WEEK LONG SUMMER CAMP FOR HIGH SCHOOL STUDENTS AND TEACHERS

During this week-long, non-residential Summer Camp held in the ESN Laboratory, 10 teachers from DAPCEP (Detroit Area Pre-College Engineering Program) and two students per teacher (chosen to represent gender, ethnic, and economic diversity) were participated. One goal was to help students appreciate what engineers do and inspire them about becoming one. DAPCEP is a long-standing, nationally recognized program with in-school, Saturday, and summer programs that prepare K-12 students for engineering. Organized to improve the diversity of the engineering workforce, DAPCEP uses engineers and public school teachers who work with students in regularly scheduled learning activities. Summer activities remediate student learning in math and science, but our project not only teaches about RT/ES networking, but also infuses understandings about an important technology into the DAPCEP program by teaching its teachers. Teacher-student teams worked collaboratively to learn central features of embedded systems networking. At the end of the week, each group will have a complete robot, doing various tasks such as following a pre-determined path.

10 copies of “Boe-Bot Robot Kit” from Parallax Inc., were used. This reprogrammable robot kit, includes a set of components (wires, resistors, and capacitors), sensors (photo resistors, bumpers, and infrared sensors), and hardware (chassis, motors, wheels, etc.) to assemble the robot’s body. Through increasingly difficult projects each day, students used web searches to locate basic information about components, used step-by-step procedures (with programming) to implement activities, and learn to operate their robot. Participants worked in the ESN Lab and interacted with engineering and technology students.