said this is especially true in families in which children were strongly encouraged to go to college.

"Only four percent of students who experienced low parent encouragement to attend college planned to enter a post-secondary program and major in a STEMM field," he said. "This compares to 41 percent of students whose parents strongly encouraged college attendance."

The research also found that sons were slightly more encouraged than daughters to do well in science and math.

Also influential, although not on the same level as parental encouragement, is the parents' education level. The research found that approximately 27 percent of the children of college graduates planned to major in a STEMM field, compared to 18 percent of parents with a high school diploma.

The research also reinforced the role mathematics plays in the pursuit of a STEMM career.

"Mathematics is a primary gateway to a STEMM career," Miller said, "beginning with algebra track placement in grades seven and eight, and continuing through high school and college calculus courses."

The researchers said high school and college science courses have "small, positive effects" on a student's decision to pursue a STEMM career, but is not at the level of mathematics.

Provided by Michigan State University