

STEM EDUCATION HEARING

Wednesday, February 3, 2010

Opening Statement

Alan B. Mollohan, Chairman

Good morning; the hearing is called to order.

Welcome to the first hearing of the Subcommittee on Commerce, Justice, and Science for fiscal year 2011. Before we begin our initial hearing, a bit of housekeeping: I would like to iterate for the benefit of the members of the Subcommittee, that it is my intention to recognize in order of seniority those members present at the start of each hearing, followed by members in order of their attendance. This continues the policy that was in place last year.

Turning now to today's business: in testimony before this subcommittee last year, it was stated that U.S. graduate education in STEM is the model for the world, and undergraduate STEM education is among the best in the world. However, testimony also revealed that K-12 STEM education in the United States is woefully lacking in preparing our students to compete and innovate in the changing world economy. We learned last year that it is essential for students -- before the age of 10 -- to see themselves as becoming scientists and engineers or they will not choose these fields for study when they are older. Advances in science, technology, engineering and mathematics (STEM) hold the key to the future economic growth of the United States, and the essential resource on which this progress will be built is today's children.

In fiscal year 2010, this subcommittee added appropriations for K-12 STEM education and STEM teacher preparation to the budgets of NSF, NOAA, and NASA, with the expectation that these funds will be used in part to improve STEM education in grades K-6 and that they will contribute to efforts to imbed inquiry-based instruction in science education. The fiscal year 2011 budget request continues many of these investments.

Our hearing is particularly timely given Tuesday's *New York Times* op ed by Susan Engel of Williams College entitled, "Playing to Learn". In it she describes an ideal elementary education,

"In our theoretical classroom, children would also spend a short period of time each day practicing computation — adding, subtracting, multiplying and dividing. Once children are proficient in those basics they would be free to turn to other

activities that are equally essential for math and science: devising original experiments, observing the natural world and counting things, whether they be words, events or people. These are all activities children naturally love, if given a chance to do them in a genuine way.”

Achieving this ideal is a key goal of our appropriations for STEM education. Today and tomorrow, we will hear from witnesses who have examples of improvements to STEM education that are on-going. Through their testimony, we will see the effects of federal investments and learn more about the challenges of improving STEM education and adopting inquiry-based instruction.

Today we will hear from Dr. Oliver Hill of Virginia State University and Dr. Eleanor Miele of Brooklyn College. Dr. Hill has helped improve math achievement of students in the public schools of Petersburg, Virginia. His testimony will shed light on another point in Dr. Engel’s op ed; she states,

“In order to design a curriculum that teaches what truly matters, educators should remember a basic precept of modern developmental science: developmental precursors don’t always resemble the skill to which they are leading.”

Dr. Miele has just written a textbook on inquiry and has worked with K-12 teachers to include inquiry in their science teaching and to make effective use of their surroundings in New York City. Thank you both for coming.

Following the opening statement of Ranking Member Wolf, we will ask each of you to provide a summary of your written testimony, which will be included in the hearing record, and then we will go to questions from subcommittee members.