



## Bi-weekly Newsletter

June 1, 2006

### "What I Learned From My Experience as a GK-12 Fellow"

It is the intent of the NSF GK-12 program to afford Fellows the opportunity to acquire additional skills that will broadly prepare them for professional and scientific careers in the 21<sup>st</sup> century. Many of these skills are not normally emphasized in traditional STEM graduate programs and they may, in fact, help provide additional career options for the Fellows. Expected outcomes of the NSF GK-12 program include improved communication, teaching, and team-building skills for the Fellows. In addition, it is hoped that Fellows will recognize the continued need for their participation in community outreach to K-12 science education as they proceed with their own scientific careers.

Over the past four years 23 Fellows have participated in the GK-12 program at UNCW. We asked them to reflect upon their GK-12 experiences and answer the following questions:

Do you feel that your

- communication skills (oral, written, technology-based, interpersonal)
- teaching skills (presenting and explaining material, managing discussions, assessing an audience's understanding)
- team-building skills (flexibility and/or ability to compromise, ability to mentor others or be mentored by others, take initiative and follow through, time management)

improved as a result of your experiences as a GK-12 Fellow? *If so, how did these improvements impact your professional life after completing your fellowship?*

Do you recognize a need for your participation in outreach to the K-12 science education community? *If so, have you participated in any outreach?*

### Survey Results

Of the 21 Fellows who answered these questions, the majority felt that most skills had improved as a result of their participation in GK-12. The exceptions involved their writing and technology-based skills which they felt were strong prior to becoming GK-12 Fellows. The Fellows were unanimous in their agreement that their oral communication and interpersonal skills had significantly improved as a result of working with a diverse group of people who varied in age, position, interests, and educational, socioeconomic and cultural backgrounds. This diversity also necessitated that the Fellows' team-building skills improve. All the Fellows agreed that the improvement they experienced in their communication, teaching and team-building skills has had or will have a positive impact on their professional careers. All of the Fellows recognize the importance of outreach. Two-thirds of them have participated to some degree, but the other third commented that outreach is not valued by their present employer or institution of higher learning.

Skill	Number of Fellows Who Saw Improvement
<b>Communication</b>	
Oral	21
Written	11
Technology	10
Interpersonal	21
<b>Teaching</b>	
Presenting	21
Managing	21
Assessing	19
<b>Team-building</b>	
Flexibility	19
Mentoring	19
Initiative	18
Time	21
<b>Outreach</b>	
Recognition of	21
Participation in	14

## Fellow's Reflections



### Communication & Teaching Skills

“It’s almost impossible to come out of an experience like this one and not have your communication skills somewhat improved. You’re constantly interacting with a wide group of people...”

“Standing in front of an audience not only forced me to become more comfortable with my own voice...but it allowed me to sharpen my ability to think on my feet and readily access my scientific knowledge...”

“The experience of standing in front of a classroom and fielding questions helped tremendously in an interview situation.”

“I have learned not to dumb down the science information but to try and make it more meaningful to my audience.”

“Being able to explain new and complex ideas effectively to others is very important in a scientific career. It can mean the difference between getting or not getting the post-doc or tenure-track position.”

“In my career I am frequently sent to training seminars. When I return I have to teach what I have learned to the rest of my co-workers.”

“I am much better at reading my audience and communicating the information that I need to get across so that work can get done.”



### Team-Building Skills

“Participating in the GK-12 program was the first time since high school that I was paired with a group of diverse individuals who all had a common goal and worked as a group to achieve such a goal.”

“I understand more than ever that there are many people working towards a single goal and that means many suggestions and opinions.”

“...collaborating with the teachers allowed me to see what it was like to work closely with someone who has a much different education background. I can honestly say this prepared me for my job working alongside people who may have business or finance backgrounds.”

“...interacting with students of different cultures, backgrounds, and ethnicities provided me an opportunity I otherwise would not have experienced if not involved in the fellowship. I am better able to communicate scientific information to a broader range of audiences...”

“These skills are all required of me on a daily basis. I have to have good time-management skills, take initiative, and follow-through to produce my work on time. I have to be flexible and compromise with my sometimes difficult co-workers. I have to be open and organized in my thoughts and ideas to be effectively mentored by my supervisors and to effectively mentor other scientists in my office...”



## The Importance of Outreach

“The number of students in sciences is still on the decline and without representatives of the scientific community willing to step outside the ivy walls to engage the public, I see no reason that this trend should change.”

“Not only is it enjoyable to interact with students and get them to see beyond the stereotypes of science, but helping them to see that what you can learn from science is applicable in any career they choose to pursue is gratifying.”

“...it will make a difference in their lives to see that scientists care about them and want to help them learn. This outreach could even influence kids to further their education and maybe even become future scientists themselves.”

“While participating in the program I was able to see how much students and teachers received from the extra contact and support (from scientists) and how the program stimulated the minds of everyone involved.”

“I feel that one of the reasons that outreach is so necessary is that the overall trend in student behavior has them spending more and more time inside. Having spent most of my free time as a child playing outside in the forest, I developed a curiosity for the natural world around me. If students are spending less and less time outside....they won't have the opportunity to develop this curiosity. Working at environmental education facilities, I see students who are amazed by things others take for granted.”

“Many areas of the country lack qualified science teachers in the school systems...so another person will fill in not knowing anything more about science than what their text book tells them.”

“Science teachers are generally overworked and classrooms are overcrowded. In these types of situations it can be hard for the teacher to have the time, energy or money to come up with lab activities for students. Having another individual (scientists) in the classroom can help take some of the burden off the teacher and also get the students interested in different careers and opportunities to learn.”

“My university is not very concerned with academic outreach and so within the university there is little opportunity to do so; even self-motivated ideas are discouraged as a waste of time as the focus is solely on research. I feel it's not only important to put a human face with scientists for young people, but also to give them hope that regardless of their background anyone has the chance to become a scientist that so chooses.”

“All of these skills are extremely important in my job. As a forensic scientist, I have to be comfortable communicating with many different types of people. I have to communicate scientifically with my colleges and superiors. I also must talk to law enforcement personnel about cases and then testify in court in front of a jury that may not have much scientific background. This kind of switch, from technical, in depth communication to more basic explanations was greatly enhanced by the GK-12 program. I have to effectively “teach” jurors and law enforcement personnel about scientific processes and analyses. I also have lab work, paper work, report writing, and personnel issues that I have to juggle every day in order to do my job effectively. I have to work with co-workers and superiors and present my ideas succinctly and clearly. All of these skills were enhanced by my participation in the GK-12 program.”

### Fellow Follow-up: Four Years Later A Forensic Scientist Elizabeth Buda

