

CHAPTER 3

EFFECTIVE RECRUITMENT AND SELECTION STRATEGIES FOR GK–12 FELLOWS AND TEACHERS

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High school students perform a chemistry experiment, supervised by a GK-12 Fellow from the University of Puerto Rico.

CHAPTER HIGHLIGHTS

- ▶ Successful projects use their members to help recruit new Fellows and Teachers.
- ▶ Online materials make the application process run smoothly.
- ▶ Selection of new GK–12 Fellows and Teachers should be based on the goals, expectations, and specific model of the project.

THE SUCCESS OF A GK–12 PROJECT is heavily dependent on the quality of the people recruited, particularly the leadership, Fellows, and Teachers. In recruiting, it is fundamentally important for a GK–12 project to use active members of the community who are familiar with the goals, objectives, and expectations of the project. All members of the project can assist with this recruitment effort by disseminating information about the advantages and successes of the project within their own networks. In this way, they become strong advocates in the STEM research and education communities and can help identify suitable STEM graduate students, K–12 teachers, and schools.

To succeed in recruiting Fellows and Teachers, the GK–12 project leadership team must communicate the benefits of the project effectively to potential Fellows, research mentors, K–12 teachers, and schools. (See Chapter 12 for a detailed discussion of the evidence of the success of this model.)

RECRUITMENT

The GK–12 leadership is responsible for leading the recruitment and selection of the other project participants. Many projects form a selection committee that is responsible for identifying, recruiting, and selecting Fellows and Teachers. (Other projects rely on the project director alone to do the selection.) The selection committee can vary in size and may include the project director, at least one STEM faculty member, a GK–12 Teacher, and a GK–12 Fellow. Additional members might be a faculty member from the education department and an evaluator. For multidisciplinary projects, having representatives from the different disciplines involved is recommended, especially representatives from those areas of research included within the overarching theme of the project. Having former GK–12 Fellows and GK–12 Teachers on the committee provides an effective means of disseminating information about the success of the project and recruiting new Teachers and Fellows.

In order to recruit participants with the appropriate skills and potential, GK–12 projects must articulate and advertise their choice(s) of discipline(s), model format,

goals, objectives and expectations. Most GK–12 projects use websites to disseminate this information. They also use members of the GK–12 community as ambassadors, since GK–12 Teachers and Fellows are familiar with the project and can provide an authentic point of view for prospective new Teachers and Fellows who are interested in the project. GK–12 Teachers and Fellows are also familiar with the culture of their departments, schools, and universities.

Recruiting University Faculty

If a project is just starting out, the founding core team will most likely need to reach out and find other faculty to participate. Later, it might be useful to circulate new faculty onto the project team. To recruit new faculty members for the project, it is recommended that university administrators (the vice president of research, deans, and department heads) be briefed on the objectives of the project and the potential benefits that participation will have for all members of the university community. Having support from university administration will facilitate the dissemination of information and can help to identify suitable faculty members for the project. The strategies for recruiting university faculty are also helpful in obtaining the support of the research advisors of the GK–12 Fellows.

Recruiting GK–12 Fellows

Communication about open GK–12 Fellow positions should be sent by the leadership of the project to the deans of STEM colleges, to department heads, and to other university leaders. Such communication should also be sent to all graduate students in the discipline(s) involved in the GK–12 project. Other campus graduate student communities, including the graduate student government, departmental professional societies, and campus organizations that serve under-represented minorities in STEM education (such as the National Society of Black Engineers; the Society of Hispanic Professional Engineers; and the Society for the Advancement of Hispanics/Chicanos and Native Americans in Science), can help with this dissemination and advertisement effort. All communications, from email to flyers, should contain the link to the project’s website, along with information about the requirements and expectations of potential Fellows. Efforts should be made as well to distribute information to any partnering minority-serving universities. Past and current Fellows should be enlisted to help spread the word to their labmates and other peers. The research

EFFECTIVE STRATEGIES FOR RECRUITING FACULTY AND RESEARCH MENTORS

- Build institutional support by offering presentations that highlight the success of your project to upper administration.
- Disseminate information about the benefits of the project to faculty through websites, the university newspaper, open research forums, and peer-reviewed articles.
- Disseminate information about project success at department seminars by highlighting the positive effects of the project on GK–12 Fellows (skills development, productivity, job search successes).
- Invite potential new faculty and research mentors to GK–12 meetings, school visits, and to participate in outreach efforts of the GK–12 project.

advisors of past and current Fellows also are a good resource for disseminating recruitment materials to their colleagues.

Recruiting Teachers and Schools

Once the partnering schools have been chosen for the project (or for an ongoing project that you are preparing to expand at a given school), it is important to recruit Teacher participants. Once you have the support of the school administration, it is best to promote the project throughout the school year to potential Teachers. GK–12 project leadership, research mentors, Fellows, and current GK–12 Teachers (from the ongoing project) can all assist by visiting the schools regularly, using the educational materials produced by the project (e.g., lessons and labs) in the classrooms of other teachers, and incorporating these approaches in a variety of outreach activities, such as school visits, teacher training, after-school projects, and science clubs. In some cases, GK–12 projects offer teacher training prior to Teacher selection so that the lessons developed by Fellows and Teachers are disseminated and new Teachers are recruited for the project. GK–12 Fellows can also offer visits to their laboratory or field sites, and they can participate in presentations at partnering schools.

EFFECTIVE STRATEGIES FOR RECRUITING GK–12 TEACHERS

- Invite teachers and their students to university research laboratories and/or take them on field trips with the Fellows.
- Have university faculty and GK–12 Fellows offer informal scientific talks and/or role model talks at the partnering schools.
- Invite teachers to participate in GK–12 project meetings.
- Provide teachers with information about the benefits of the project for their institution and their own professional development.
- Offer summer research internships for teachers to work with the Fellows in order to familiarize them with the Fellows’ research and laboratory techniques.
- Offer professional development projects for teachers during the summer and/or academic year to familiarize the teachers with lessons and labs developed by the Fellows.
- Highlight the project goals and the requirements related to time and weekly or monthly routines.

APPLICATION AND SELECTION

It is helpful to have information about the duties, responsibilities, and benefits for all members of the GK–12 community readily available online. In particular, as discussed next, application forms should include links to the lists of responsibilities and benefits, including stipends or other forms of compensation. Likewise, it’s helpful for Fellows and Teachers to understand the criteria by which their applications will be evaluated.

Application and Selection Process for Fellows

Applications for Fellows typically require information about the applicant’s academic background (some request official transcripts), reference letters, and short essays mentioning the applicant’s experience, interests, potential contribution to the project,

EFFECTIVE STRATEGIES FOR RECRUITING GK–12 FELLOWS

- Disseminate information about the benefits of the project to potential GK–12 Fellows through websites, student newspaper, and signs around campus.
- Build support of research advisors by offering presentations that highlight project successes and positive outcomes for their institution to different academic units. (Get invited to faculty meetings, etc.)
- Disseminate information about new Fellow openings to campus organizations and groups that work with graduate students.
- Make presentations about the success of your project at graduate student organization meetings and highlight the positive effect that the project has on GK–12 Fellows (skills development, productivity, job search successes).
- Invite potential Fellows to GK–12 meetings, school visits, to participate in outreach efforts of the project, or even shadow a current Fellow.
- Visit nearby and partnering historically black colleges and universities and other minority-serving institutions to recruit their students in your project.
- Provide applicants with a clear understanding of what will be required of them (the amount of time being a Fellow or Teacher will take, the number of hours they will likely spend in the classroom, what their weekly or monthly routine will be like, etc.)

and future career goals. It is important to balance the desire for information from the applicants with the need for an easy, short process that will not dissuade people from applying. (See Appendices 3.1, 3.2, and 3.3 for some sample application forms.) It is critical that the introduction to the application state the duties, expectations, and compensation for participating. Of course, the application packet

should also describe the selection process (key deadlines, what to expect, materials to be submitted, etc.). Usually, all applications are screened by the selection committee. Most GK–12 projects then interview the candidates, and some projects use standardized rubrics to rank the applicants. In those projects, the applicants receive an overall ranking based on their interview, qualifications, interest, potential, and ability to respond to questions. The actual requirements of the Fellows will depend on the GK–12 model used, the specific discipline taught in the project, and the target grade level in schools. Suggested characteristics for GK–12 Fellows are provided below.

In selecting GK–12 Fellows who are likely to be effective, it is important to think about the point at which each Fellow should be in his or her career. Because of the numerous responsibilities GK–12 Fellows have, many GK–12 projects require that graduate students not be taking many courses. Projects that focus on bringing the Fellows' research into the classroom typically need Fellows to be fairly advanced in that research. Additional selection criteria can include maintaining a good academic standing (e.g., the Fellow has passed qualifying exams or otherwise advanced to PhD candidacy), having a supportive research mentor, keeping up an interest in science education, being open to constructive criticism, being able to work in groups, and possessing leadership skills. The most productive GK–12 Fellows are students who have the potential to learn and grow in the project, so it is critical that the selection committee focus on both the background and potential of the applicants. To probe your applicants' potential for growth, it is recommended that you include questions in the interview which address typical situations encountered in carrying out the project. Some



A K-12 Teacher (far left) and a University of Florida GK-12 Fellow (second from left) co-teach a lesson on evolution to middle school students.

applicants who seem shy in the interview can actually benefit more from the GK–12 project than other applicants with outgoing personalities.

Perhaps even more important than determining an individual ranking or review for each applicant is examining how the potential participants can work together and create a balanced team of expertise, experience, and diversity.

Upon receiving word that they have been accepted into the program, Fellows often sign a formal contract indicating their own acceptance and their willingness to perform the duties of the project. Such a contract may include conditions for dismissal from the project. It is also a good idea to require a signature from the GK–12 Fellow's research advisor to signal an understanding of the project commitments.

Application and Selection Process for Teachers

The method you use for selecting GK–12 Teachers will depend on the model you apply to your project. Some projects use formal applications and interviews; in those cases, the process just outlined for Fellows can be followed. In other projects, a lead Teacher will work with the project director to help identify potential Teacher candidates. Usually, there is no formal application process in these cases, but rather an informal conversation about the expectations and benefits of participating. Some project models are completely open: Any Teacher may participate simply by inviting a Fellow into the classroom (on a one-time or an extended basis). Generally, those projects which pay a stipend to the participating Teachers have more formal application and selection processes than those which pay a single lead Teacher coordinator from the school (who is usually named at the time the school is chosen).

In selecting GK–12 Teachers, it is important to think about the level at which the prospective Teachers are in their careers and try to assess their willingness and ability to mentor a STEM graduate student. Then it is necessary to provide them the opportunity to present STEM content in their classroom. In many cases, brand-new teachers are too overwhelmed to accommodate yet another person (the GK–12 Fellow) in the classroom asking for their time and attention, and teachers near retirement are sometimes less adaptable or unwilling to learn new pedagogical and science skills. Keep in mind that these are generalizations and some projects have had outstanding results with both new teachers and teachers nearing retirement. Sometimes, because of the specific design of the project, teachers are

QUALITIES OF SUCCESSFUL GK–12 FELLOWS

- Be able to teach, or be interested in improving teaching skills, and be interested in presenting STEM to K–12 audiences.
- Have good time management skills, or at least an understanding of the need for, and an interest in, achieving these skills.
- Be able to collaborate with different types of people.
- Be able to do independent work.
- Have time to be in the classroom, and have a research advisor who understands the responsibilities of being a GK–12 Fellow.
- Be willing and available to participate in summer training and monthly meetings (if applicable).
- Be willing to be responsible and professional, to complete all forms with information (about teaching, scheduling, meetings, etc.) on time, and to communicate with all parties.

selected on the basis of their subject area (in STEM fields) and/or grade level. Additional selection criteria include having a supportive school administrator, maintaining an interest in science education, being open to constructive criticism, being adaptable, being able to work in groups, and possessing mentoring skills. Most successful GK–12 teachers either already have experience in mentoring preservice teachers or Fellows in pedagogical skills or are willing, and have the potential, to learn these skills. (The GK–12 project should then provide appropriate training.)

Some projects wait for all Fellows and Teachers for a given year to accept their positions before assigning Fellows to their partnering Teachers or schools, to ensure that the teams are formed according to the project’s goals. The actual process used to determine the placement of the Fellows into the schools depends on the model used for the project. In some cases, placement is decided by the project director; in others, it is done as a community, with the GK–12 Teachers

QUALITIES OF SUCCESSFUL GK–12 TEACHERS

- Be able to teach in the discipline, grade level, and type of school appropriate for the project (e.g., middle school or rural schools).
- Be willing to co-teach with the Fellows (not use the Fellow’s presence as an opportunity to “check out,” and not be afraid to have the Fellow help in the instruction mission).
- Be able to use, and be interested in using, Fellows in classes as resident mathematicians or scientists, not as student teachers.
- Have strong pedagogical training or a willingness to work on pedagogical skills, and be able and willing to work with Fellows on lessons.
- Be willing to participate in summer training to embrace new methodologies and technologies when appropriate, and to use the GK–12 materials developed for the project.

and Fellows working together during the summer as a larger group and then stating their preferences as regards the teams they want to join. Clearly, it is important that all the participants be aware of whatever process will be used in their placement.

EXEMPLAR

EFFECTIVE RECRUITMENT AND SELECTION PRACTICES FOR FELLOWS AND TEACHERS

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In the first month or two of the year, project staff visited potential Fellows. This approach helped staff identify applicants with the right social skills. Then, we held staff meetings to review applicants' credentials, weeding out those with weak or inappropriate backgrounds, questionable motivation, and personalities that would probably limit their effectiveness in the classroom.

Next, the remaining candidates had private interviews with the project staff. During the interviews, we clarified issues raised by the candidates' applications, explored the motivations of the applicants, and explained our expectations. We reached a consensus regarding which graduate students were hired into the project.

Teachers were selected with equal care. The expectations for their involvement with the project were explained. The few who did not function as desired by project staff were released.

To present the Fellows to the students, we created a short video in which Fellows introduced themselves and discussed what they do as graduate students and how they got interested in their respective disciplines. The video was shown to the class by the assigned Teacher before the Fellow went to the school.

GK-12 Fellows were called "Resident Scientists," "Resident Mathematicians," or, alternatively, "Fellows." Within a few months, all became role models in the eyes of students, including Fellows who made only occasional visits to certain classrooms. It was made clear to both Fellows and Teachers that the Fellows were not student teachers or aides. They were science consultants who actively engaged with the students and the Teacher.

New Fellows (selected in the spring) were asked to shadow an experienced Fellow for a few class periods in the spring. A new team of Fellows was selected each year so that the benefits to graduate students could be more widespread. However, we retained two to three of the most effective Fellows in a given year to serve a second year. They provided crucial experience, advice, and role modeling for the new Fellows.

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