Summer Fling
Riding a wave of success, Indiana University continues to host a decades-old technology-focused summer camp for underrepresented middle and high school students.

When the days are long and the nights are warm, dozens of Midwestern teens will fall in love for the very first time – with motherboards and binary code - as participants in the Indiana University-Purdue University Minority Engineering Advancement Program (MEAP).

MEAP identifies students in grades six through twelve with demonstrated academic potential and introduces them to concepts and careers in engineering and technology. The group of 60-75 teens, all of whom are members of minority groups traditionally underrepresented in science and technology careers, take part in a weeklong summer camp on the campus of Indiana University-Purdue University in Indianapolis, Indiana (IUPUI).

Camp workshops are planned and led by MEAP staff and volunteers from the Pervasive Technology Institute (PTI) at Indiana University (IU), including many members of the Indiana University TeraGrid team. Students spend several days learning about computing through hands-on exercises, such as assembling their own computers from provided parts and troubleshooting any problems. They also learn basic computing concepts such as binary code and simple programming. IU TeraGrid staff introduces the concept of parallel computing through an exercise in which students solve a large and complex jigsaw puzzle in a matter of minutes by having several groups working on a section of the puzzle simultaneously. “The goal is to help the students feel comfortable exploring technology by taking away some of the mystery,” said Jenett Tillotson, System Administrator for the IU/TeraGrid Big Red supercomputer and volunteer facilitator for the MEAP computing workshops. “We help them think about different ways to approach problems and tasks. This type of critical thinking is key to becoming a successful technologist, scientist or engineer.”

“I learned about problem solving,” said AnnDrea Butler, a senior from Ben Davis High School in Indianapolis. “In some instances, it may take trial and error to come to a solution to a problem. Though, in other instances, calculations can be made to lessen the work and time needed. I also learned that one must pay close attention to detail when attempting to find a solution. One miscalculation can be the determining factor in whether you spend minutes or hours looking for the right answer.”

Patrick Gee, Director of MEAP, believes that the program is a win for everyone involved. “The program gives the opportunity for experiential learning that the students would not receive otherwise in the classroom,” said Gee. “We also use our college students in a counselor or coordinator role with the MEAP students. I believe it is as useful for the college students to learn how to put on these workshops as it is for the students who come in the summer to take them.”

“I have come to realize that teaching is a big part of any technical career and I have learned this through helping campers and team members learn and understand my work. The MEAP program provides an important opportunity for us as college students to acquire this skill set,” said MEAP counselor Ian Bazilio, an undergraduate student in the Computer and Information Technology department at IUPUI. “I love helping the campers learn about technology and also about teamwork. We try to expose the students to real-world applications of technology and to show them what it is like to work as part of a team to solve the kinds of problems they might find in the workplace.”

MEAP, which was founded in the 1970’s, has had numerous success stories along the way and is now seeing a second generation of students attending the program. Marsha Wells, of Indianapolis, attended the program in 1976 when she was a senior in high school. “It gave us, as African American students, exposure to engineering and technology, things we were not generally exposed to at that time,” she says. Ms. Wells went on to earn a degree in electrical engineering from Purdue University and has worked as an engineer for most of her career. In 2010 her sons, 14 year-old Montel and 16 year-old Marcus, also attended MEAP. Both hope to follow in their mother’s footsteps, pursuing future careers in engineering and technology. “I think learning what engineers do and how they became engineers will really help me,” said Montel Wells, who plans to become an architectural engineer.

Along with IUPUI student and staff volunteers, MEAP also brings in professionals from various engineering and technology companies. These professionals talk to the campers about their chosen profession and help to familiarize the students with a variety of different technology careers. The campers then get to visit the professionals in their laboratories and attend workshops to experience a real workplace environment.

“Sitting down with someone who is filled with the excitement of seeing these things for the first time reminds us of how much fun it is to work with computers,” said Andrew Arenson, Manager of Biomedical Applications for PTI and lead organizer of the computing portion of the MEAP summer camp. “It helps us as professionals remember how we ourselves first fell in love with technology.”

Relevant links:
Minority Engineering Advancement Program: http://www.engr.iupui.edu/meap/.
Indiana University: http://www.indiana.edu