

The Ups and Downs of Collaborative Ventures:
A Case Study on Being a Collaborator

Marie F. Smith, CRA
Institute of Ecosystem Studies (IES)
PO Box AB, Millbrook, NY 12545.
Telephone: 845-677-7600 x202.
Fax: 845-677-5976.
E-Mail: Smithm@ecostudies.org.

Abstract

Successful scientists work in teams, with their productivity relying on effective teamwork among collaborators. When everything goes well, collaborations result in higher quality research than could have been accomplished by scientists working alone (Kotok, 2004).

As Research Administrators, we seek to facilitate collaborative ventures while protecting the interests of the institution and the institutional research investigator. Collaborative relationships are often very complex and may involve new relationships between both investigators and institutions. As with any new relationship, trust and familiarity are not yet been firmly established. Understanding the nature of collaborations is an essential tool for the effective Research Administrator. In order to gain insight into collaborative relationships and to better understand the process, first hand knowledge of the intricacies of collaboration can be invaluable. This is why being part of a collaborative relationship can be edifying, can give a greater appreciation of the rewards and pitfalls of collaborations, and can provide greater insights to enhance the former and avoid the latter. The goal of this paper is to share with other administrators the lessons learned and insight gleaned as I became a collaborative insider, including a:

- Better awareness of the complexities of collaboration of ideas, authorship issues, personality differences, power relationships;
- Better understanding of what I am trying to facilitate in the agreements that I write and manage, and
- New empathy for those whose collaborations are made possible by the agreements that I write.

Introduction

Background

Fishbough, 1997 defines a collaboration as a formal body established by two or more autonomous partners, none of whom are, as a rule, under personal contract to another but whose aim is to attain substantive or symbolic goals that no other partner could achieve independently. Spurred on by the Patent and Trademarks Laws of 1980 (PL 96-517), commonly referred to as Bayh Dole, and the funding criteria change implemented by federal agencies, such as the National Science Foundation, multi-organizational research is on the rise (Murphy et al., 2004) and is becoming more complex as it becomes more diverse and increasing in size (Likens, 2001).

The increase in collaborative ventures is responsible for a steadily growing number of agreements that lay the institutional groundwork for these collaborations. Therefore, the need to understand the intricacies of the collaborative mechanism is an important component of research administration because it will enable the administrator to structure agreements that facilitate rather than hamper these relationship by not overshadowing the function it is designed to accommodate (Smith, 2004).

Institute of Ecosystem Studies

Founded in 1983, the Institute of Ecosystem Studies (IES) combines research and education in fulfillment of its scientific mission and is one of the largest ecological programs in the world. Roughly it is the size of an academic department in a large university, but it functions independently. Being this size offers opportunities that would be more difficult to attain in a large university setting. Nonetheless, this experience opened my eyes to the complexities involved in collaborative ventures.

Not unlike many research organizations, IES is experiencing a rise in collaborative ventures, although collaboration among the faculty at IES has always been encouraged and is part of the culture of IES. The faculty at IES is part of many collaborative projects, which include:

- Hudson River research projects,
- Lyme Disease and the Ecology of Infectious Diseases,
- Ecosystem Engineering, Invasive Species,
- Synthesis, and Prediction in Understanding Ecosystems, and the
- Baltimore Ecosystem Study Long -Term Ecological Research (LTER) project sponsored by the National Science Foundation (NSF).

The Founder, Director and President of IES, Dr. Gene E. Likens, with Dr. F. Herman Bormann and colleagues, initiated the Hubbard Brook Ecosystem Study (currently an NSF LTER site) in 1963. He has been involved in numerous collaborative ventures, and has written extensively on the subject (see Likens 2004 in a recent summary published in *Ecology*).

Inside the Collaborative Process

The Nature of the Collaboration

In 2004 I initiated a discussion group at IES on the Responsible Conduct in Research (http://www.ecostudies.org/responsible_conduct.html). This brought me together with our research scientists in a new and different context. The collaboration took the form of working with faculty and other staff members to write some of the case studies for discussion. Later, we decided to author a paper to share our experience.

Being a neophyte in the area of collaborative relationships, I learned many valuable lessons, giving me a better understanding of the complexities (e.g. authorship, ownership of ideas, power relationships, personality differences), motivations, protocols and dynamics that each of these relationships entails. This insight has been useful in structuring the contractual agreements that protect the interests of the organization and the investigators, while maintaining a positive relationship among the parties involved. It is imperative that neither the negotiating process nor

the agreement results in an adversarial association that strains the collaborative relationship. The agreement needs to be a well-structured document that serves the best interests of all parties, including the funding agency and recipient of the support.

Benefits of Collaboration

Loan-Clarke & Preston, 2002 describe the benefits of collaboration as including:

- More effective use of individual talents. A collaborative relationship helps ensure the availability of a wide-range of complex skills, techniques and knowledge necessary to complete a project and/or solve a particular problem.
- Knowledge and skill transfer. Collaboration facilitates the transfer of tacit knowledge while honing the participant's social and management skills. Teamwork is hard to teach in a classroom but is best learned by participating and engaging in team activities, (although I would add, that exposure to both venues provides the best teaching tool).
- Stimulation and Creativity. Collaboration is synergistic. New insights and perspectives often result from the exchange and/or clash of views and ideas.
- Networking. Collaborations offer opportunities to make new contacts, broaden one's knowledge base, give differing perspectives and increase productivity.
- Intellectual Companionship – Collaborations can help participants overcome the isolation that is sometimes associated with research.
- Enhanced Dissemination of ideas – Presentations and publications that result from collaborations usually increases in number, which leads to the findings being disseminated to a wider audience. Increased distribution leads to the likelihood of the findings having a greater impact.

To this list, I would add necessity. Often the need for expertise to complete a project brings people of varying fields and disciplines together.

Although my experience is not broad enough to comment on all of the benefits cited by Loan-Clarke & Preston, I concur that the collaborative efforts add a dimension and depth to our writings that would have not been present otherwise. The interaction among the members of the collaborating team proved to be stimulating and enhanced the creative flow of ideas. The case studies and paper that are produced benefited from the team brainstorming and exchange of ideas and are much improved as a result. However, the greatest benefit to IES was the empathy that I gained for the process and the strengthening of a positive relationship between the faculty and the grants office.

Challenges Faced

Functioning as part of a group has its own set of challenges and drawbacks, especially when most of the members are researchers working off-campus, traveling, teaching and/or managing large research projects. Getting responses and comments from each of the co-authors was not always instantaneous nor was it always gratifying.

Forming and nurturing an effective, efficient, and collegial team is a continual challenge, which increases as the collaboration becomes larger more diverse; and often very little formal planning is given to this critical task (Likens, 2001). Collaborations, both large and small, face a wide

variety of challenges, some of which are listed below (McGrath, 2004; Government-University-Industry Research Roundtable, 1999).

- Collaborative research projects provide cost savings to the funding agencies but can result in additional organizational costs. These increased costs are due to greater travel expenditures and material costs, if materials or equipment need to be transported to various locations.
- Higher administrative costs. Negotiating, implementing and managing agreements for collaborative ventures require increased staff effort.
- Collaborations place higher demands on time. More time is needed to prepare the proposal, to keep partners informed and to reach a consensus on data findings.
- Challenges can arise from diverse organizational cultures. Each organization may place higher/lower priority on the project and disagree on associated commercial or ethical implications.

The challenges that I faced in undertaking my collaborative venture were due to time and priority restraints. Although each of my collaborators felt the ideas we were communicating were important, there were times when the writing needed to be set aside to accommodate research projects, field work, scientific publications, travel schedules, proposal deadlines and a myriad of work-related demands.

Despite the fact that electronic mail has made communicating across distances much easier and faster than in past years, networks go down, power goes out and then there are those electronic notes that mysteriously disappear in the black hole of cyberspace. I am not entirely sure if electronic communication is unreliable or if collaborators who fail to respond use this as a convenient scapegoat. In any event, it is important not to rely on only one form of communication.

One of the biggest challenges I faced, however, was in writing and editing a paper that had the approval of all the collaborators. Disagreements and discussions were not limited to content or scope. Some of the lengthiest discussions centered on punctuation, grammar, topic headings, sentence structure and word placement. The hardest disagreements to resolve often centered on the small issues not the broader concepts, and the main difficulties that need to be resolved centered on the concern the authors had for getting the appropriate credit for their ideas and contributions. These concerns were complicated by differential power relationships among the participants, which was a revealing experience for me because it helped me gain insight into what goes on inside the collaborative grants that I manage.

Lessons Learned

The job of the Research Administrator is management *for* research not *of* research. Research should have as its goal the advancement of knowledge, and those institutions concerned with the “advancement of knowledge” need to have a truly nourishing climate for research. The institutional officers who are Research Administrators need to believe strongly in research and to argue for its existence. To do this, they must understand the process by which research is done (Woodrow, 1978).

Collaborations are part of the research process, and collaborations are hard work! Like all relationships, from marriages to business partnerships, they have their rewards and their drawbacks but the parties involved need to invest the time and effort necessary into making them work. Each member needs to be a contributor.

Loucks-Horsley, et al (1998) wrote that successful collaborations share common implementation requirements:

- **Clear Focus of Activity.** Every collaboration needs to have a focus and a purpose, a clear understanding, openly stated, of why they are there and what they are doing. Although the purpose can be fine-tuned along the way, the initial focus should be retained.
- **Size and Logistical Requirements.** Cost and complexity have a definite relationship to the strength, longevity and effectiveness of a collaborative venture. As the number of partners increases so does the potential difficulty in reaching consensus and obtaining feedback.
- **Communication Mechanisms.** An effective communication network must be established, whether it takes the form of local, regional or electronic meetings or a combination, the network must be setup and maintained.
- **Monitoring Progress and Impact.** Effective collaborations take into consideration the needs of the partners and their contributions to the project. Someone must take the lead and the other partners need to contribute according to their assigned tasks and skill levels. This arrangement needs to be monitored and, in some cases, may need to be readjusted.

Likens (1998, 2001) listed some fundamental characteristics desirable for successful team members, which includes:

- Ability to trust and be trustworthy (trust),
- Abundant common (or good) sense,
- Creativity and willingness to share with the team,
- Collective ability to make up deficiencies – *Shared experiences*,
- Willingness to give the team time,
- Personality – *listens, enjoys working with others, is curious and interested, is open to new ideas and approaches*, and
- Serendipity – *kismet and karma*.

To this list I would add respect and truthfulness.

These characteristics along with team building strategies are the necessary ingredients to building successful teams. Some important team building strategies include training team leaders; mentoring by experienced team members; face to face communication outlining team and individual expectations; developing effective and efficient time management strategies; clear communication on team and individual expectations about responsibilities, priorities, openness and trust; clear understanding of roles and authorship order; using experience and commitment to fine tune common sense (a necessary ingredient for serendipity); and good administrative help in order to facilitate team function and accountability (Likens, 2001).

It became apparent in the very early stages of our collaborative venture that, in order to be successful, the paper needed to be something that we all felt was important, that needed to be

written and that we were willing to make the necessary contributions to see this project completed. Trust must be present among the partners. Well-defined roles and responsibilities help build that trust. Understanding and respect are also necessary ingredients. Collaborative partners need to know their strengths and weaknesses, their points of compatibility and disagreement. At times, you may agree to disagree, but it is essential to establish who takes the lead and who makes the decisions when divergent ideas prevail.

Our collaborative writing venture was complicated by the fact that this was not a “normal” collaborative venture, in which the participants bring a particular expertise to the table. The fact that none of the participants had a “particular expertise” in this area tended to make the relationships somewhat more complicated.

How Administrators Can Help the Process and How the Process Helped Me

Understanding the process makes facilitating the process easier. Participating in the process increases insight. Understanding and insight are useful tools to possess when tasked with writing research agreements, preparing proposals and managing subcontracts. Being part of the process has helped me step back and reevaluate some of the preconceptions I have had.

Not all collaborators are the same; not all institutions are the same. Some institutions, just like some individuals, respond more quickly than others. Collaborators are not always friends nor do they always like each other personally but they may respect each other professionally. Sometimes it is a “marriage” driven by necessity rather than desire.

It may not be a startling revelation but not everyone agrees and not everyone works at the same pace, but it is a fact that is easily forgotten. Waiting for input from one or more of my collaborators has made me aware of how frustrating it can be for a researcher in another institution to be waiting for my office to issue a subcontract so that they can begin their work. The prompt issuance of a subcontract can be very helpful to maintaining cordial collaborative relationships. Since these relationships can be new, tenuous, starting the relationship on a note of discord can be very counterproductive. As my esteemed colleague, Dr. Peter M. Groffman, often reminds me, “A little kindness really helps the wheels of the world spin more smoothly!”

As Research Administrators, we need to do our part to ensure that we facilitate the process, not impede the process. Negotiating a subcontract, for example, is not a competition where one administrator or institution wins and another loses. If it is not a win/win situation in which the rights of all parties, including the funding agency, are protected, then it may become a lose/lose situation for everyone.

No time is wasted when administrators take the initiative to step out of their role to gain insight into the problems and to understand the complexities of colleagues. The rewards outweigh the effort and the insight gained is priceless. However, it takes individual initiative to do this – to reach beyond a “process the paper” approach in order to attain a feeling of ownership in the outcome.

Conclusion

Of course, collaborations among people can be done without institutional involvement. All that is needed is the desire, the need and the trust. However, when a transfer of money is involved, especially federal money, an *institutional framework* is necessary because institutions have multiple responsibilities. The challenge is to provide a helpful and supportive framework that does not impede progress or insert unnecessary burdens. A good Research Administrator rises to this challenge and accepts it as a routine part of the job!

Collaborations can be a frequent source of problems (Magnus, Kalichman, 2002; Likens, 2001) due to their varying forms and complex nature. Misunderstandings, unproductive collaborators, authorship issues, data analysis disagreements can singly or collectively taint the relationship. While communication and understanding are key ingredients, a Research Administrator who is attuned to the process can be invaluable. Being part of a collaborative group helps one to appreciate the importance of flexibility, a key ingredient in any collaboration as well as a desirable quality in a good administrator. Constructing a good agreement, making sure that the statement of work received in the proposal stage is clear and is agreed to by the parties involved, expediting paperwork as quickly as possible and maintaining a cordial relationship with collaborating institutions can help strengthen the relationship. Collaborations do not stop with the researchers involved in the project; they include the institutional administrators that manage *for* them.

Working collaboratively with members of the research staff is a good way to hone your working relationship and bring it to a new level of understanding and respect. Think about collaborating on writing a paper on how your roles interact, work with the research staff to plan a workshop aimed at helping each other to understand how your roles interrelate, write a proposal for funding for a Responsible Conduct in Research Project. The rewards will be worth the effort. According to the U.S. Department of Energy National Collaboratories, “One does not *deploy* a collaboratory, one *builds* a collaboratory,” and in the process can build a better working relationship and mutual understanding that will serve the institution, the faculty and sponsored projects staff well.

References

- Fishbough, M.S.E. (1997), *Models of Collaboration*. Needham Heights, MA: Allyn & Bacon.
- Kotock, Alan (2004), Collaboratories: Encouraging Remote Scientific Collaborations, *Science – The Next Wave*, U.S.: AAAS.
- Likens, Gene E. (1998), Limitations to Intellectual Progress in Ecosystem Science. In *Successes, limitations, and Frontiers in ecosystem science*, edited by M.L. Pace and P. M. Groffman, New York: Springer-Verlag.
- Likens, Gene E. (2001), Ecosystems: Energetics and Biogeochemistry. *A New Century of Biology*, edited by W. J. Kress and G.W. Barrett, Smithsonian Press, Washington, pp.53-88.
- Loan-Clark, J., & Preston, D. (2002), Tensions and Benefits in Collaborative Research Involving a University and Another Organization. *Studies in Higher Education* 27(2), 169-185.
- Loucks-Horsley, S., Hoewson, P.W., Love, N., & Stiles, K.E. (1998). *Designing Professional Development for Teachers of Science and Mathematics*. Thousand Oaks, CA: Sage Publications.
- Magnus, P.D., Kalichman, M. (2002). *Collaboration*. From RCR Education Consortium – Online Resource for RCR Instructors - <http://rcrec.org/r/index.php?module=ContentExpress&func=display&meid=79&ceid=45>
- McGrath, Diane (2004). Strengthening collaborative work. *Learning and Leading with Technology* 31, no. 530-33, Fall 2004.
- Murphy, K. Cifuentes, L. & Shih, Y (2004). Online collaborative documents for research and coursework, *Tech Trends*. 49 (3), 40-44, May/July 2004.
- Smith, Marie F. (2004). Subcontracting Primer: The ABCs of Agreements Between Collaborators, *The Journal of the Society of Research Administrators*, Arlington, VA, Volume XXXV, Number 1, pp 25-31.
- U.S. Department of Energy National Collaboratories, <http://www.doecollaboratory.org/overview.html>
- U.S. General Accounting Office (1998). *Technology Transfer: Administration of the Bayh-Dole Act by Research Universities*, CAO/RCED-98-126, Washington, D.C.
- Woodrow, Raymond (1978). *Management for Research in U.S. Universities*, National Association of College and University Business Officers, Washington, D.C.