OPENING STATEMENT

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Ranking Member, U.S. House Committee on Science

Hearing: *K-12 Science and Math Education Across the Federal Agencies*

March 30, 2006

Mr. Chairman, I am pleased you have convened this hearing to review federal efforts to improve K-12 science, technology, engineering and mathematics education - or STEM education for short.

The importance of STEM education for the nation's future well-being has been stressed in many reports over the past few years, most recently by the Augustine report from the National Academies, *Rising Above the Gathering Storm*.

The *Gathering Storm* report lays out specific recommendations for actions the nation needs to take now to remain competitive in the 21st Century. The report's key recommendations focus on K-12 STEM education, and it identifies the area of greatest need - teachers.

The report points out that 69% of middle school students in the U.S. are taught by teachers with neither a college major in math nor certification to teach math. Similarly, 93% of these students receive instruction in physical sciences from teachers with no major or certification in the field.

While things are a bit better for high school students, we still find 31% of students nationally are taught math by teachers without majors or certification in math, and 63% by teachers without majors or certification in the physical sciences.

Two weeks ago the Research Subcommittee held a hearing on undergraduate STEM education. One of the witnesses was Carl Wieman, a distinguished physics professor who received the 2001 Nobel Prize in Physics. Dr. Wieman is concerned about science education and has put his money where his mouth is. He has been using his Nobel award to fund efforts to improve undergraduate physics education.

He said at the hearing, and I quote, "unless you improve science education at the college level first, you are wasting your time and money on trying to make major improvements in K-12 [education]". I think Dr. Wieman and the Augustine report have it exactly right.

The K-12 STEM education priorities ought to be to improve the undergraduate education of new teachers and to increase substantially the professional development opportunities for current teachers, in order to raise their subject knowledge and teaching skills.

The second important message that came out of the Research Subcommittee hearing was strong agreement from the panel of witnesses that NSF should be a major player in Federal efforts to improve STEM education. Unfortunately, the K-12 STEM education component of the President's American Competitiveness Initiative has different priorities and assigns different agency roles.

It focuses most of its resources on curriculum development and places all responsibility on the Department of Education, ignoring potential contributions from NSF or other Federal agencies that support K-12 STEM education efforts.

I look forward to learning the rationale for these choices from Secretary Spellings and Director Bement, as well as from our other witnesses.

To gain the maximum advantage from the relatively small Federal investment in K-12 STEM education, it is important to identify and concentrate on replicating programs that work. This is only possible if effective mechanisms are in place for program coordination, planning, and assessment across the government.

Although such mechanisms exist on paper, there is little evidence they actually work. The subcommittee charged with this role under the National Science and Technology Council has been invisible.

A new entity, the Academic Competitiveness Council, or ACC, is now being established as a result of legislation passed this year. Chaired by the Secretary of Education, it was tasked to identify Federal STEM programs, evaluate program effectiveness, identify duplication, and recommend how to integrate and coordinate these programs. In short, the ACC was tasked to do what the NSTC subcommittee was presumably responsible for doing.

I hope to hear what the status is of this new effort at coordination and planning and to find out whether there is any basis for hope that it may succeed. Without strong congressional oversight, I'm not confident the ACC will be any improvement.

The Augustine report rightly states that "laying the foundation for a scientifically literate workforce begins with developing outstanding K-12 teachers in science and mathematics." I believe this is a goal that can and must be achieved. I hope to come away from his hearing having gained confidence that the agencies represented here are developing plans and programs to help meet that goal.

Mr. Chairman, thank you, and I yield back my time.