

MIT Outreach Groups Collaborate for Successful Summer Program

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This July, for the 2nd summer, a number of MIT outreach programs came together to offer 2 weeks of hands-on science and engineering learning for middle school students from Gloucester. It was part of a collaboration between the MIT Edgerton Center, the Gloucester Maritime Heritage Center (GMHC) and the Gloucester Public Schools. Jessica Garrett, coordinator of the program, calls it a “taste of MIT” where students get to sample a wide array of the possible things they could study in science and engineering, while learning in typical MIT fashion...with minds AND hands.

The program was so successful last year that planners decided to double the program’s size to accommodate 40 students. While one group of 20 students was at MIT, the other group was in Gloucester at the Maritime Heritage Center building underwater ROV’s (remotely operated vehicles) with MIT Sea Grant and the GMHC staff. Students learned to solder electrical connections, pour wax onto motors, and cut PVC pipe to make sea-worthy vehicles. They then used a remote control to guide their vehicle in a competition in the harbor.



At MIT, developers from the Sheller Teacher Education Program offered 2 days of programming experience on their StarLogo TNG modeling and simulation software. Students learned the basics of programming and then created their own 30

second video game. They were given the free software to further develop their games. One student commented, “It was cool to see the way games work!”

At the MIT Museum, students used LEGO® Mindstorms to program a robot to act like the iRobot® Roomba®, a robot vacuum. Their robot had to sense the edge of a table, back up and move around in a square. Student also got a tour of the exhibits, including seeing robots designed at MIT.



MIT Haystack offered 2 days of radio astronomy and space weather. Students viewed the large radio telescopes in action, were treated to lectures by astrophysicists,

and then used “very small radio telescopes” or VSRT’s to experiment with how radio waves move through different substances. A student mentioned that it was “interesting to look on something so complicated”

Lemelson-MIT planned a day of invention, where students learned about the original patents for ice cream making machines, did temperature experiments to find out what materials



work best, and then designed and built their own ice-cream-making-contraptions out of recycled materials and duct tape. The results were messy and delicious!



The MIT Edgerton Center had students exploring light, including multi-flash strobe light photography, high speed video, and using mirrors to get laser lights to go through 3-D mazes. Students were also given a tour of campus by MIT students where they learned all about “hacks” such as fire engines on the big dome, and window shades spelling out messages on dorms.

Mary Kay Taylor, Education Coordinator of the GMHC said that “this camp was even better than last year. They were a great group of students, and I think we really inspired some of them to pursue science further.”