Addressing the STEM Divide

STEM Summer Camps to Promote Future STEM Leaders

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FOCUS Schedule

In Focus of the Future, a program designed for underrepresented leadership, may or may be college programs that support and mentor students going to high school and college campuses.

FOCUS: Post-Survey

Learning by Doing

Participants during the week in seven STEM-related learning activities in the STEM fields. They have also helped to understand the recruitment, retention, and advancement of women of color in STEM may be improved through research and practice.

Inquiry-based and Active Learning

Students engaged in learning by doing. Students work to groups and to facilitate learning, by identifying and developing new skills.

FOCUS

The FOCUS camp was designed to engage and pique the interest of students by offering exciting hands-on STEM activities. The camp is supported by Mason undergraduate and graduate mentors of color and STEM faculty who have a vested interest in their continued interest in a STEM career. Results from our surveys suggest students were thoroughly pleased with the activities and professionals in STEM they encountered during the week. The data collected from the camp clearly suggests that the program has had a great impact and the students were greatly motivated to pursue STEM degrees after the camp. Such early exposure to STEM supports children’s overall academic growth, develops early critical thinking and reasoning skills, and enhances later interest in STEM study and careers.

FOCUS: Pre-Survey

Participant responses on their interest in participating in college ready to do “Learning by Doing”

FOCUS: Post-Survey

Participant responses on their interest in participating in college ready to do “Learning by Doing”

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The President’s Council of Advisors on Science and Technology stated that 1 million more college graduates in STEM fields must be produced to meet the growing needs of our economy within the next decade. Unfortunately less than 40% of students entering college and declare science, technology, engineering, and mathematics (STEM) majors complete a STEM degree, thus there is an urgent need to solve retention issues for STEM majors across the country. The reasons why students are not successful in postsecondary schools range from personal to academic: economics, adjustment problems to college (first time away from home); poor study skills; poor critical thinking skills. The purpose of the one-week STEM Boot Camp is to introduce our incoming STEM (Biology, Chemistry, Math, Physics & Engineering) majors to the rigor of college prior to the start of the semester. The Boot Camp also serves as an opportunity to form learning communities within the group. The program has helped the students to build strong social and collaborative networks on campus and to become familiar with rules of competitive academic environments and the resulting pressure to manage conflicting priorities and expectations. Although the Boot Camps are open to all incoming College of Science students, we are particularly interested in those underrepresented women of color.

STEM Boot camp is a one-week pre-intentional program to expose incoming freshmen to content in gatekeeper classes such as Calculus I, General Chemistry, Introductory to Physics and Cell Biology in one week taught by faculty as well as give them exposure to undergraduate opportunities and other STEM career pathways. Both the FOCUS and STEM Boot camps are great models of intervention that have helped provide great insights to faculty in the STEM Accelerator program to understand important transition that represent the greatest points of loss of women of color from the STEM fields. They have also helped to understand how the recruitment, retention, and advancement of women of color in STEM may be improved through research and practice.