Special Skills Workshop # 2: Technical Writing and Presentation

Speaker: Dr. Ronald W. Millard, Director, NSF Program in Membrane Applied Science and Technology
Date: Thursday, June 24, 2010
Time: 9:00-11:00 AM
Venue: University of Cincinnati, Baldwin Hall, room 641

Prepared by:
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This workshop was given by Dr. Ronald W. Millard, Director, NSF Program in Membrane Applied Science and Technology on Thursday, June 24, 2010 from 9:00-11:00 AM (2 hours) at the University of Cincinnati in Baldwin Hall, room 641. Dr. Millard is the Director of two REU Sites: NSF REU Site Program in Membrane Science and ASPET SURF Program. He is also directing a NSF RET Supplement for two teachers who are participating in the professional development programs offered in our RET Site. His area of research is molecular dynamics in heart failure. The workshop was jointly attended by the RET and REU participants.

Before attending the session, Dr. Millard assigned to the participants an on-line survey to take and an article to read after taking the survey. The results of the survey were compiled before the session and these were used during the session to discuss technical writing.

Dr. Millard opened his session by giving some background information about himself and his very diverse experiences which he was willing to share with the group. Dr. Millard has done a lot of traveling from Antarctica to Africa in order to conduct research for his Chemistry degree with a minor in Biology. Dr. Millard was able to address the young people in the group with some good advice: "Look for good mentors and role models to help on the path of life and be open to take help when offered." He mentioned that he was especially lucky in this area. Photographs taken during the workshop are presented below:

Dr. Millard Giving Advice

Going Over Survey Results

The first topic of discussion was the survey the participants had completed the day before the session. Each participant was given a print out of the results and a complete list of the questions that they asked in the survey. The title of the handout was "Communicating Science for the Lay Public and

Policy Makers." Discussion revolved mostly with the type of vocabulary used, the wording of the question and the participants' bias as the questions were answered on the survey. The RET participants dissected each survey item to determine what was being asked and how answers were derived by the participants. Interestingly enough, most of the RET participants answers were very similar and most of the REU participants answers were very similar. However, the two groups were very different when compared to each other. Dr. Millard explained that this is due to several reasons: the participants' bias, the learning curve within one's life, and the background of each individual is very different.

The second topic of discussion dealt with the vocabulary of an article in the *New York Times* newspaper (see photograph on the right). This publication was supposed to be written at an 8th grade reading level so that just about any adult can understand the article. The RET and REU participants were to scan over the articles, and pick one word that the other group would not know and write it on the board. Dr. Millard picked a word from the RET list and the definition of that word had to be given by an REU student chosen by Dr. Millard. Then the RET participants were given a word from the REU list and Dr. Millard called on a participant to define that word. A point was given to each team for a correct definition of the word. At the end of the game, the score was tied, 5-5. Dr. Millard was not pleased considering that the participants are college students or graduates and the newspaper is supposed to written at an 8th grade level.

Finally, Dr. Millard presented his PowerPoint on "Communicating Science." There are three different communication styles: (1) Creative Writing, (2) General Science Writing, and (3) Scientific Technical Writing. Plagiarism is to be avoided at all costs regardless of the type of writing completed. Do not copy and paste off of the Internet, rather put information in quotes and attribute ideas and site sources if this is done. Several guidelines were given for writing an abstract for a science project or research project. Always make sure the guidelines are followed, they are set for a reason and are expected to be followed. Several times Dr. Millard reminded the participants to check and re-check, read and re-read for grammar, spelling and syntax errors. A dictionary and thesaurus are most beneficial in this situation. Submissions should be given to mentor early so that there is plenty of time for feedback and it is encouraged that participants have a network of people to help critique the assignment. Dr. Millard quickly covered the guidelines of doing an annotated bibliography and showed a sample slide. When communicating science through slides and posters, Dr. Millard stated that it was important to advertise the event. This can be done through posters, conferences, and school hallways to name a few. When creating a poster or a slide presentation, Dr. Millard stressed that it was important to keep the audience in mind when preparing the presentation. Posters should be easy to read from three to four feet away and the colors should not be overpowering or a distracter. Some audience members may have eyesight problems, like color-blindness, so that should be taken into consideration as well. When creating a PowerPoint presentation, a good guideline is to use six slides in ten minutes and watch the "bells and whistles" (examples, colors, swiping in and out, too many words, etc.). The last slide should ask for "questions," so that those are not forgotten. Posters and slides

should be clear and crisp. Before presenting, write down everything that is to be said and practice, practice, practice!