Tips for Working as a Group

Working with other students as part of a small research team can be a rewarding experience. There is an abundance of evidence in the educational literature that the process of discussing an experiment with others leads to a deeper understanding of both the specific experiment and the broader science underlying the experiment. In addition, working as part of a group is a valuable skill that is increasingly desired by employers, graduate programs, and the health professions. Indeed, you will spend much of your professional career working closely with others. An effective group, however, does not happen without some effort on your part. The following tips will help you get more out of this experience.

Choosing Partners. This is your most critical decision. Don't approach this choice by deciding to work with your two closest friends. Instead, consider the following:

- *Who's skills best complement mine?* For example, if you are a good writer, but struggle with calculations, try to include someone in your group who has stronger quantitative skills. If you are "all thumbs" when it comes to lab work, then find someone who is better at manipulating glassware and instruments.
- *Who's background best complements mine?* Although this course does not require Calculus or physics, including in your group someone with experience in these courses helps simply because of his or her greater experience with quantitative material. You might consider, as well, including in your group individuals with experience in Chem 120, Chem 130 and/or Chem 240.
- *Who's schedule best matches mine?* Much of your success in lab actually results from making productive use of time outside of lab. Groups with members who can easily meet to prepare for lab, to analyze data and to write reports, are often more successful than groups whose members can never find time to meet.

Assign Responsibilities. This is your second most important decision. Working as a group can be a chaotic experience if no one knows who is responsible for completing tasks. Who, for example, is responsible for gathering together equipment? Or, who is responsible for searching the library or internet for needed information? Effective groups learn to assign specific responsibilities to each member. One approach, which I encourage you to consider adopting, is to assign one group member to each of three roles:

- *Manager* – responsible for organizing all aspects of the group's work, including: arranging for meeting times, explaining the experiment's goals to the group, ensuring that the data obtained in lab meets the group's needs, coordinating the preparation of the final report (when prepared as a group) and meeting with the instructor when questions arise.
- *Technician* – responsible for all technical aspects of the group's work, including: maintaining the group's electronic lab notebook and setting up, calibrating and optimizing the equipment needed for the experiment.
- *Chemist* – responsible for all the "wet" work done in lab, including: weighing out samples, preparing reagents and carrying out analyses.

There are many advantages to this format, the most important of which is having one person take responsibility for ensuring that work is completed. Should you choose to use this organization, be sure to rotate group members through all three positions so that everyone has the opportunity to experience each aspect of lab work and so that no one person dominates the group's efforts.

Speak Up When You are Confused and Listen to Each Other. A critical part of working together is ensuring that each group member understands the experiment's goals and how each of your individual efforts help accomplish those goals. If you don't understand something, no matter how trivial it seems, then speak up and ask questions. If one member of the group asks a question, then the remaining group members should ensure that the question is answered satisfactorily before continuing; never sacrifice one group member's understanding for the sake of expediency. If you adopt the three roles described above, then the Manager should make sure that everyone understands the experiment.

Be Responsible. By participating in a group you assume responsibility for each other. Remember that your effort affects not just yourself, but it also affects others in your group. When each member of a group lives up to his or her responsibilities, the group's work is inevitably better.

Respect Each Other. Even the best groups will have disagreements. If a disagreement occurs, take a break to cool down and, as a group, try to talk through the problem. Remember to respect and listen to each other