



## BIOMAN 2012 in Graham, NC

Alamance Community College  
Mona Cofer, Mica A. Welsh and Russ Read

**Mona Cofer:** As a “first-timer” to the BIOMAN Conference, I did not know what to expect from this gathering of renowned science educators. Admittedly, I was quite nervous entering a room filled with a group of scientists when my experience was from an English background. However, the initial outcome of attending this conference proved to be two-fold as one that was both rewarding and educational.

Needing to know more about writing grants, I attended my first workshop, “*How to Write a Successful Grant Proposal*” and was excited to learn that I had gained a wealth of information from Dr. Celeste Carter from the NSF-ATE Program. My next hands-on workshop was a room filled with white coats and instinct immediately told me that I had entered the world of the science laboratory. With a team of patient and good-natured instructors, I donned my white coat and gloves with written and verbal instructions on how to use the pipette. New words were being introduced to my vocabulary such as centrifuge, beakers and vortex as I carefully followed each procedure of those with more experience than I. All of the trainers were very eager to share their talents and expertise to ensure that this was an engaging, learning workshop for all. Having successfully fulfilled their goal, the class came to a close with the participants elaborating on their new-found knowledge which included a better understanding and deep respect for the proficiencies needed to work in a science lab.

As the conference was nearing its final day, participants were sharing their experiences with each other and the general consensus was that the team of planners had thought of everything, even the smallest detail, to ensure that all needs were met. There were never any doubts or questions as to the events unfolding each day as the “*Schedule for BIOMAN 2012*” itemized every detail. There were rooms reserved for the breaks, a delicious lunch was provided every day and the field trips were organized with great care to safeguard any mishaps. The bus trip to the winery for a wine-tasting and North Carolina barbecue proved to be a “perfect evening” for the out-of-state guests and locals as well. As a “first-timer” to the BIOMAN Conference, my evaluation would state that this event could most definitely be used as a model for other conference planners.

**Mona Cofer** is a Biotech Workforce Specialist at the National Center for the Biotechnology Workforce.

**Mica A Welsh:** The first day of the conference began with a speaker, Tim Bertram, CSO of Tengion which is a regenerative medicine company located in Winston Salem. Following his speech, I attended a discussion entitled “How to Write a Successful Grant” with Dr. Celeste Carter of the NSF-ATE program. This was interesting and the information was fairly straightforward.

- Look at the NSF website and study the grant opportunities
- Carefully examine the Guidelines and follow the instructions carefully
- Register early with Fastlane and practice the submission process to avoid eleventh-hour snags
- Resubmissions are great, but don’t merely focus on the comments made by the first panel of reviewers. Because you will get new reviewers, so be sure to strengthen the whole proposal.
- Discuss your idea with a grant’s officer and let them advise you which grant is best for you
- Get second opinions on the proposal from your colleagues; fresh eyes will help you communicate your idea.

Celeste said that 60% of the proposals from institutions new to the ATE were awarded, historically.

That afternoon I attended the Stem Cells: Growth and Maintenance hands-on workshop. This was led by Bill Woodruff, Head of the Alamance Community College Biotechnology Program, and was well attended. After a short lecture the group met in the lab to begin a 3-day activity to initiate the differentiation of E3D3 mouse embryonic cells into cardiomyocytes, neurons, and various other cell types. I was in a group of four, but only one had a strong skill set for the process. She guided us through it. I enjoyed working in a hood again and the skills came back to me. I remembered how and why the steps were performed as directed in the protocol.

Jim Crawford is a fellow Forsyth Tech Biotech graduate, now a Masters student in Bioethics at Wake Forest University and an employee of Keranetics, a local biotech company. On day two, he spoke to the group on the importance of using memory in the classroom and this was followed by another hands-on workshop. In this workshop we attempted to transfect CHO-K cells with non-viral plasmids carrying EGFP protein with an affinity to actin, so the actin could be visualized and DsRed2 protein with an affinity to mitochondria in order to view them. Again my skills were refreshed and the fear that my lab skills were disintegrating was somewhat relieved. I worked with the same group from the first workshop and each of us did one part of the protocol. The plates were stored to incubate for 48 hours.

On day three, I participated in the hands-on TFF filtration workshop. In this exercise we began with a solution containing alpha amylase and used filtration equipment to concentrate it. The Absorbance was measured using a spectrophotometer. This measure was repeated using a sample from the solution every 3 minutes until the quantity was reduced from 500mL to 15mL. These data points allowed for the creation of a curve to demonstrate the progress of concentrating the solution. When we began, our solution was 0.2g/mL and when we finished it was 2.948g/mL. This reminded me of what it was like to work in a lab with a team. I worked well with Joe Robinson of Central Carolina Community College, Kelly Turner of the NC BioNetwork Bioprocessing Center and Mona Cofer. This activity seemed more like team collaboration than the earlier hands-on activity. Each of us discussed and worked through the steps.



**Mica A. Welsh** is a Research Assistant at the National Center for the Biotechnology Workforce.

**Russ Read:** I am always impressed with conferences like the NSF ATE Bio-link Summer Fellows, the Community College Program at BIO and the NBC<sup>2</sup> BIOMAN. They give us an opportunity as national, regional and community partners to see each other's facilities, local companies, learn about best practices in the bioscience area and most important is the ability to network around common interests. The BIOMAN this year was held at Alamance Community College. It was a superb effort of collaboration between many partners, not only across the country, but also within North Carolina. So "hats off" to our NBC<sup>2</sup> partners for their organization. This year BIOMAN had strong representation from NC BioNetwork. Three centers sent personnel. The Capstone Center, represented by Ana McClanahan, Kimberly Jackson, David Yarley and Lisa Richman, hosted a BOOTCAMP the week prior for BIOMAN nationwide participants. Kelly Turner from the Bioprocessing Center was in the lab getting her skills up to date. Mica, Mona and I were pleased to represent the NCBW to see our colleagues and participate. We are all better prepared for biotech workforce training!

**Russ Read** is the Executive Director at the National Center for the Biotechnology Workforce.