

Beyond the R Series – High-Quality Mixed Methods Activities in Successful Fellowship, Career, Training, and Center Grant Applications

The National Institutes of Health, as well as many other supporters of biomedical, social and behavioral science research, fund a wide range of scientific activities beyond the traditional research (R series) grants. The foundation of all successful requests for funding is their persuasive presentation of a plan of research. However, applications for other types of support also must convey to reviewers and funders a capacity in other key domains as well, such as mentorship and environment for career and training awards, and leadership, administrative structure, and integration across research activities for center grants and multi-project initiatives.

This section addresses how a mixed methods approach to research influences the presentation of the key elements in each of these unique types of funding applications. Not all Institutes offer funding in all of these categories, and often a specific mechanism may require unique capacity or activities. Nevertheless, across each type of special funding, there are common elements to consider when writing or evaluating an application that includes mixed methods research. These types of applications and activities have not historically included specific descriptions of mixed methods research; however, as the field continues to develop, there will be more funded examples of such training programs. A search of the NIH RePORTER database will identify specific examples of successful applications in specific fields, to serve as models.

- ❖ Building Capacity in Individual Scholars – Fellowship and Career Awards
- ❖ Providing Institutional Training – The T Series
- ❖ Creating Collaborative Research Centers and Programs – The P Series

Building Capacity in Individual Scholars – Fellowship and Career Awards

Fellowship Awards – The F Series

- ❖ Fellowship series awards, as the name indicates, are training, not research awards. They are awarded to applicant fellows who demonstrate “potential for a productive career, ... the need for the proposed training, and ... a research training proposal, sponsor, and environment which will satisfy those needs.” Criteria for evaluating these awards include assessment of the applicant, the sponsors, collaborators and consultants, the research training plan, the training potential, and the institutional environment and commitment to training.

Career Awards – The K Series

- ❖ Although commonly thought of as exclusively for early-career stage investigators, there are categories of career awards that support early postdoctoral training, mid-career, or established investigators, and categories specifically for clinician-researchers, and quantitative researchers. Career awards offer single candidates protected time to carry out a series of training and research activities in a focused, interconnected way, in order to enable the candidate to enhance their capacity for scholarship more fully, than in their existing circumstances. Criteria for evaluating K awards are similar to those for fellowships. They specifically assess the likelihood “for the candidate to maintain a strong research program, taking into consideration” the candidate, career development plan, research plan, mentors, collaborators, or (for established investigators) the plan to provide mentoring, and the environment and institutional commitment.

F and K Series Awards – Issues Specific to Mixed Methods Research

For career awards and fellowships in which some portion of the supported activities will utilize, and build, the trainee’s capacity in mixed methods, the following criteria may be relevant.

- ❖ **Candidate:** The candidate him or herself should present a compelling rationale for investing in mixed methods training. If the applicant is already a competent quantitative and/or qualitative researcher, there should be a strong argument presented as to how enhanced mixed methods skills will move their scholarship capacity forward. If they
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are trained in only one area (e.g., quantitative research), then there should be a clear plan for developing skills in both qualitative and quantitative research, as well as in mixed methods. If there are letters of support, these should provide evidence that mixed methods is an important component of the candidate's future contributions to the relevant field of science.

- ❖ **Mentors:** The plan for mentorship is especially critical for mixed methods research. If there is a single mentor, then the capacity for guidance and skill development in mixed methods must be clearly demonstrated. However, given that most environments do not have mixed methods researchers in all areas of science, it is important to critically assess the plan for shared guidance, and the likelihood of success. If the candidate proposes a collaborative mentorship model, there must be evidence that the mentors involved have planned this carefully, and that the mentors have each previously co-mentored similar candidates (ideally, together). A split mentorship model, in which one person will provide qualitative and one quantitative research guidance, is less likely to successfully improve the candidate's capacity in mixed methods research. Split arrangements can be difficult for trainees to navigate, and can result in little attention to the trainees building skills they will need to integrate their training experiences, goals, and research findings.

One indicator of the feasibility is the mentor(s)'s demonstrated prior accomplishments in this regard, such as a list of previous trainees and their foci, skill sets gained, and career paths post-training. For more established candidates, the criteria are evidence of their own mentorship accomplishments and their prior contributions to mixed methods training of others.

Letters of support from people in related fields also can be used persuasively to demonstrate that mixed methods training will enable the trainee to make innovative and needed research contributions to the relevant fields or areas of research. To the extent that these experts can specifically state how the field or problem could benefit from expertise in mixed methods, and that the trainee will fill a needed gap in expertise, then this further reinforces the case that the trainee and mentor will make in the training and research plan.

- ❖ **Training Environment:** As with mentorship, the most compelling evidence of an adequate training environment for mixed methods research capacity building is the existence of other trainees in the same areas, promising a supportive collective intellectual atmosphere for the trainee. As well, some review of the types and diversity of funding and scholarship produced is important to include. In addition, an institution or group's previous track record of training scholars in this area, and the current achievement of those former trainees, is also persuasive in regard to future capacity. For mixed methods scientists, the issues of separate mentorship also can carry over into the training environment. Thus, capacity should be documented by specific structural indicators of a mixed methods environment, such as journal clubs, classes, and seminars, rather than a list of separate qualitative and quantitative events and opportunities. If these do not yet exist in the home institution or environment, the application should include specific experiences, such as meetings, short courses, or other activities, that will supplement the home institution's resources.
- ❖ **Research and Training Plan:** In addition to the elements discussed in the section on the R Series research plan, career and fellowship awards must carefully explain how the research to be undertaken will be consistent with the candidate's goals to develop as a mixed methods researcher. Thus, mapping specific experiences and activities within the research plan to opportunities for training and skill development is important. For mixed methods researchers, capacity-building must involve continued contact with the larger mixed methods community of scholars, and ongoing assessment of the degree to which full integration of methodologies is occurring in the candidate's ongoing and emerging work. Structured opportunities, such as short courses and scientific meetings, as well as ongoing informal training should be described.

Products from the training should include the types of professional meetings where the trainee will present his or her work and how those audiences will enhance the trainee's professional development. Similarly, journals open to mixed methods work in the relevant field should be discussed.

Providing Institutional Training – The T Series

- ❖ For proposals that seek funding for the training of multiple pre- or postdoctoral students, the value added of mixed methods capacity for training is substantial. One important criterion for the overall impact evaluation of institutional



training grants is the “likelihood that a program will exert a sustained powerful influence on the research field(s) involved.” Therefore, if a training program can offer mixed methods training as one component of its contributions, there is a great likelihood its impact will be substantial, given the scarcity of mixed methods training opportunities.

- ❖ The criteria for mentorship, as well as the institutional environment and capacity (see discussion in the F & K Series section), are even more important in an application for institutional training grants. When students from different backgrounds and perspectives interact, the mixed methods trainees will benefit from multiple perspectives and epistemologies of science. These are fundamental skills for emerging mixed methods scientists. However, it is even more important in this case for faculty mentors to avoid creating disciplinary “camps,” and subgroups of students and skill sets within the program. If not all students are trained in mixed methods, there nevertheless should be specific resources identified for the proportion of trainees who will become skilled in mixed methods. Furthermore, the culture of the program should reflect the respectful inclusion of mixed methods as an equal partner area, so that all trainees are socialized into this view.

Creating Collaborative Research Centers and Programs – The P Series

For larger collaborative efforts, including center grants, the fundamental quality of the individual research projects proposed creates the foundation for the overall center. However, center grants are evaluated as a whole, and therefore must create synergies across individual research and educational activities. These mechanisms therefore also are ideally suited for building or enhancing mixed methods research capacity at an institution, if the scientific area of focus can demonstrably benefit from such capacity.

- ❖ **Research Projects:** In program project grants, where there are multiple independent research projects proposed, one overarching criterion is whether or not there will be value added to the impact of the individual investigations, because they are taking place within a center and concurrently with the other proposed projects and activities. If one research activity uses only a qualitative approach and another a strictly quantitative approach, it could be tempting to describe the overall research as taking a mixed methods approach; however, without explicit mixed methods strategies throughout, this is not likely to be persuasive to knowledgeable reviewers. A specific project focusing on mixing data, analytical strategies, inference, and interpretation from separate studies could be feasible. However, the value of this would depend both on the objectives desired and the feasibility of the mixed research process. It may be more feasible to design at least one of the projects as a separate stand-alone activity, which nevertheless contributes to the overall scientific goals of the center or program.
- ❖ **Cores:** In program projects, cores are organizational units that consolidate activities, resources, and multiple projects, and thus create synergies and economies of scale for resource use. As well, they often can serve to enhance the scientific impact of activities and to disseminate results. In program projects and centers that include mixed methods research, the benefits of methodology and analysis cores are substantial. Cores allow staff and investigators who may be tasked with different individual contributions to communicate effectively and to ensure that equivalent methodologies, measures, and procedures are undertaken. For mixed methods, a well-designed core, containing both the appropriate personnel and resources, will ensure high-quality products from both individual research projects and the center as a whole.

Beyond methodology cores, other types of cores focus on training and education, or dissemination and community participation activities. Administrative cores often are charged with tasks such as facilitating input and feedback from external experts or managing IRB issues. Again, centers that include mixed methods research must use core resources to support the unique needs of this field. Therefore, IRB applications for mixed methods work must be able to draw on expertise about the unique mixed methods issues in regard to use of participants, data collection, and dissemination. Community-based advisory boards, composed of persons with differing levels of sophistication toward research in general, and mixed methods in particular, will provide both a challenge and an opportunity for creating support for these elements of the research. The dissemination core may create content for web and other media activities, help select venues such as journals and conferences where mixed methods work is accepted, and broadly bring capacity to the center to maximize impact of the research.

- ❖ **Resources and Environment:** Institutional capacity for mixed methods research in centers includes many of the considerations discussed for individual projects. However, given the prominence of a center in most institutions, the commitments from the institution to serve as an adequate home for the venture should be clear. Review of



institutional capacity should include looking for evidence that activities of similar scope and purpose have been successful previously, as well as evidence of an existing niche for the work of the center within the scientific culture of the organization. If the center will bring mixed methods research and training capacity to an organization where it has not existed previously, this should be presented as a logical next step in the growth and mission of the organization.

- ❖ **Program Leadership:** Scientific leaders direct individual projects within centers, and the center director plays less of a direct role in the scientific management of each project. However, the overall leadership of a center requires an individual who can create opportunities for balance and synergy within and across research teams and projects. Presenting the center to external stakeholder audiences requires the ability to communicate persuasively about the value of a mixed methods approach to the given scientific questions and issues addressed by the center.
- ❖ **Program as an Integrated Effort:** One of the most important evaluative elements of a center grant review is the assessment of the program as an integrated effort. Successful program projects create systems of research activities and projects, all working toward a well-defined scientific goal. As discussed previously, many of the fundamental epistemological and methodological foundations of mixed methods research are based on integration, making a program project that includes mixed methods a compelling activity, if designed and presented carefully.
- ❖ **Impact:** Impact scores are assigned to program projects and centers by reviewers to assess the “scientific merit, impact, and coherence of the overall application as a synergistic and interactive enterprise.” Given the substantial resources used by such centers and program projects, the return on investment must be seen as moving a field forward in ways that are significantly different than those of individual projects. Further, reviewers must specify which audiences and communities of scholarship benefit from the resources given to this center activity, and in what ways, and to what extent.

