Center for Applied Science and Mathematics for Innovation and Competitiveness (CASMIC)

"Careers related to science, technology, and mathematics have increased by 24% in just a few years in the United States," reports Mark Heckler, Provost for the University of Colorado at Denver and Health Sciences Center. "During the same period of time, higher education institutions have experienced a systematic disinvestment; a decrease in international students who are now responding to the increased investment in higher education within economic-competitor nations." "The National Academy of Science calls this threatening situation (for the United States economy) 'a gathering storm.'" Given this national context, Dr. Heckler announced the contribution of the University of Colorado Denver (UCD) to addressing the issue of adequately preparing students in sufficient numbers to fill the math and science knowledge and skill needs of our national economy.

Carole Basile, Ph.D., announced the purpose of CASMIC during the kick-off event on September 8, 2006, at the Tivoli Center on the Auraria Campus. "CASMIC is designed to promote partnerships between the University of Colorado at Denver and Health Sciences Center, school districts, and other institutions of higher education." Approximately 50 educators from multiple public and private entities were represented at the kick-off. Following Dr. Basile's overview of the goals of this initiative, she invited those present to begin immediately to discover and create connections that promote the study of mathematics and science among potential partners represented. Within minutes, the room was buzzing with animated conversation and the trading of business cards. As examples, the National Park Service educators connected to a local community college and a Museum of Nature and Sciences educator connected with the UCD Mathematics Department Chairman.

Why do so many of us freely say, "I am really not very good at math and science"? Why is our attrition rate from the study of mathematics and science so high at UCD among our freshmen? How do behavioral and social environments influence math and science learning? How can we promote innovation across the sciences, mathematics, engineering, and technology to expand interdisciplinary learning, teaching, and research? Developing initiatives, partnerships, and funding to find answers for these kinds of questions and develop programs that respond will be the work of CASMIC.

The Rocky Mountain Middle School Math and Science Partnership (RM MSMSP) is one initiative under the CASMIC umbrella that was initiated in fall 2004. It focuses on improving science and mathematics instruction for middle school students. The National Science Foundation funds this 5 year initiative. Carole Basile, Ph.D. and Doris Kimbrough, Ph.D., co-direct the RM MSMSP. The complex discussion, classroom innovations, and educator focus emerging from this effort provide a valuable model for other such initiatives under CASMIC.