Summer Workshop in Computer Technologies
for Middle and High School Math and Science Teachers
at Southwestern University in Georgetown, Texas
August 1 – August 12, 2011 (2 weeks)

The purpose of this hands-on workshop is to provide middle and high school math and science teachers with exposure to and expertise in some common computer science tools and technologies. This workshop will help teachers gain both general and specific skills that can be used in teaching and general professional work, emphasizing computer technology skills that are used in the STEM (Science, Technology, Engineering, Mathematics) fields. Through a US Department of Education grant, **teachers will be paid a stipend of $100/day** to attend the 10-day workshop, and lunch will be provided.
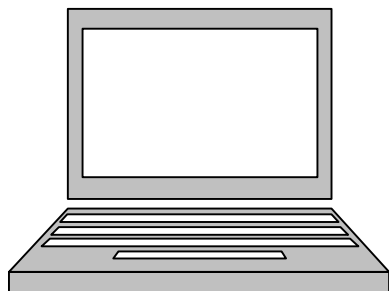
By participating in the workshop, teachers will:
- be better prepared to include connections to computer technologies in their classes
- engage and direct students in projects using computer technologies and tools
- give advanced or GT students additional directions to pursue on their own, using freely available or commonly available software tools
- increase their expertise in Excel, html, graphing calculators, and other commonly used computer technologies in their professional life
- increase their own knowledge and professional development in the area of computer science and technologies

This workshop is ***not*** intended to require any changes in curriculum in order to be useful to teachers, nor will teachers be able to teach computer programming at the conclusion of the workshop. The workshop ***will*** expose teachers to terminology, tools, and ways in which computer science technology and topics are readily associated with math and science topics that are already taught. In many math and science classes, short and easy connections to computer science can be instructive and helpful. In addition, since enrollment in computer science classes at the high school and university level have been declining and demand for computer science professionals has been rising, it can be particularly helpful to students to see real ways in which computers can be used as tools in the sciences, helping to counter the perception of computer science as only a 'geeky white male' endeavor.

Particular areas to be addressed in the workshop include:
- Computer applications and concepts of computation
- Computer representation of data
- Excel programming, esp. calculating functions from data, plotting/graphing data, and some advanced topics
- Graphing calculators
- Webpages, web applications, and html
- Java applets, and inclusion of applets in web pages
- Algorithmic design of processes
- Beginning programming in Alice, Scratch, and/or Java

A significant portion of the workshop will be hands-on and collaborative, in a computer lab. The workshop will not use any proprietary software except Excel; all tools used can be freely downloaded for classroom or directed student use after the workshop. Handouts and electronic resources will be provided. The focus of the workshop will include both the use of tools, and also understanding the underlying principles that determine how the tools are useful in different kinds of problems and situations.

The intended audience for this workshop is middle and high school math and science teachers who would like to learn more about computer science and the use of computer technologies in the classroom. The workshop will be geared toward those who have limited proficiency with computer technologies. However, those who already use computers professionally and/or in the classroom, or who took one or more computer science classes in college, are also welcome to attend; there will be opportunity for all teachers to explore particular programs and technologies further, according to their own abilities and interests, with guidance from the instructor.

A certificate of participation and successful completion of the workshop will be presented at the end of the workshop. Classes will be held from 9am-4pm each day, on the campus of Southwestern University in Georgetown, and taught by a Southwestern CS/Math professor. Housing is not provided.

For more information or to register for the workshop, please contact Suzanne Buchele at bucheles@southwestern.edu or (512) 863-1361. Enrollment is limited to 16 teachers. It is expected that the same workshop will be offered in the summer of 2012 and 2013 as well, so if you can't make it this summer, consider planning the workshop into your schedule in 2012 or 2013!