9. INSTITUTIONAL RESOURCES AND SUPPORT | Lois Wright Morton, Tom Richard, and Joe Colletti

The lead institution is an essential backbone for preparing a winning proposal, launching the project, successfully garnering resources needed to leverage the project, and assisting in completion of all project goals. Institutional support, including that of your co-PIs' institutions, can turn a good, solid project into an awesome project that everyone knows about, is proud of, and uses to showcase research excellence and innovation.

Pre-award, institutions play vital roles in signaling support to the potential team. These institutions can help identify team members and convene the team across institutions, can be directly involved in institutional leadership, can engage (find and pay for) an external grant coach/consultant, and can add key resources to ensure project success (e.g., staff, money, support for graduate students, indirect cost return to the project for operations, news releases, and media stories). Post-award, institutions can continue to signal ongoing support by engaging with team leadership, faculty, staff, and graduate students. They can also promote and reward team science, foster spaces and opportunities to extend collaborative partnerships, and work with you to reassess and gather resources, especially money, and develop team leadership.

If you do not yet have personal relationships with your institutional administrative leadership (e.g., department chair, center director, college dean, director of research), it is never too soon to start cultivating them. Your success in this project will build and strengthen the reputation of your institution and the home institutions of your co-PIs, so these administrators have a stake in your success and can work with you as partners. Do not overlook the roles these institutions can play during both pre- and post-award phases. Share your successes with your administrators; seek their advice; negotiate space, staff, and other resources the project needs; and involve them as appropriate. Find ways to acknowledge, show appreciation, and give public credit to their contributions.

Institutions vary in their administrative environment (top down/command-control; flat hierarchy with self-directed expectations); resource capacities; cultures; and the way they support and invest in their faculty and the research, extension/outreach, and education undertaken. You, as project director, will need to understand the culture, personalities, structures, processes, and "rules of the game" in your institution. Include in the core leadership team co-PIs from your partner institutions that can strengthen the collaborative effort and help navigate the unique culture and practices of their home institutions. Seek out individual administrators who will champion your project and run interference when needed.

Six areas meriting attention for cultivating institutional relationships in support of large collaborative projects are:

1. Navigating complex institutional layers
2. Relating to your funding agency
3. Identifying institutional resources and support
4. Working with external partners
5. Creating trust with your administrators
6. Using institutional infrastructure

Each can be addressed throughout the phases of your project as described in the following sections.

USDA-NIFA sponsored PINEMAP project director Tim Martin (second from right) discusses carbon sequestration with (left to right), NIFA Director Sonny Ramaswamy, PINEMAP field coordinator Josh Cucinella, and Jackie Burns, Director, Florida Agricultural Experiment Station.
Credit: Jessica Ireland

Navigating Complex Institutional Layers Across Space and Over Time

Large projects involving many institutions and funding sources have a complexity you will need to learn to navigate. Much of the institutional complexity evolves from the rules, processes, and paperwork associated with day-to-day procedures. Procedures such as writing subcontracts; budgeting and tracking expenditures; approving and paying invoices; making purchases; personnel recruitment, hiring, training, evaluating; media and communicating the work of the project; audit and accountability procedures; quality assurance requirements in the conduct of research; obtaining space and establishing your operations staff and helping them learn to work as a team. Many of these issues you need to understand as soon as you decide to submit a proposal – particularly institutional deadlines for proposal submission as well as policies and procedures for securing institutional support. This is the best time to negotiate for institutional support, as your institution probably wants the project to be funded, and their support offered now can strengthen the proposal. This is leverage you lose the moment the proposal is submitted. And don't be shy about asking your subcontractors to also solicit support from their institutions, although you need to recognize that subcontract institutions will likely be more reluctant than your home institution, as their names will not be featured as prominently in future press releases.

Key to ensuring that the project runs smoothly and tasks are completed as scheduled and on-budget is an operations staff with clear roles and responsibilities to build relationships and expertise in different aspects of the project, including with co-PIs' home institutions. Often, the project's proposed budgets underestimate management, accounting, and communication personnel staffing needs. While federal rules require human resources and financial and accounting management to be supported by indirect costs, projects of this scale require substantial additional levels of project management that either need to be covered by the grant or explicitly committed as institutional support.

With the announcement of the project award, take a hard look at whether project management and operations are adequately funded and where budget shortfalls are likely to occur. While it is far better to identify and address any shortfalls prior to proposal submission, at this point you may be able to renegotiate deliverables (especially if the agency cuts your budget) or even turn down the project if resources are clearly insufficient. This would be another time to seek advice and resources from your home institution for office space, equipment, supplemental operational staff, and bridge dollars while waiting for the funds to be released to the project's lead institution.

Members of the USDA-NIFA sponsored PINEMAP project team on a visit to the National Institute of Food and Agriculture headquarters.
Credit: Anonymous

Project director Lois Wright Morton and project manager Lori Abendroth (USDA-NIFA sponsored Sustainable Corn Project) are acknowledged for project-wide achievements by NIFA Director, Sonny Ramaswamy, at NIFA headquarters. Credit: Tim Martin

Funding Agency Resources and Support

The role of the funding agency is to allocate their dollars to high quality projects that will deliver on what was proposed. The project director is the "face" of the project representing the vision and activities of the collaborative team effort to accomplish stated goals and objectives (see Section 1, Qualities and Skills of a High Functioning Director, and Section 2, Molding the Team). Thus, you are the direct interface between the funding agency and the project and ultimately responsible for how well the project meets funders' expectations. Having made a decision to fund the project, you can expect that the funder will monitor and enforce the "agreement" represented by the proposal and their funding guidelines. Logistical support from the funder will vary with their entity rules, processes, and culture. Get to know the person(s) assigned to oversee your project and assure public accountability. Ask questions, seek clarification, and keep them updated on project progress, issues, and accomplishments. Help this person become deeply knowledgeable of the project so they can become its biggest advocate. Remember, they and their agency now also have a stake in the project's success.

Sometimes the funding agency can help the project to strategically re-align when circumstances change significantly; other times they will not have that flexibly for social, political, and/or economic reasons. Learn the culture of the funding agency so that you understand when they can be flexible to move with the project; and issues where they will take a hard, non-negotiable line. All funders have accountability rules and processes for documenting how award dollars are used; and expectations for activities, products and outcomes of the project. In most instances, they will expect you to communicate and to continuously update them on the project. This communication will range from in-person, telephone, and virtual media exchanges, to attendance at team meetings, requests for STEM documentation, routine annual progress reports, and unexpected team accomplishments and outcome updates. Expect to regularly develop compelling information about the project—website, social media, fact sheets, YouTube videos, technical reports, and peer-reviewed publications are key artifacts- that the person assigned to your project can use within their entity to showcase what a great investment they have made in funding this large, complex project. Even if they do not explicitly ask for these products, produce them! You will win their good will. Public funding agencies are expending taxpayer dollars and are expected to demonstrate to legislative members and staff and the public accountability on how public monies are being used. Private funding organizations have explicit missions and objectives, and they expect the project to meet and exceed their expectations. Information requests will show up when you least expect, so have some products in your back pocket, so you can respond quickly to unanticipated funder requests.

The USDA-NIFA sponsored Sustainable Corn project held a two-day conference to share project research with Midwest farmers and their crop advisors. Left to right Ernie Shea, North America Climate Smart Agriculture, Solutions for the Land; Lois Wright Morton, project director of Sustainable Corn CAP; Wendy Wintersteen, CALS Dean, Iowa State University, Fred Yoder, Ohio corn-soy farmer. Credit: Anonymous

Internal Institutional Support

The project director's and co-PIs' collaborating institutions can offer moral support as well as many types of in-kind and financial resources. Offices of Research at the university and college levels provide a variety of resources for building collaborative multi-institutional and interdisciplinary teams ranging from proposal initiation, writing, and submission to launching the project post-award and carrying out the work of the team in a high-performance, coordinated manner. Large collaborative projects need infrastructure resources that are often not funded by the project award. Seek guidance and support for unfunded operations personnel, management and research lab space, data management equipment and personnel support, office infrastructure such as telephone, information tech support, communications and media. Accounting support is essential in the construction and management of subcontracts, tracking expenditures and year-to-year budgets, and assuring accountability. These accounting expenses are funded through the indirect costs for federal awards, but since these projects are especially complex the accounting staff will likely be stressed – make sure their supervisors are aware of the project requirements and commit to providing sufficient high quality support. Progress reporting to funders, developing and updating the project website, and communicating with the media can be charged to direct costs. These and many other tasks all take time, staff, and resources.

An overlooked role of the institution is the political backstopping from deans and directors when research findings or other aspects of the team collaboration turn controversial. While they will be happy to take credit for good news stories, they need to also back you up if and when stakeholders don't like the research conclusions or, in some cases, even the underlying goals. Building social relationships and trust within the lead institution hierarchy can help make financial and institutional backing for the project available when there are unanticipated twists and turns.

One resource for professional relationship building and garnering resources within the land-grant university (LGU) system is a program called multi-state research committees (MRCs), funded under the Hatch Act. Each LGU is expected to participate and contribute to multi-state research and extension efforts. The multi-state committees are groups of interested scientists from multiple land-grant institutions who are organized around a central research and/or extension topic. These committees can be leveraged by contacting the LGU research director (sometimes referenced as the experiment station director) within each institution. The MRCs offer scientists opportunities to build interdisciplinary research capacity; construct teams to design and execute specific research;, encourage teamwork and taskwork;, develop trust and effective communication; and prepare scientists to lead larger, more complex research initiatives. In other colleges and universities, there may be other units that play similar roles. The directors of interdisciplinary centers and institutes often have experience organizing and leading large projects and can provide mentoring and help as you negotiate your institution's policies and procedures.

All institutions involved with a large, complex project, but especially the lead institution, must signal early and throughout the project that the project is important and valued, and that partitioning the project success among the many co-PIs is culturally acceptable. Moreover, all institutions must ensure that their tenure-eligible and tenured faculty can be rewarded for being involved with a project with multiple co-PIs. Despite strong evidence of the scholarly and practical impact of interdisciplinary research (Van Noorden 2015, NSF 2015) and the well recognized transaction costs (see Section 6, High Performance Teams), some promotion and tenure committees (and their external reviewers) do not weight co-PI efforts on interdisciplinary grants as strongly as sole-PI status on smaller disciplinary grants. As project director, you should make sure that junior faculty understand the culture of their departments, and be prepared to run interference for them with department heads and deans. This is a place where formal letters from you acknowledging faculty contributions to the project as it progresses can play an important role.

External Partner Support

The types of support and resources that external partners can offer the project are extensive and varied (see Section 8, Partners and Stakeholder Relationships). Establishing an advisory board is one of the most effective ways to build social, intellectual, political, and financial support for the project. Use the networks in your core leadership team to create a diverse, committed, high-profile board. The advisory board will be your advocate throughout the project. Do not hold them at arms' length, but pay attention to the signals that stakeholders, partner institutions, and other representatives give you about how active and in what capacity they want to be involved. The advisory board is an untapped resource that project leaders often overlook. As the project is launched and matures, new needs will arise. Utilize your co-PIs and advisory board to find additional funding and partners that can extend the work of the project in mutually beneficial ways.

Creating Mutually Trusting Relationships with Administrators

A thread throughout this primer is the dynamic complexity of directing a large, complex, multidisciplinary-transdisciplinary project and the ever changing conditions—rules, regulations, customs, and infrastructure of core institutions collaborating on the project- which occurs throughout the life of the project from the initiation to completion and legacy. Developing trust relationships with administrators in the lead institution and with the project's co-PIs home institution will go a long way to managing the complexity and solving routine and unexpected challenges that are inevitable in directing a large collaborative project. The institutions you work with are made up of many different kinds people who bring diverse skills and competencies, values, beliefs, and goals in the conduct of their roles and responsibilities. While each institution has its formal rules, administrators and their staff have informal rules of how they work together. They know the boundaries they consider permeable and those they view as impassable, and there is no manual that can prescribe how to best traverse this diverse and changing landscape. You must get to know the key people in your institution as well as your partners, understand what is important to them, and learn to respect their unique and quirky ways if you are to build a successful collaboration (see Section 3, Creating a Culture of Collaboration). These are the people who will champion the project and advocate for you when high stress events occur.

Concluding Thoughts

Your university, center, or organization is a key partner in helping to launch a successful and effective project. Each project director will have unique social, political, and institutional structures where the research project platform physically resides and a set of relationships, which each co-PI from other institutions bring to the project. These rules, regulations, and customs will differ by institution and can add friction to effective teamwork as well as expand what is possible. You will need to create effective performance feedback mechanisms and ensure adaptive capacity if you are to achieve excellent management outcomes. These mechanisms and capacities need to extend beyond the core project to encompass a much broader set of institutions and partners; these form the platform and infrastructure you will rely on for project success.

Take Away Messages:

- The lead institution is an essential backbone for preparing a winning proposal, launching the project, successfully garnering resources needed to leverage the project, and assisting in completion of all project goals. Do not overlook the many roles your institution can play during both pre- and post-award phases. Share project successes with your administrators; seek their advice; negotiate space and staff and other resources the project needs; and involve them as appropriate. Find ways to acknowledge, show appreciation, and give public credit to their contributions.

- You will need to learn to navigate across the complexity of multiple institutions in order to ensure that the project runs smoothly and tasks are completed as scheduled and on-budget.

- You will need to communicate and to continuously update the funding agency on your project. Develop compelling information about the project that the funding agency can use to showcase what a great investment was made in the project.

- Sometimes, the funding agency can help the project to strategically re-align when circumstances change significantly. Learn the culture of the funding agency so that you understand when they can be flexible to move with the project.

- Offices of Research at the university and college levels provide a variety of resources for building collaborative multi-institutional and interdisciplinary teams. These resources include proposal initiation, writing, submission, launching the project post-award, and carrying out the work of the team in a high-performance, coordinated manner. Seek guidance and support for unfunded operations personnel; management and research lab space; data management equipment and personnel support; office infrastructure such as telephones; information tech support; communications; and media.

- Land-grant university multi-research committees offer scientists opportunities to build interdisciplinary research capacity; construct teams to design and execute specific research; encourage teamwork and taskwork; develop trust and effective communication; and prepare scientists to lead larger more complex research initiatives.

- Establishing an advisory board is one of the most effective ways to build social, intellectual, political, and financial support for the project. Use your core leadership team to create a diverse, committed, high-profile board.