



## Engineering Robotic Solutions

As the nation looks to address important environmental issues, youth are at the forefront of the discussion. In 4-H, young people are taught the skills they need to become the nation's future leaders. Consequently, it is important for youth to understand the challenges faced by the global community, and the opportunities to make a positive impact on communities and ecosystems.

For the fifth annual *4-H National Youth Science Day (NYSD)*, The Ohio State University Extension designed the *4-H Eco-Bot Challenge*: the 2012 National Science Experiment. The experiment introduced youth to robotic engineering concepts as they programed an autonomous robot to clean up a simulated environmental spill.

### 4-H Youth Demonstrate Environmental Responsibility

On Nov. 30th, 2012, young people at the Mecklenburg County Cooperative Extension, Homeschool 4-H interest meeting will become scientists for the afternoon during the *4-H Eco-Bot Challenge*, youth will enhance their engineering skills by assembling their own Eco-Bots and surface controls to manage an environmental clean-up. Youth will then test the interaction between the Eco-Bot's design features and various surface control configurations to determine the most effective clean-up solution for the simulated spill.



Throughout the year, 4-H Science programming – researched and developed by the 111 land-grant colleges and universities across the nation that oversee 4-H youth development programs in every state – provides youth with an opportunity to take on science challenges and understand the impact of the top issues that face their region.

### 4-H High-Quality Positive Youth Development

With high-quality positive youth development programs like 4-H *NYSD*, youth are introduced to highly relevant concepts and solutions that will ensure their contributions to their communities today, and their success as global leaders tomorrow. Youth development scholar, Dr. Richard Lerner, works with researchers at the Institute for Applied Research in Youth Development at Tufts University to conduct the *4-H Study of Positive Youth Development*. The longitudinal study has found that, when compared to their peers, young people involved in 4-H are:

- Nearly two times more likely to get better grades in school
- Nearly two times more likely to plan to go to college
- Nearly three times more likely to participate in science, engineering, or computer technology programs.

By connecting important scientific lessons to civic engagement, 4-H youth become a living, breathing, culture-changing movement for doing the right thing, breaking through obstacles and pushing the country forward to successfully face the challenges of the future.

### One Million New Scientists. One Million New Ideas.

For more than 100 years, 4-H has been at the forefront of teaching youth about science, engineering and technology. *4-H National Youth Science Day* is an important annual part of 4-H's *One Million New Scientists*, with a bold goal of attracting one million new youth to science, engineering and technology programs by the year 2013.

Now entering its fifth year, *4-H National Youth Science Day* seeks to spark an early youth interest and leadership in science. Currently, more than five million young people across the nation participate in 4-H science, engineering and technology programming in topics as varied as robotics, rocketry, wind power, GPS mapping, agricultural science, water quality and biofuels. **For more information about 4-H National Youth Science Day, visit [www.4-H.org/NYSD](http://www.4-H.org/NYSD).**