Presenting with PowerPoint

Anyone who has ever sat through a long and boring lecture knows that even a dynamic program like PowerPoint can make things more complicated than they need to be. Below are a few suggestions and pointers to keep your audience engaged and make sure your extensive research is presented in a clear and concise manner.

- Use short sentences or phrases. The slides are there to help lead the audience along. If you put every detail on the slide, why should the audience listen to you?

- Limit each slide to six lines, too much can be overwhelming.

- Balance text, graphics and space. Having areas to pause relaxes the viewer's eye and allows better flow for the material you are presenting.

- Keep within your margins. Just as a paper will have margins, make sure you keep some space around the entire area. Often times the bottom of a screen can be blocked, especially to those in the back row.

- If "auto-fit" gets overwhelming in Powerpoint 2007 go to "Paragraph > More Options > Text Box > Autofit" and choose the appropriate option.

- For a small dark room, a dark background with light lettering works better. For a well lit, larger room, a light background with dark text works better.

- Use contrasting color. Red on black looks horrible when projected. As does yellow on green. Make sure the colors are not annoying to the eye. This only gets exaggerated when projected.

- Tables and charts tell information in a concise way and much better than explanatory text.

- Make sure your heading and text is large enough to be seen. Typically nothing smaller than 24 point font for the actual text, and 40 point for the header.

2008-2009 McNair Scholar Christopher Kirkendall presents at the 20th Annual McNair Scholars Conference, April 2009.

- Use the master slide function in PowerPoint. This allows you to make quick changes much easier.

- Check your presentation on the computer and projector you will use in the actual room you'll be presenting in. Come early to troubleshoot.

- Use the backgrounds and templates that PowerPoint offers. These were developed by graphic designers and work well. However, feel free to tweak the designs and make them your own.

- Think about how much time you want to spend on each idea. Don't get bogged down in your background and introduction. The audience wants to see your results.

- Write specific details you want to touch on in the notes area. Then print out each slide using "Notes Page" to use as you present.

- Start early and edit ruthlessly. The more eyes that see the presentation before you give it, the better.

Adapted from materials by Lea Lichty

Scholar Spotlight: Aaron Rosengren

My McNair Scholars Program experience has not only inspired me to pursue a Ph.D., but has also presented me with the challenges and guidance necessary for my academic development and prepared me for a lifetime of continued learning and growth. I worked under the guidance of Dr. P. Frank Pai in the Department of Mechanical and Aerospace Engineering. Our project involved developing and validating a new laser- and dynamics-based method for detection, location and characterization of structural damage, which will noninvasively help detect and locate damage in

2008-2009 McNair Scholar Aaron Rosegren prepares materials for his research project.

structures. Vibrations can be thought of as a sum of natural frequencies, which are functions of the physical properties (mass, damping, and stiffness) of the structure. Because damage signals are always contained in dynamic responses of structures, studying the vibrations will help to detect and locate damage.

This enriching experience has helped me to develop the skills that are imperative for a future career as a research scientist. The most memorable experience I had as a McNair Scholar was traveling to San Diego (funded by McNair) for the SPIE 16th International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring.

Although I grew up near an airport, that was the first time in my life that I had been in an airplane. Seeing the earth from an altitude of 40,000 feet was truly captivating and reinforced my desire to study in this field.

The summer following my McNair internship, I was afforded a great research opportunity through the Summer Undergraduate Research Fellowship program at the University of California-Irvine (UCI). I worked under the guidance of Dr. Kenneth D. Mease in the Mechanical and Aerospace Engineering Department as part of the flight dynamics and control group. My research focused on the development of a new parachute deployment logic for Mars pinpoint landing. My specific task was to create a Matlab algorithm capable of deploying the parachute in a way that was tolerant to the uncertainties in atmospheric density. I spent thirty straight hours in the lab in preparation for the UCI research symposium at the end of the program. Perhaps it was the countless cups of coffee I consumed, but my decision to become a researcher was cemented.

As a senior, I have continued to work with the McNair staff on fellowship and graduate school applications as well as preparing for my graduate school interviews. This process takes an immense amount of time and without proper planning, it can become very overwhelming. In addition, last fall I took the "Preparing to be a T.A." class offered through the McNair Program. This class taught me a lot about different teaching strategies and assessing student learning. It also gave me an opportunity to see both the challenging and rewarding aspects of administering a class as a graduate student, something I plan on doing next year.

Overall, the support and encouragement from the McNair staff has been invaluable and they have given me the confidence to pursue very prestigious programs in my field. Continuing on the path to become a prominent researcher will require a high level of commitment, motivation and the freedom to explore my passions. I'm now confident I can uphold the high expectations of a PhD program and I'm very excited at the prospect of sharing my unique perspective and skills that I have acquired through McNair.

The Methods Section

The goal of the methods section is to explain in detail the procedure for how your data was collected and analyzed. This allows for other researchers to critique the validity of your data and conclusions. This is because a key component of the scientific method is that research can be duplicated. This duplication will help support or refute the validity of your findings.

To structure your methods section, first consider in what ways was the data collected. Was a survey conducted? What resources were used or compared, using what model? In what process was the experiment conducted? For some, the methods section can be quick and follow an obvious chronology. For those in the social sciences or humanities it isn't as straight forward.

You should provide details of how you collected your data. Look at your target population. Who are they? Why are you focusing on them? What types of a sample did you take? This is where you can go into more specifics about how your survey or questionnaire may be distributed. In addition, you should include what questions your survey will ask. Although this may change as your research progresses you should still have a basis from which to develop the eventual questionnaire.

From there discuss the method of your observation. Quantitative surveys have many aspects to consider. You should discuss the areas of concern or limitations, such as how you created the questionnaire, or any anticipated problems in collecting the questionnaire.

In addition, describe the materials, measures, equipment, or stimuli used in the experiment. This may include testing instruments, technical equipments, books, images, or other materials used in the course of research. When the sources have been explained, describe the type of design used in the experiment. Specify the variables as well as the levels of these variables.

From there, describe the actual procedure your research will be using. For some, this is explaining what you had participants do, how you collected data, or the process of your experiment. Follow this chronologically and detail the order in which steps occurred.

Finally describe how you are analyzing the data. What is the statistical procedures you'll be using. How do these procedures test the hypothesis or research question you posed in your proposal?

McNair Scholars come from a variety of disciplines, so no one approach can be universal, however they do share things in common. You want to have the reader know the flow of your research. What was the process that you had to go through in order to get your final result? Using subheadings allows the logical flow to be more self evident. This also helps clarify projects that may be very complicated.

Some additional tips to consider:

- Always write the method section in the past tense.
- Avoid unnecessary detail that is not relevant to the outcome of the experiment.
- Remember to use proper format. As you are writing your method section, refer to a style guide that your field uses, whether it is Chicago, MLA, APA or another style
- List materials used, how were they used, and where and when was the work done especially if the location, time of year, or day may affect the results.
- Describe special pieces of equipment and the general theory of the analyses.
- Include figures and/or tables outlining experiment set-up and experimental factors.
- Proofread your paper for typos, grammar problems, and spelling errors. Don't just rely on computer spell checkers. Check each section of your paper for agreement with other sections. This is especially important as you combine the methods section with your final paper. If you mention steps and procedures in the method section, these elements should also be present in the results and discussion sections.

[Adapted from materials from the College of Humanities and Public Affairs at Missouri State and about.com]

Reminder:

McNair Methods Section Due
Monday, March 1st

Thank you to our presenters!

The McNair Scholars Program would not be possible without the dedication of the MU faculty, staff and administrators who help present workshops throughout the year. The McNair Scholars Program extends our deepest thanks to those who presented workshops thus far.

- Dr. Greg Foster, *The Learning Center*
- Goodie Bhullar, *MU Libraries*
- Rachel Brekhus, *MU Libraries*
- Norma Jackson, *Graduate School*
- Dr. Joe Donaldson, *Educational Leadership & Policy Analysis*
- Dr. Glen Heggie, *Cardiopulmonary & Diagnostic Science*
- Dr. Charles Sampson, *Public Affairs*
- Dr. Deanna Sharpe, *Personal Financial Planning*
- Chef Leslie Jett, *Food Science*

- Dr. George Justice, *Graduate School*
- Aaron Rosengren, *Mechanical Engineering*
- Michael Ojibway, *Sociology*
- Tracey Latimore, *Educational & Counseling Psychology*
- Brittany Smotherson, *Educational Leadership & Policy Analysis*
- Dr. Amber Clifford-Napoleone, *Univ. of Central Missouri, Anthropology*
- Dr. DeAngela Burns-Wallace, *Enrollment Management*
- Lea Lichty, *Division of IT*

The Challenger