

## Research Collaborations

### Introduction/Definition

Collaborations in research are best understood as the diverse partnerships that occur between investigative entities for the advancement of knowledge, the enrichment of processes, and the development of products and outcomes. Research collaborations can be either intramural or extramural efforts. They therefore can be created between entities within an organization's laboratories, among diverse multidisciplinary fields, between distinct and separate institutions, and also among regional or national amalgams. Collaborations are key elements in the successful pursuit of research in any of the arts and sciences. They are central to the promotion of research in the contemporary environment that is translational, interdisciplinary, and international. Research collaborations help to promote greater research results and are effective means for reducing costs and unnecessary duplication of effort.

### Core Points

In *Dynamic Issues in Scientific Integrity: Collaborative Research*, Dr. Francis Macrina details eight important areas for effective and appropriate research collaborations. When developing educational lectures, programs, or in-house discussion groups on research collaborations, the following are important core points for consideration.

1. *"Agreeing upon the goal of the collaboration, including expectations for outcomes and products."*

Current literature and community direction point to the essential importance of collaborations in research. History demonstrates that, most often, success in academic pursuits and research is effected by sound collaborative initiatives and systems. Collaboration success, however, requires clarity of purpose both strategically as well as tactically. Research leaders and researchers themselves must carefully outline the purpose of all collaborative efforts and what outcomes are hoped for not only in the short term but also over time.

2. *"Establishing and maintaining effective communication and making assumptions as clear as possible."*

Whether collaborations are effected intramurally or extramurally, the success of such collaborations is predicated upon accurate and clear communication of goals, assumptions, purposes, and processes to be engaged. In the world of human communication, assumptions are important to be explored and agreed upon. Individual partners always approach matters distinctively even when sharing a common language or common ideology. Therefore, when approaching a research collaborative effort, partners need to ensure that clarity is achieved in professional communications not only at the time of agreement but all throughout the

collaborative relationship. This will be especially true when research partners come from distinct cultures or nations.

3. *“Defining the expected contributions each participant can make.”*

In theory, the partnerships that are made through collaborations have great potential. However, collaborations entail tactical effort. For such, there are visible expectations for the contributions that each researcher and each institution will make. Clarity is needed regarding the actual visible expectations that each party must have of one another. As the number of collaborators and/or institutions increases, the number of expectations exponentially becomes more complex. To ensure the greatest transparency, and thereby effect the most productive collaborations, team members should clearly articulate which efforts are expected of which individuals and on what time lines. Clarity in long and short range planning for tactical operations is essential for overall success and productivity.

4. *“Allocating responsibilities.”*

Research in and of itself is a complex activity. Regardless of the academic or professional discipline, whether in the arts or any of the sciences and technologies, the intricacy of research activities creates highly complex and often complicated responsibilities. In terms of collaborations and partnerships, research operations give rise to numerous responsibilities for those taking care. Research planning must clearly define how responsibilities are to be shouldered, by whom, for how long, and for what results. Of particular importance is providing the most effective means by which achievable responsibilities will be integrated for the best possible overall results. Also, of critical importance is to set into operation means of accountability so that responsibilities remain on course or so that corrective/ameliorative actions can be taken in the event of unforeseen circumstances.

5. *“Estimating on the initial time frame for the collaboration.”*

Research efforts do not exist in a vacuum. The conduct of research has required schedules and deadlines that meet a wide number of expectations, including those of sponsoring agencies. Collaborations and partnerships must take these schedules into account. Partners should take special care to integrate time frames for collaborations given the regular regimen of responsibilities that each individual, department, directorate, institution, or community has overall. Effective collaborations require clear through appropriately flexible time frames. Of particular importance is the relationship that individual collaborative efforts have for the completion of the overall research especially as it affects expectations and other, even greater, obligations. Care must be taken by all parties to ensure the most productive and reasonable scheduling.

6. *“Articulating the legal obligations of each party, especially with respect to intellectual property requirements and regulatory compliance.”*

Research collaborations require critical care so that all partners in the collaboration meet legal and regulatory requirements. This has particular importance when participating institutions are from the public and private sector. Additionally, increasing care must be taken when international partners are involved. Data ownership, management and stewardship are central areas of importance. Having clarity about this important area has special sensitivity. Advance discussions are crucial to avoid short range and long range potential difficulties. Intellectual property rights, invention disclosure requirements, and patent applications/adjudication are also central and must be discussed prior to engagement as well as throughout. Of additional sensitivity are the obligations of researchers to research protection of human subjects and animal welfare. All parties must have absolute clarity about the obligations each partner owes to each other both individually as well as between or among the various institutions so engaged. Researchers, research administrators, and institutional leaders must consult extensively with their respective Offices of Counsel, Research Compliance Officers, Offices of Sponsored Projects, and Research Ethics leaders. In each case all individuals must consult extensively to ensure compliance with requirements of the Federal Acquisition Regulations, the Technology Transfer Act, Federal Human Research and Animal Welfare Policies, and other governing regulations and directives as applicable. It is critical that parties never assume total understanding of the complexity of requirements.

7. *“Specifying the process and criteria by which authorship and credit will be assigned.”*

One particular area that requires a clear articulation of expectations, requirements and standards is that of authorship and publication credit. This topic is covered widely and has today a high visibility. Authorship is clearly to be credited to those defined by publication standards. Partners should realize there are academic standards today regarding the assignment of authorship as opposed to one being designated a contributor. Individuals must consult the academic standards of the particular academic or professional discipline as these may differ. When research collaborations are achieved between international partners, individuals must carefully sensitive to multicultural expectations and standards that may differ. In these instances, reasonable understanding and flexibility will be important while not mitigating the fundamental nature of academic and professional propriety shared among all scholars and professional researchers today. Once again, clarity and ethical propriety are of the utmost importance.

8. “Recognizing accountability to research institutions, funding agencies, the profession, and the public.”

Researchers and their institutions have clear and particular responsibilities for the appropriate and ethical conduct of research itself. Such responsibilities include, among many, adherence to the high academic and professional standards involved, institutional and community requirements, the purpose of the research itself, the requirements and expectations of the sponsoring or funding agency or agencies etc. However, researchers and their institutions also have moral responsibility to the public trust. While including legal compliance and sound financial stewardship, researchers and their institutions need to keep clearly before their eyes the ultimate responsibility that research has for the betterment of the human condition. As an activity that furthers the human good, research must necessarily be approached as one among many ways that academic and professional investigations benefit humanity and culture. Research collaborations must be ordered such that these important ends are met.

### Points for Reflection

1. In terms of present efforts underway, what research collaborations are currently in process in one’s institution? Of what practical benefit are these collaborations to the research at hand and the mission of the local institution?
2. For research collaborations currently underway, identify the various complex factors posed? How effectively are these factors and needs met? If needed, how could these areas be increased and engaged so as to maximize benefits even more?
3. What research areas in your institution could be supported and augmented by increased research collaborations of any type? Identify each and explain? What complexities and factors might be involved? What potential obstacles or issues might there be? What are the potential risks if these are not effectively met? What potential risks are posed for the local institution unless research partnerships and collaborations are not increased?

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