



## Facing a Critical Challenge

Although the United States is currently the world's economic and military leader, we are at a critical juncture. We must adapt to meet the evolving economic and national security landscape of the 21<sup>st</sup> century. At the core of this challenge is our nation's proficiency in science, engineering and technology. Too many young Americans do not have the science, engineering and technology career skills necessary to succeed—and meet our country's needs—in the future:

- Only 18 percent of high school seniors are considered proficient in science (NAEP 2000)
- A mere 5 percent of college undergraduates earn degrees in science and engineering (Rising Above the Gathering Storm 2006)

In the next decade, our nation will face a significant workforce shortage in the critical science, engineering and technology fields that will put our leadership at risk—unless action is taken.

## Working Towards a Solution

With 4-H and the Cooperative Extension System's (CES) direct connection to the cutting-edge research and resources of the nation's 106 land-grant universities and colleges, we are strategically positioned to strengthen the U.S. global competitiveness and leadership in science, engineering and technology. The 4-H Science, Engineering and Technology (SET) program is the national priority of the 4-H Youth Development Program for the next five years.

Currently, 4-H SET activities reach 5.9 million youth\* with hands-on learning experiences that foster exploration, discovery and passion for the sciences. The combination of content and context inherent in 4-H club and camp programs is proven to have a positive effect on youth, resulting in young adults who are prepared to contribute, excel, and lead in their communities and workplaces.

4-H will address our nation's critical challenge by preparing **1 million new young people** to excel in science, engineering and technology. As a public-private partnership, 4-H can focus resources and expertise through SET to improve science literacy; increase the number of American students seeking undergraduate degrees in science, technology and engineering; and increase the number of young adults pursuing careers in these fields. Other primary components of the national 4-H SET program include:

- Create and nationally disseminate innovative SET curriculum that supports the development of scientific literacy within the context of non-formal experientially-based instruction
- Foster and support 4-H clubs, camps and after-school programs that employ SET curriculum
- Identify a 4-H SET liaison from each land-grant institution to stay connected to state and local CES staff and volunteers
- Provide SET training for 4-H youth development professionals and volunteers

The national 4-H SET Leadership Team—drawn from all facets of 4-H and Extension—is crafting a framework for progress that outlines 4-H SET's objectives in seven key areas: program development, professional and volunteer development, curriculum development, evaluation and research, communications, collaboration and partnerships, and funding. This framework is based on four guiding principles that give 4-H a clear niche in the SET arena. They are:

- Science, engineering and technology learning takes place in the context of the Essential Elements of 4-H Youth Development.
- 4-H's approach to science, engineering and technology must include youth/adult partnerships.
- Programs are based on National Standards.
- Programs are delivered in a variety of setting and locations and involve diverse audiences.

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\*Before duplications are eliminated.