

Chapter 2

Strategies for Establishing a PFF Program

The hallmarks of a PFF program include institutional collaboration within a cluster, new forms of mentoring, departmental and university activities, and partner institution activities. Participants in this third phase tested the PFF ideas in practice and assessed the results. In this chapter we identify steps they took and issues they considered in establishing departmental programs.

The major impetus for PFF programs that are the focus of this report came largely from departmental faculty members, including chairs, directors of graduate studies, and faculty leaders. Graduate deans and directors of teaching-learning centers also contributed to the development of PFF programs in science and mathematics departments. A PFF program can be initiated by anyone who a) has standing in graduate education, b) is aware of the advantages offered by PFF programs, and c) is willing to work with various constituencies to forge a coalition to support experimentation with new approaches to graduate education.

The planners of this PFF project knew that educational programs established with the aid of grants often disappeared when the grant ended. They urged cluster leaders to employ strategies in developing PFF programs that would enhance their chances of being sustained beyond the conclusion of the grant period. Of course, after only three years of experience with the clusters, it is not possible to know how many of the programs will survive. But planning for sustainability is a useful approach for individuals starting new programs.

Identify a Faculty Director

Leadership by faculty members committed to innovate with core PFF concepts is pivotal to success. A faculty member who sees value in the ideals of PFF must come forward, or be recruited, to provide leadership for launching a PFF program and to serve as the director. Directors included individuals who offer a course on the teaching of the discipline, such as Arlene Russell

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in chemistry at the University of California, Los Angeles; senior faculty members, such as John Cumalat in physics at the University of Colorado; relatively new faculty members appointed specifically for this initiative, such as Paula Lemons in biology at Duke University; and those responsible for teaching assistant development programs, such as Virginia Warfield in mathematics at the University of Washington.

Effective departmental leaders need more than commitment to the PFF vision. They must be able to communicate its importance to a range of audiences, help a planning group reach agreement about a sound program design, see that the program elements are implemented, serve as mentors to the graduate student participants, and facilitate interactions between all parties involved.

Leaders of departmental PFF programs agree that if PFF directors are to be effective, more than personal qualities are needed. They also need institutional support. The leaders conclude that those who hold the assignment of PFF director as part of their regular workload have been more effective than

those who, despite admirable enthusiasm, have attempted to provide leadership in addition to their normal workload. Explicit recognition of the important responsibilities of the program director by the institution—in the form of reassigned time or salary supplement—is a key element of a viable program.

Gain Graduate Faculty Participation

Graduate faculty members participate in a PFF program in a number of ways. They serve as mentors to PFF graduate students in developing their skills in teaching, research, and professional service; advise students on other aspects of the academic profession; participate in PFF seminars and workshops; and offer suggestions for improving the program and involving individuals from underrepresented groups. They often facilitate interactions between partner institution faculty and graduate students. Most discuss faculty roles with their students and encourage those who might be interested in academic careers to get involved in the PFF program.

Graduate faculty often have two concerns about PFF. Since the primary interests of most graduate faculty members are their research and the training of their students to conduct research, they are concerned that PFF might take time away from research. Their support for student participation in PFF activities depends on their understanding that research remains central to the doctoral degree and that PFF activities can be arranged so that they do not diminish students' research efforts.

Another concern of faculty is that student involvement in such a program might extend time to degree. This is a legitimate concern and needs to be addressed with accurate information. In a survey of forty-two graduate faculty involved in this project, 88 percent said they thought their students'

involvement in PFF would have no significant impact on the time to degree (Thomas 2002). These results are similar to earlier surveys of graduate students (Pruitt-Logan, Gaff, and Weibl 1998), in which 83 percent said that their involvement in PFF would not increase their time to degree while 14 percent said it would. The surveys by Pruitt-Logan, et al. also found that 4 percent of students said participation would speed up the completion of the degree, possibly because they were more definite about wanting an academic career and became more goal oriented in their studies.

Caution must be used in interpreting these self-reported results offered by faculty members and students before the degrees actually were completed. Nonetheless, the majority of faculty members in the sciences and graduate students in all fields do not perceive that participation in PFF programs increases the time needed to earn a degree. Further, some students say they are not concerned that more time might be required, as long as they are learning valuable lessons that will enhance their careers.

Funding by NSF provides a powerful signal to the institutions, departments, and faculty of both the national importance of the project and its importance to the mission of the disciplines. Faculty perception of the importance of PFF is reinforced by association with their disciplinary society, and by the sponsorship provided by the national associations, the Council of Graduate Schools, and the Association of American Colleges and Universities. Similarly, institutional support for the campus program, such as matching funds or formal incorporation of PFF activities into graduate curricula, indicates that the university values PFF.

Participation in PFF events gives faculty members information about the actual program, provides them a chance to hear what their colleagues think about it, and allows them to observe that their students value PFF.



PFF leaders in science and mathematics report that most graduate faculty members who have been asked by the program director to make a short time commitment, such as participating in a panel discussion, seminar, or workshop, have been generous with their time, expertise, and facilities. Once involved, they tend to become supportive of PFF for their students. In general, less involved graduate faculty provide little active resistance to the participation of their graduate students in PFF activities, as long as these activities do not interfere with their students' research.

Identify Cluster Partners

The task of creating a cluster of different kinds of institutions—a PFF hallmark—is challenging. The cluster of diverse institutions—such as liberal arts colleges, comprehensive universities, and community colleges—represents the variety of institutional contexts within which graduate students might pursue a career. Developing this new form of institutional collaboration may involve overcoming a history of competition and stereotypes about other types of institutions and developing a spirit of cooperation for the purpose of preparing the next generation of faculty members. For example, faculty members may think in terms of prestige, making assumptions about what others might, or might not, be able to contribute to the program. And those at one institution may think of themselves as more accomplished researchers, more dedicated teachers, or more committed to educating a diverse student body than faculty at other institutions. But when faculty members collaborate and get to know each other, they soon learn that these views are simplistic, that the common hierarchies by which institutions are ranked are counterproductive, and that there are many strengths that faculty at each type of institution can bring to the program.

Issues in organizing clusters include the administrative complexity and the corresponding time required in recruiting, organizing, and maintaining the clusters. When a university already has established a centralized PFF program (as occurred with institutions that participated in the first two PFF phases), the task of organizing a departmental cluster may be a relatively easy matter, since the PFF director can take advantage of cluster arrangements

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already developed by the graduate school. For example, Arizona State University and the University of Washington had established PFF clusters in the first phases, before this PFF phase 3 project was initiated, so that when the departments of mathematics wished to create their own PFF programs, they could build on those continuing relationships with partner institutions. On the other hand, the departments of mathematics at Binghamton University and Virginia Polytechnic Institute and State University (Virginia Tech) were the first to initiate PFF programs

at their institutions. This meant that their departmental leaders had to contact colleagues in mathematics departments at other institutions and invite them to participate in a grant application and the subsequent PFF program.

One of the challenges in the cluster concept is to explain what PFF and the anchor institution have to offer the partner faculty, departments, and institutions. This should be carefully considered before any contact is made,



since partner school representatives often ask this question early in discussions about setting up a cluster.

A number of relationships already may exist between research universities and potential partner institutions, including research and educational collaborations between faculty members and administrators; these relationships can be the starting point for developing clusters. Once potential partner faculty are identified, the next step in their recruitment is to invite them to an initial meeting where the goals are explained and program possibilities are presented. After they have become involved in the program, they can be asked to recruit some of their colleagues.

Appoint a Steering Committee

It is necessary to involve all the relevant constituencies from participating institutions in the process of defining program goals, planning program activities, and developing long-range plans. That is why PFF leaders in science and mathematics recommend forming a steering committee that includes graduate faculty members, graduate students, and graduate or academic deans, as well as faculty members and academic administrators from partner institutions. Ideally, as with the physics cluster at the University of California, San Diego, the steering committee includes a staff member from the graduate university's center for teaching and learning, which has resources that can be a source of support for the PFF program.

The committee usually needs to take time to assess members' perspectives on preparation of future faculty, understand differences in their academic cultures, and sense the potential contributions that each institution can make to the cluster. Meetings that include a meal or refreshments usually improve attendance and provide a comfortable context for discussions.

Once the PFF program has begun, leaders have found it valuable for the steering committee to shift its focus from planning to overseeing the program. They suggest that the committee meet at least once per academic term to keep participants informed about program events and to discuss issues related to the program. Continuing opportunities for communicating across constituencies and reaffirming involvement are critical to an effective program. In order to facilitate communication, each partner institution usually has one designated contact who is familiar with the overall PFF program.

Many programs appoint a senior graduate student as PFF administrative assistant, which is itself a valuable experience, because this assistant is at the hub of program planning and administration and sees the program from the perspectives of all constituencies. Communication among participants is vital, and some programs facilitate this by developing a PFF cluster Web site or electronic listserv.

Recruit Graduate Student Participants

Graduate students have a hunger for professional development opportunities concerning academic careers, and they tend to be attracted to the ideas of PFF. Their recruitment is among the easiest tasks in setting up a program. Indeed, graduate students are perhaps the best advocates for PFF and the best recruiters, often through informal conversations with their peers. Just as in marketing products, word of mouth seems to be the best advertising for PFF.

Graduate students are attracted to PFF for a variety of reasons. Some are certain they want an academic career and seek to learn as much as they can about their chosen profession. Others want to explore the possibility of a faculty career and wish to learn about faculty roles at a variety of institutions.



Many say that they would like to enhance their teaching capacities and acquire credentials. Nearly all want to be more competitive in securing their first academic position, and they believe that PFF gives them both some valuable experience that others may not have and a “credential” that constitutes a competitive advantage.

One of the critical recruitment issues is that women, African Americans, Hispanics, and persons with disabilities are underrepresented in the sciences and mathematics. PFF leaders have sought to enhance the participation of underrepresented groups by connecting recruitment efforts to institutional programs designed to facilitate the matriculation of members of these groups. One example is the biology PFF program at the University of South Carolina, which builds on the institution’s ongoing efforts to encourage minority graduate students to pursue careers in academia through its African American Professors Program. Another example is the Howard University program in physics, which draws minority students through the university’s Alliances for Graduate Education and the Professoriate program (AGEP).

PFF leaders report that the flexibility of their programs enables graduate students to participate when they are interested and for as long as their interest and time allow. Some graduate students find that during their first two years, PFF programs complement teaching assistant training and improve their contribution to the department’s undergraduate teaching efforts. Those in their later years may benefit more from participating in intensive teach-

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ing activities at cluster institutions, such as co-teaching a course, or a portion of a course, with a mentor at the cluster institution or being responsible for an entire course during the summer or regular academic year.

Students in the later stages of their graduate work also benefit from participating in service activities, such as faculty governance and community engagement.

Several PFF programs offer their participants graduate credit for courses, some give a certificate for completion, and others note PFF participation on the transcript. However it is done, recognition for student completion of a PFF program is important. The addition of a formally documented PFF experience on the résumé and transcript can significantly improve a graduate student's chances of obtaining an academic position at those institutions that consider good teaching and service to be important criteria in new faculty hires. Documentation also helps to create a market demand for this new type of faculty preparation by informing faculty search committees about candidates with special qualifications.

Institute New Forms of Mentoring

Mentoring is another hallmark of PFF programs. It takes several forms: both traditional mentoring for research by graduate faculty and mentoring for teaching and professional service by both graduate and partner faculty. The relationship between graduate students and their dissertation research mentors is usually well defined. The PFF mentoring relationship typically is more flexible and is designed to meet the particular professional development needs of the graduate student. An important advantage of the PFF program is that participating students have access to at least one mentor other than the research adviser. This allows students to establish a relationship with fac-



ulty members who have expertise in their content specialties as well as expertise in teaching and service.

One of the most powerful innovations of PFF is the opportunity for graduate students to work with a faculty mentor at a partner institution. This arrangement offers graduate students a relationship with faculty members who can introduce them to the distinctive qualities of the partner institution, the specific challenges of teaching that institution's student body, and the roles of faculty members in the shared governance of their department or institution.

The process of assigning PFF mentors to students varies. Some directors collect résumés from faculty and allow graduate students to choose mentors, or vice versa. Often the assignment results from a stepwise process of exchanging information between both parties until a decision is made. Sometimes graduate students visit a partner institution and meet with potential mentors. Mentoring begins when a suitable relationship with one of those faculty is agreed to.

Regardless of how the relationship is established, PFF leaders agree that it is important for both parties to decide on a specific set of goals, activities, means of assessment and feedback, and the amount of time involved. Truman Schwartz, a professor from Macalester College, and Sherri Hunt, a chemistry student at the University of Minnesota, were a mentor-mentee pair. They identified five keys to a successful PFF mentoring experience (Hunt and Schwartz 2001): thorough preparation, good communication, clear goals, significant effort by both mentor and mentored student, and compatible personalities.

In the PFF program in biology at the University of South Carolina, graduate students who serve as adjunct instructors at a partner school are

assigned to a faculty mentor. The goal is for the student to develop a sustained relationship with at least one faculty mentor who can not only reveal some of the mysteries of the academy but also serve as a professional colleague. Often, this mentor later serves as a reference in the job search and

becomes part of a professional network when the student becomes a new faculty member.

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PFF leaders indicate that the mentoring relationship usually has positive outcomes for both graduate students and faculty. Graduate students gain insights and perspectives from their mentors. For example, Jason Cody, an assistant professor of chemistry at Lake Forest College (Cody 2001), said that his PFF experience while at Northwestern University had considerable impact with little time invested, which he estimated was less than 100 hours, including travel. He reported three important benefits: complete responsibility for part of a course, opportunity to receive feedback on teaching without negative professional consequences, and realistic ideas

about an academic career. He noted, “These benefits cannot be achieved as a TA at Northwestern.” It is significant that he has since served as a faculty mentor for a PFF graduate student at his alma mater, giving back value that he received as a graduate student.

Secure the Support of Partner Faculty

Partner faculty roles are essential in PFF programs. Although their involvement varies among programs, typical activities include the following: serving as mentors to PFF students who teach units of their courses, introducing students to significant efforts on their own campuses to improve undergraduate learning, serving as participants in teaching PFF seminars, and allowing PFF students to shadow them in service activities, such as attending faculty committee meetings or participating in faculty development activities.

Responsibilities like these require the active involvement of partner institution faculty members in academic programs at research universities. When first hearing about PFF, they, like the graduate faculty, have concerns. Given the historical separation between their own institutions and the doctoral university anchoring the PFF cluster, many are suspicious that in becoming teaching mentors for graduate students, they are making up for the neglect of teaching by the graduate faculty. Frequently, they already have a heavy teaching load as well as research and service responsibilities and are concerned about taking on more work. And, it is not always clear what benefits they will derive from involvement. They want to know if they will be compensated.

Many answers to these questions are available. A precondition for a successful, ongoing PFF program is respect for the partner faculty members, their institutions, and their contributions to the education of graduate students. PFF is not a matter of compensating for deficiencies at the research university; rather, each type of institution contributes what it does best, and they collaborate so that students receive the best that each can offer.

Partner faculty members do have full-time commitments, and they do need incentives for taking on additional responsibilities. Although some PFF programs provide modest honoraria to partner faculty, most do not.

Common incentives include: provision of a small professional development fund that can be used tax-free for a variety of activities; access to the university's facilities, such as the library, laboratories, and computing resources; inclusion of the names of faculty members in printed materials and other public acknowledgment of their contributions; a formal letter of appreciation from the PFF program director, with copies to the partner institution's administration that can be used in personnel reviews; support for travel to make PFF presentations; and invitations to the department's intellectual and social activities.

Importantly, the primary motivations of partner faculty for participating in PFF programs have little to do with these tangible benefits. Most do it for a variety of intrinsic motivations. They emphatically agree that serving as mentors to PFF doctoral students is a better way of preparing the next generation of academics than the way they were prepared. Many note that they are committed to helping future faculty both see the attraction of their kind of institution and prepare for a career there. Since most of the mentors are senior faculty, they report being motivated by a disposition for generativity, for assisting the next generation in "learning the ropes" of the academic profession.

Once the goals and philosophy of PFF are understood and a spirit of mutual respect and collaboration is established, the level of acceptance of PFF at partner institutions typically is high. Partner faculty share the belief with graduate faculty that providing PFF opportunities to graduate students is the right thing to do. They also view the opportunity to interact and work with PFF participants as a major benefit. Moreover, they themselves benefit from a closer relationship with the academic department at the research university, which sometimes leads to collaboration on other professional projects.



Some partner schools that depend on a number of adjunct faculty members regard PFF programs as reliable sources of motivated and effective instructors. These schools sometimes recruit PFF students as adjunct faculty to serve as sabbatical replacements or offer courses in subjects not currently available at the partner institution. Some PFF students give talks to enrich the partner institution's program, and they can provide links to laboratories at the research university, opening new opportunities for the partner schools' undergraduates.

Secure Funding

Leaders of PFF programs, whether departmental or university-wide, understand that establishing and maintaining a program does not take a lot of money, but it does take some. Providing budgetary support is one of the key indicators that a program can be sustained after it is launched with a grant.

The grants to departments in this third phase of PFF were small—\$10,000 for each of two years—and they were matched by institutional funds, giving each department a program fund of \$20,000 per year. The matching funds came from various sources—the department, the graduate school, and the academic dean's office. In fact, most PFF programs did not spend the full budget after two years and were able to extend the funds to cover nearly three academic years. The fact that two large budget items—faculty salaries and student stipends—were not grant supported meant that all grant funds could be used for program purposes.

At a PFF meeting in October 2001, as the United States was in a recession, most PFF cluster leaders anticipated a continuation of PFF after the grant period. A few from states projecting reduced revenues and smaller

budgets for higher education expressed concerns that budget cuts would make it difficult for their universities to support even a successful PFF program. But since budgets always reflect values and priorities, building a coalition of students and faculty members who know first hand the benefits of PFF can counteract this threat.

Departments varied in their use of the strategies identified in this chapter, and PFF leaders report that they make adjustments throughout the course of their programs so that they meet the needs of their various constituencies. From the outset the aim has been that PFF programs become institutionalized, not simply temporary additions to doctoral programs. After only three years it is not possible to know whether all the programs described in this chapter will become institutionalized, but the suggestions offered here are valuable steps toward the goal of developing sustainable programs.

