

## **NSF DIRECTOR VISITS APPALACHIAN SCHOOLS**

Dr. Arden Bement, Director of American National Science Foundation, visited the Appalachian Mathematics and Science Partnership (AMSP) Program September 19<sup>th</sup> and 20<sup>th</sup>, 2007 to learn more about the region, its schools and the effects of NSF involvement in AMSP and its precursor, the Appalachian Rural Systematic Initiative (ARSI) in improving STEM education in the region.

AMSP is a partnership of ten (10) institutions of higher education (IHE) and fifty-six (56) school districts in the Appalachian region of Kentucky, Tennessee, Virginia and West Virginia with the University of Kentucky as the lead institution.

The first day of the visit included an overview of the project and discussion of initiatives and their impact on STEM education. This was followed by meetings with University officials, IHE partner administrators and faculty, outreach professors, K-12 teachers and administrators from partner school districts and state legislator.

The second day was reserved for visits to two rural schools. The first school was a small rural school lying at the foothills of the Appalachian Mountains. The school is classified as a “school wide Title I School” due to the high poverty and resulting high percentage of students qualifying for the free and reduced lunch program.

In 1999 a state audit was mandated for the entire school program. On a scale of 140 the Mathematics Index score was 40 and the Science Index was 53. In 2006 these scores were 99 and 102, respectively, both 15% or more above the state level. This improvement was accomplished through the school’s involvement in the ARSI program followed by involvement in AMSP. At the school Dr. Bement visited a second grade mathematics class and a fourth grade science class, met with teachers, the principal and the ARSI master teacher who worked with teacher, administrators and parents over the 6 year period to improve teacher and student performance.

The second school visited was a middle school which has been involved in AMSP since its beginning through teacher workshops and AMSP’s Partnership Enhancement Program (PEP). Being one of the first school districts to earn a PEP grant it worked with an adjoining AMSP partner district and an University outreach professor to train student achievement coaches to facilitate and lead collaborative development of formative and summative assessments of each middle school and high school mathematics and science course. The district is currently involved in a second PEP focused on the middle school, a year-long project where science teachers are developing and implementing new strategies in instructions using the “6-E” learning cycle model. After implementation of these programs based on Kentucky state assessments, the district’s elementary schools have shown a 22 percent increase in the Mathematics Academic Index and 14 point increase in Science Academic Index. The overall changes in student achievement are associated with decreases in the Novice and Apprentice categories and increases in the Proficient and Distinguished indices on these statewide norm reference tests. Dr. Bement visited classes and met with the principal, mathematics and science teachers and the district supervisor of instruction to gain their insights on the program and its impact.