http://www.air.org/news/pr/8thGrader.aspx

AMERICAN INSTITUTES FOR RESEARCH

More AIR News

FOR IMMEDIATE RELEASE
NOVERMBER 14, 2007

CONTACT:
LARRY MCQUILLAN, 202-503-5119

8th Graders in Most U.S. States Performing Better in Math and Science than Students in Most Foreign Countries

Students in Highest Achieving U.S. States Rank Significantly Below Students in Highest Achieving Countries

First Ever Comprehensive State-by-State Comparison of U.S. Students' Math and Science Proficiency Versus International Students

Washington, D.C. – Students in most U.S. states are performing as well as or better than most students in foreign countries in math and science, but the highest achieving states are still significantly below the highest achieving countries, according to a new study by the American Institutes for Research (AIR).

The first-of-its-kind report provides a comparison of the mathematics and science skills of 8th-grade students in each of the 50 states, the District of Columbia and Department of Defense schools with those of their counterparts around the world. The report provides international benchmarks to help states see how their students are doing within an international context.

"If you think of states and nations as in a race to prepare the future generation of workers, scholars and citizens to be competent and competitive in a technologically complex world, then the states are in the middle of the pack," said Dr. Gary Phillips, a chief scientist at AIR and author of the report. "The bad news is that even our best performing states are running far behind the highest performing countries."

Dr. Phillips, who is nationally known for his expertise in large-scale assessments and complex surveys, served as the acting commissioner of the National Center for Education Statistics (NCES) within the U.S. Department of Education from 1999 - 2002.

The report, "*Chance Favors the Prepared Mind: Mathematics and Science Indicators for Comparing States and Nations*," classifies student performance levels as: Basic, which indicates a partial mastery of prerequisite knowledge; Proficient, solid academic performance; and Advanced, which shows superior performance.

In mathematics, students in 49 states and the District of Columbia are behind their counterparts in Singapore, Hong Kong, South Korea, Taiwan and Japan. Students in Massachusetts are on a par with Japanese students, but trail the other four nations. In science, students in Massachusetts, Minnesota, Montana, New Hampshire, North Dakota, South Dakota, Vermont and Wisconsin trail only students in Singapore and Taiwan, while performing equal or better than students in the other 45 countries surveyed.

"More than a century ago Louis Pasteur revealed the secret to invention and innovation when he said 'chance favors the prepared mind'. The take away message from this report is that the United States is loosing the race to prepare the minds of the future generation," said Dr. Phillips.

Students in the District of Columbia had the lowest U.S. performance in mathematics (they did not participate in the science test). In math, the average D.C. student is at the Below Basic level, putting them behind students in 29 countries and ahead of those in 14 countries. In science, nine states are at the Below Basic level: Florida, Arizona, Louisiana, Nevada, New Mexico, Alabama, Hawaii, California and Mississippi.

"The report shows the United States needs to substantially increase the scientific and mathematical competency of the general adult population so citizens can better understand and address many of the world's most pressing problems," said Dr. Phillips.

The AIR study describes state and international education indicators for mathematics and science using state data collected by the 2005 and 2007 National Assessment of Educational Progress (NAEP) and international data collected by the 2003 Trends in International Mathematics and Science Study (TIMSS) in grade 8.

Data from the two studies were reanalyzed and expressed in the same metric through statistical linking. By expressing both assessments in the same metric, states within the United States can use TIMSS results as international benchmarks to monitor progress over time.

The report suggests the United States needs more people working in the scientific disciplines in order to better compete in the global economic environment.

Other findings include:

- At the national level, several Asian countries generally outperform the United States in both math and science.
- In both mathematics and science, the United States is generally comparable to other English-speaking nations and to European countries, while many African and Middle Eastern countries perform significantly below the United States.

- The highest performing countries are the same ones that grant the largest proportion of college degrees in science, technology, engineering, and mathematics.
- In mathematics, only five countries reach the Proficient level of achievement: Singapore, Hong Kong, South Korea, Taiwan and Japan. Twenty-two countries are at the Basic level (including the U.S.) and 19 counties are Below Basic.

In science, only two countries are at the Proficient level: Singapore and Taiwan. Twenty countries are at the Basic level (including the U.S.) and 24 countries are Below Basic.

The full report can be downloaded here.

About AIR

Established in 1946, with headquarters in Washington, D.C., the American Institutes for Research (AIR) is an independent, nonpartisan not-for-profit organization that conducts behavioral and social science research on important social issues and delivers technical assistance both domestically and internationally in the areas of health, education, and workforce productivity.

###

American Institutes for Research | 1000 Thomas Jefferson, NW | Washington, D.C. 20007