

## NIEHS reaches out at nation's largest STEM event

By Eddy Ball

Members of the NIEHS Office of Science Education and Diversity (OSD) were part of a trans-NIH effort April 26-27 at the 2014 [USA Science and Engineering Festival](#)

(<http://www.usasciencefestival.org/2014-festival.html>)

in Washington, D.C., as well as pre-event activities April 25.

More than 750 leading science, technology, engineering, and mathematics (STEM) organizations gathered at the two-day expo, held at the Walter E. Washington Convention Center. The event, attended by an estimated 350,000, marked the culmination of school programs, contests, and events held nationwide during 2013.

### Linked Video

[For a sample of the excitement of the festival, watch the highlight video from the second festival, held in 2012 \(04:59\)](#)

Along with helping to staff the NIH Pavilion, [OSD Director Ericka Reid, Ph.D.](#), and K-12 Science Education and Outreach Coordinator [Huei-Chen Lao](#), with some additional help from [Mary Gant](#) of the NIEHS Bethesda Office, gave a demonstration of the popular respiratory health exercise. The exercise was developed by NIEHS postdoc volunteers, for use at their Citizen Schools outreach programs at [Lowes Grove Middle School](#) in Durham, North Carolina (see [story](#)).

Visitors to the exhibit tested their lung capacity, using a regular-sized straw to simulate a normal airway, and a cocktail straw to simulate a restricted airway that asthma patients suffer, exhaling fully into an inverted 5-liter water-filled bottle set inside a bucket filled with water. The amount of water displaced by the air indicated the participant's lung capacity.

The festival was free and offered attendees the additional opportunity to win an iPad 2, video games, science books, tee shirts, and other prizes, as well as a chance to meet [They Might Be Giants](#) and [Bill Nye the Science Guy](#).

"It was an incredible experience," Reid said afterwards, "packed full of interesting science and engineering activities for people of all ages." The festival featured more than 3,000 hands-on STEM activities and some 150 stage shows.

### NIH on the front lines of STEM promotion

The One NIH effort was coordinated through the NIH Office of the Director by [Jennifer Gorman Wright](#), communications director for the Division of Program Coordination, Planning, and Strategic Initiatives. In addition to NIEHS, more than 20 NIH institutes and centers participated in the ten meetings to plan activities, NIH Pavilion layout and exhibitor logistics, and coordination of NIH volunteers.



*NIH was an official partner of the 2014 USA Science and Engineering Festival, joining a number of private and public sector entities lending their support to make the event a rousing success.*



*Shown at the outreach program in May 2013 (see [story](#)), Lao, left, and Reid carried good ideas from the field to this year's USA Science and Engineering Festival. (Photo courtesy of Steve McCaw)*



*NIEHS biologist Mercedes Arana, Ph.D., left, led students through the prototype lung capacity exercise in 2012 at Lowes Grove Middle School. Reid and Lao demonstrated the popular exercise at the festival. (Photo courtesy of Steve McCaw)*

Hundreds of NIH scientists and staff committed time and effort to provide challenging and interactive exhibits. NIH also hosted career exploration information sessions in the Career Pavilion, where attendees could meet with NIH scientists, health communicators, and other health professionals, to find out why they love science and have committed to science as their career choice.

In addition to the NIEHS lung capacity measurement exercise at the Health and Medicine Pavilion, attendees could also find out how NIH researchers are advancing science using new 3-D printers that transform digital files into physical objects, see the brain in action, and learn how to become a forensic detective.

Along with broad participation by NIH, the festival has enjoyed enthusiastic support from other federal agencies and the White House. President Barack Obama welcomed participants to the 2012 festival, and White House Office of Science and Technology Policy Director John Holdren, Ph.D., kicked off this year's event.



*As visitors at the NIEHS demonstration in Washington also learned, the proof (for lung capacity) was in the bucket. (Photo courtesy of Ericka Reid)*

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