Real Science in the 6-12 Classroom

Project Leader: Ann Draughon, Ph.D., Professor and Co-Director Food Safety Center of Excellence

Address: The University of Tennessee
2605 River Rd., Department of Food Science & Technology
105 Food Safety and Processing Bldg
Knoxville, Tn 37996
865-974-8400 (PH) 865-974-2750 (Fax) draughon@utk.edu

Project Duration: Approximately One Year -April 1, 2003 to May 30, 2004

Relationship to Gamma Sigma Delta Objectives:

This enrichment project will reach out to disadvantaged schools in Tennessee which is ranked 49 out of 50 states in educational test scores and opportunities for young people.

The science of agriculture is often misunderstood by the majority of young people who have no farm background. This program will also provide the opportunity to share with young people about the exciting job opportunities which are available in the field of agriculture. Gamma Sigma Delta, as the honor society of Agriculture, is the ideal society to inform the next generation of agricultural scientists about these opportunities.

Outcomes:

1. Twelve classrooms were visited and science programs provided in Scott, Blount, Cocke and Knox counties. These programs were focused on common microorganisms found in foods and on handling foods safely to prevent foodborne illness. We brought culture media, microscopes, prepared slides, etc into the classroom and shared with students a world that many had never seen. We also used the “Glo-Germ” demonstration to illustrate how bacteria (“germs”) can be transmitted from one person to another and to the surroundings. Glo-Germ is not really bacteria but a fluorescent powder that glows under a black light. By “contaminating” my hands (or that of the other instructors who visited) with GloGerm and then shaking hands with students as they entered the classroom, we managed to transfer “Glo-germs” to the students who managed to contaminate their books, hair, nose, each other, and desk with the germs. We then turned on a black-light (UV light) to show them what had happened and explained that this was how virus and bacteria that cause illness are transferred from people to food or from people to people. We then had them wash their hands and reexamine them. They were astonished that the brief rinse that most of them did was not sufficient to remove the “germs”. We then had them go back and wash properly with soap and water for 15 seconds, paying attention to nail and between fingers and

the germs were gone. A lot of excitement was generated and the fun learning activity was enjoyed by all.

2. As a result of these demonstrations, we have had 5 requests to assist with science fair projects or other class science projects (ie. Checking tables and playground equipment at fast-food restaurants for bacteria) and one of the middle school science fair students made it to the national Discovery Young Scientist Awards in 2005. He is the first Tennessee middle school student to ever do so and he was highlighted in a Discovery Channel Science special on December 18, 2005.

3. While visiting classrooms and talking with teachers in Oneida, Del Rio and Fairview, we were able to make contact with teachers and principals to discuss the possibility of integrating food safety education into the core curriculum (Math, English, Science & Social Science) in Tennessee middle schools. Currently food safety is allocated 15 minutes time each year in the Nutrition curriculum which is not even core curriculum. In 2005, we were able to get support and commitment from the Tennessee Commissioner of Education, teachers and principals in Tennessee schools to implement the integrated food safety curriculum if financial support could be obtained. I was happy to learn that USDA funded our proposal "Implementing a Dynamic Interdisciplinary Food Safety Curriculum Targeted At Middle School Students" in fall of 2005 for $583,000. This proposal is the most extensive collaborative effort that we have previously developed and stretches across colleges, institutes, state level educators and of course middle school teachers and principals at the county level. An exciting component of the program is directed by Janie Burney who will teach Extension agents how to share the curriculum with teachers in other counties across Tennessee with our goal of reaching over 50 counties in Tennessee by year 3 of the project. We will of course promote the Institute of Agriculture and leave recruiting and information materials wherever we go to encourage students to consider agricultural sciences as a career and educational option.

In view of the recent Newsweek front page story about the loss of interest in science as a career option in the United States, perhaps our small effort can be helpful in letting young people know that science is a fun and exciting topic which they can enjoy doing and studying throughout their life.