

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Poster Session (P)

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ROADMAP TO SPACE ROBOTICS

Abstract

Robots and space have long been recognized as engaging topics that draw in and capture the imagination of the public. The combination of the two is especially potent, as was discovered at the March 2012 International Space University (ISU) Open Day in Strasbourg, France. Nearly two thousand students, parents, and members of the public visited ISU during a two-day period in which various exhibits and activities with a space theme were presented. The robotics exhibit was especially popular, and featured a message that students can get involved in robotics now, and that an interest in robotics can be pursued through tertiary education and into a professional career. This was presented in a three-tiered approach, with

entry-level robotics kits that students can get involved with now, a NASA Ames Education Mars Rover demonstrating tertiary-level engagement that students can pursue soon, and an informational presentation about NASA's Curiosity mission showing how students might pursue robotics professionally in the future.

For the "now" portion, the winning robots from a student robotics competition were demonstrated. The Lego Mindstorm robots ran within a mock up of the competition arena. The robotics were required to demonstrate autonomous behaviour, staying within a defined border, collecting as many pebbles as possible, and avoiding obstacles - whether they were big rocks or small children!

For "soon," the students got a demonstration of the NASA Ames Education Mars Rover ("Dusty") that is used for masters level research at ISU. Dusty can be controlled with a joystick, or an iPhone interface.

For "future," the presenters talked about how they had started with projects like the Lego Mindstorm to learn skills necessary for the robotics work they did in graduate school and how that would lead to working on space robotics missions in the future.

From the success of the multilingual ISU Open Day, several key components to successful outreach emerged: the importance of hand-on interaction with robots, spokespeople with whom the students can identify, and presenting students with a roadmap to inspirational and achievable goals.