# The Art of Collaboration

December 01, 2011

For me, choosing the right graduate school was about finding a department that not only allowed me to collaborate with other labs but encouraged it as well. At its best, collaboration is a collection of individual effort and skills that makes a project greater than what the collaborators could have achieved on their own. At its worst, collaboration can lead to burned bridges and arguments about where the project went wrong. Collaborating is not easy — it requires patience, works best when the group has a clear goal in mind, and brings the greatest rewards when things work out as intended. Over the years, I have completed many collaborative projects and have learned a few things about collaboration that may be useful to the average graduate student:

**Look for Collaborators Outside Your Department**

Between colloquia, classes, and departmental happy hours, collaborating with people within your department may seem natural. But why limit yourself? When you go to meeting, don't just present your poster and attend seminars. Take time to meet new people who share your research interests. Working with people outside of your department (or even your institution) can introduce new or unique perspectives to a research question, and — in some cases — can lead to a new project that you wouldn't have been able to do on your own. Meetings also allow you to expand your professional network, which will be important when you're searching for a postdoctoral fellowship or faculty position later in your career.

1. *Define responsibilities/accountability:* As exciting as it may be to formulate research questions with collaborators, logistical issues are no less important. It is critical to define everyone's role in a collaboration. These discussions should include topics such as author order, who will put together the experiment, who will collect the data, and so on. Making sure each collaborator is willing and able to contribute something to the endeavor not only makes everyone feel invested but can also help the project progress faster. Finally, accountability is crucial: If one person is constantly forced to pick up the slack for the entire group then an atmosphere of resentment will form that could harm the project.
2. *Stagger the timing of projects:* One thing I enjoy about graduate school is you get to choose your own adventure each day. Do you feel like writing or programming? Or maybe analyzing data? Having projects at different stages can help you vary your work and help maintain your interest. Staggering projects is also useful when your resources for collecting data are limited. Instead of collecting data for six different experiments at once, try focusing on data collecting for one or two experiments at a time. When those are done, then you can collect data for other experiments. By staggering data collection, you can have new data to analyze while waiting for data from other experiments.
3. *Communicate:* A simple status update to your collaborators can go a long way. It informs the group about the progress of the project, and it prevents anyone from being left out of the loop. Communication also ensures that everyone's opinion is heard. Making sure opinions are shared

is especially important when discussing the next step of the project, because a breakdown in communication can lead to a decision that might not be unanimous. This leads me to my next point: Always attempt to reach consensus for any decisions that are made about the project. Consensus might sound easy, but one of the appeals (and frustrations) of research is that five people can come to five different conclusions about the same set of results. Good communication gives everyone the chance to present their thoughts on what the next step of the project should be. One of the worst things that can happen in a collaboration is having disgruntled collaborators who feel they have no say. Collaboration involves managing skill sets, but remember it also involves managing personalities and relationships.

4. *Know your limitations:* Be careful not to overextend yourself by getting involved in too many projects. Although starting a new project can be exciting, it is easy to forget about your other responsibilities. Wanting to be an active researcher is important, but so is the ability to say no. Also, do not feel compelled to take the lead on every project. If you find the project interesting but can't commit, say, 10 hours a week to it, make that limitation clear to the group from the beginning. Being up front about these issues makes it easier to define everyone's responsibilities more appropriately instead of delegating tasks to someone who may not be able to complete them in a timely manner. If you do manage to overextend yourself, be honest with your collaborators. Being honest not only encourages transparency, it also allows your group to step in and help. Though it can be difficult to admit you were in over your head, your collaborators will appreciate your admission much more than they would significant delays or low-quality results.

5. *Keep organized:* As you might expect, the more projects you have going on, the easier it is to become disorganized. Having to spend time going back and organizing all of your files can be labor intensive, but you can prevent wasting that time by being proactive. Steps that are inconvenient and seemingly trivial can save you days, or even weeks. Incoming emails and project files should be given detailed labels and sorted neatly into folders. Use online calendars to facilitate meetings. Share documents with collaborators with a file-sharing program like Dropbox. Organization is a habit, and — like most habits — it needs to be developed. Being organized is necessary for collaboration because the consequences of not having things in order affect not only you but affect your colleagues as well.

Always remember that mishandling collaborations can result in lost opportunities. In academia, you may work with the same colleagues over the course of many years, and if your collaborations frequently result in burned bridges, people may not want to work with you. But if you make an effort to avoid the pitfalls that I've described in this piece, then collaborations can offer an outstanding opportunity to expand your research program, give your career a boost, and make new friends.