On the Facilitation of Collaborative Research: Enter Stage Left, the Consortium Director

Betsy Rolland¹ and John D. Potter²,³,⁴

Over the years, we have watched hundreds of scientists in dozens of projects facilitate collaborative research. They came from a wide variety of disciplines and institutions and worked on projects of all shapes and sizes. Some are very good at it, some get by, some do poorly, and some finally grow into the role sometime in the last year of the funding. We have also watched scientists at professional conferences convene panels on team science, earnestly discussing the opportunities and challenges, especially the challenges, of collaborative science. Such work is time-consuming, frustrating, and incredibly difficult. Other scientists can be prickly and difficult to work with, and achieving consensus can be hard, especially when working virtually. Nonetheless, almost everyone acknowledges that some research questions can be addressed only through pooled efforts and pooled data. Not once at these meetings have we ever heard anyone question precisely why the principal investigators have been tasked with the responsibility of facilitating all of this work. Why are senior-level epidemiologists and biostatisticians (for that matter, senior clinicians and lab scientists) charged with not just leading the research aspects of collaboration, but also the organizational and logistical aspects?

All collaborative research must be coordinated and facilitated. However, precisely who is responsible for doing that work rarely gets discussed. We would like to suggest that expecting senior-level scientists to lead consortia is like asking commercial pilots to also maintain the airplane. Both are essential functions but require completely different knowledge bases and skill sets. It is a waste of valuable resources to use experienced researchers in this way. Here, we propose an alternative: the Consortium Director.

In most collaborative projects, the lead principal investigator is expected not only to oversee the scientific aims but also to devote time and attention to all the collaborative work of the group, such as the diverse tasks described above. We recommend that these two functions be divided into two separate roles, as each requires a substantial amount of effort and, really, different skills and experience. This division of labor is similar to the way large projects be divided into two separate roles, as each requires a substantial amount of effort and, really, different skills and experience. This division of labor is similar to the way large

The primary task of the Consortium Director is moving the project toward its scientific goals by focusing essentially exclusively on the time-consuming and challenging team-science aspects of the collaborative project, combining scientific and administrative knowledge and experience with excellent people skills and a deep understanding of how collaboration is actually managed. Much as we use the term metadata to refer to the structural information about our data, we can think of this work of collaboration as metawork, the structural and critical aspects of the project. As we envision this work, the Consortium Director plays a pivotal role in the collaborative project: strategic planning, collaboration development, negotiation of agreements like DUAs and IRBs, leading data harmonization projects, negotiating with funders; all of these could fall to the Consortium Director. Additional tasks could include facilitating difficult and contentious discussions (as well as warm and cuddly ones); leading frequent, iterative, and corrective program evaluations; writing or coordinating ancillary grants; developing and implementing consortium-level metrics of success; planning next steps, particularly scientific and policy translation, around the consortium’s findings; and identifying synergies across intraconsortium projects, as well as making connections with related projects elsewhere. Marketing and dissemination of study products would also be a useful contribution, as would working to make the consortium’s data and knowledge base a permanent resource accessible to other researchers.

The Consortium Director would work closely with the project’s principal investigators, and preferably be a coinvestigator her/himself, but the overall focus of this position is on facilitating the team-science and structural collaboration aspects of the Consortium to achieve the project’s goals rather than on specific aims for which s/he is directly responsible. This Consortium Director role is more than just a high-level project manager; indeed, to be done well, it requires a person who is a PhD-level scientist with relevant, deep domain knowledge, as well as interdisciplinary training and experience working in team-science initiatives, with a focus on leadership, negotiation, and team development. Although principal investigators may acquire such skills through trial and error over time as they engage in team-science projects during their careers, the Consortium Director is someone who has sought out existing training programs. The Clinical and Translation Science Award (CTSA) recipients have led the charge to develop such programs. TeamScience.net is one exemplar, developed at the Northwestern University CTSA by Drs. Holly Falk Krzesinski, Arlen Moller, and Bonnie Spring (1). This online course covers topics such as conflict resolution, ways to incentivize collaboration, communication strategies for enhancing teamwork, and

¹Assistant Director of Population Sciences, Carbone Cancer Center, University of Wisconsin-Madison, Madison, Wisconsin. ²Member and Senior Advisor, Public Health Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, Washington. ³Department of Epidemiology, School of Public Health, University of Washington, Seattle, Washington. ⁴Centre for Public Health Research, Massey University, Wellington, New Zealand.

Corresponding Author: Betsy Rolland, University of Wisconsin-Madison, Madison, WI 53705. Phone: 608-262-8314; Fax: 608-263-8613; E-mail: brolland@wisc.edu

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evaluating collaboration. A second exemplar is Leading Team Science Teams training developed by the Stanford University CTSA (2). Both are evidence-based programs aimed at teaching scientists to draw upon the literature on team science to help them facilitate team science.

A PhD-trained researcher will bring a broad understanding of the topic at hand, as well as personal experience with, and understanding of, the research process from idea generation through data collection and analysis to final publication. Whereas others can (and should) be trained to understand the collaborative research process, an investigator who has experienced this researcher role her/himself will know how deeply engaged researchers are with their work and be able to identify the pain points to design solutions that save time and effort. Finally, a PhD confers an appropriate level of social status in an academic environment. The degree signifies immersion in the culture of being a scientist and gives the Consortium Director insider status, helping, from the beginning, to develop the level of trust necessary for successful collaboration. This role might be a part-time position shared across multiple smaller consortia or a full-time position in a more demanding network. In short, the Consortium Director could take responsibility for all of the challenging aspects of team science most frequently mentioned, and often abhorred, by researchers.

By offloading these activities to a colleague explicitly trained in their development, employment, and oversight, projects will almost certainly save time and money and proceed more smoothly toward the achievement of their research objectives. In our research on Coordinating Centers, we saw this play out in multiple consortia: those with a designated Consortium Director (or sometimes a team) and clear expectations around that role were most successful in moving their science forward (3, 4).

As a major funder of team science initiatives, the NIH (Bethesda, MD) could recognize the Consortium Director as a valid and necessary role in collaborative work, one that could maximize the investment being made. Institutions, too, need to recognize the value of investing in a cadre of trained Consortium Directors as a major competitive advantage in support of their local scientists. Obviously, not every study will need all of these functions, but every large team-science initiative should have these tasks covered in some way. As cancer researchers, we need to ask, Who is best suited for this role? Is it really senior researchers? Is that really the best use of their time? Funders need to consider how best to structure team-science initiatives to ensure efficient and effective science. We believe that integrating Consortium Directors as facilitatory leaders of team science will allow the maximization of our collective investment in the biomedical research enterprise.

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